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A Descriptive Study of Programmatic and Curricular Components of Regular and Developmental Kindergartens

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**A DESCRIPTIVE STUDY OF PROGRAMMATIC AND
CURRICULAR COMPONENTS OF REGULAR AND
DEVELOPMENTAL KINDERGARTENS**

by

Stephen A. Anderson

**A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Education
Department of Educational Leadership**

**Western Michigan University
Kalamazoo, Michigan
August 1994**

A DESCRIPTIVE STUDY OF PROGRAMMATIC AND CURRICULAR COMPONENTS OF REGULAR AND DEVELOPMENTAL KINDERGARTENS

Stephen A. Anderson, Ed.D.

Western Michigan University, 1994

The purpose of this study was to assess and describe programmatic and curricular differences between developmental and regular kindergartens. The research questions were to find how regular and developmental teachers describe their program and to determine from these descriptions any differences or similarities. A descriptive research design was used. A survey was developed from a search of literature, review by a panel of experts, and a pilot study.

The population for the study was all kindergarten teachers and the sample was all kindergarten teachers in a metropolitan Detroit county. Surveys were returned by 82% of the sample which met a priori standards for a valid response. Data are presented to compare sample demographic characteristics with population characteristics.

The survey developed provided a means to measure teacher responses regarding class size, emphasis toward a "developmental" or "academic" orientation; emphasis in terms of the time placed on various curricula, materials, and activities; and times actual specific activities were used. Data obtained from the survey were used to narrate a description of developmental kindergarten and regular kindergarten programs.

Responses indicated that both developmental and regular kindergarten programs held a mixture of developmental and academic orientations with more of an emphasis on developmental orientations. Responses on curriculum components indicated that although developmental kindergarten programs placed a larger emphasis on social/emotional activities, both had curriculums that included developmental objectives and traditional subject area curricula. Responses regarding material use indicated similarities except for a greater response from kindergarten teachers for pencil and paper materials. Given a list of 28 traditional activities, responses indicated their use was similar in all but five activities.

Data indicated that developmental kindergarten programs had smaller class sizes, more of an emphasis on a social/emotional curriculum, less of an emphasis on paper and pencil activities, and more of an emphasis on small group activities. However, in general, responses indicated more similarities between the two programs than differences.

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This dissertation is dedicated to the memory of my grandmother, Mrs. Helen Day Anderson. She was my model for hard work, persistence, and dedication.

One cannot complete such a project without the understanding, patience, confidence, and love of one's family. Therefore, I acknowledge the support of my wife, Holly, and my daughters, Mary and Stephanie.

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Stephen A. Anderson

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CHAPTER I

INTRODUCTION

Background of the Problem

Developmental kindergartens were established to intervene in a student's normal progression in school from entrance to graduation. The purpose of this intervention was to provide the "gift of time" for those identified as "developmentally young." As will be noted later, some contend that the program is merely a retention. Retention implies that a child is held back and receives a similar program for an additional year. In order to assess these contentions and as a precursor to evaluate effectiveness, a case needs to be made that the treatment, the programming and curricular components, are different from the regular kindergarten program.

The remainder of this chapter will provide a brief outline of the background of the problem leading to the focus on developmental and regular kindergarten curricular and program components. The first section will explore trends and research in early childhood education including kindergartens, assumptions underlying developmental kindergartens, assumptions underlying developmental philosophy, objections and research regarding developmental kindergarten, and available literature and research on developmental and regular kindergarten programs and curricular components. The second section will delineate the problem situation. The third, fourth, and fifth sections will list the purpose of the

study, the research questions, and definitions of terms. The sixth section will make a case for the need for this study, and the seventh section will summarize the chapter and the organization of the remainder of the study.

Authors have noted various trends that have affected early childhood education. Demand for preschool programming was projected to continue to increase until 1993 (National Center for Educational Statistics, 1986). Concurrently, changes have been noted in kindergarten programming: an increase in opportunities to attend kindergartens (Robinson, 1987), an increase in length of day (Robinson, 1987), increased required age of enrollment (Karweit, 1988), increased enrollment (National Center for Educational Statistics, 1986), increased certification requirements for kindergarten teachers (Robinson, 1987), an increased academic focus in the curriculum (Educational Research Service, 1986), and an increase in the use of developmental kindergartens and transitional first grades as an intervention technique (Educational Research Service, 1986; Michigan State Board of Education, 1984; Riley, 1984).

Intervention programs in early childhood education, including developmental kindergartens, have been based upon certain assumptions about the psychological development of children. The first assumption is that environmental enrichment or intervention may help children deemed "at risk" to prosper more than would normally be expected. This was the basic hypothesis used in the formation of the Head Start programs as part of the War on Poverty (Stallings & Stipek, 1986). The second assumption is that early experience is important to later development (Bloom, 1964; Freud, 1933; Inhelder & Piaget, 1958). The third

assumption is that the environment will have the greatest effect on an individual during the individual's most rapid period of change (Bloom, 1964). The debate concerning whether there are optimal or critical periods for intervention is inconclusive due to a lack of empirical evidence (Horowitz & Paden, 1973).

With these assumptions a great deal of interest was focused on early childhood education. The majority of research studies conducted in the 1960s, 1970s, and 1980s indicated that preschool programs of varying formats found positive outcomes for children with low socio-economic indicators (Stallings & Stipek, 1986).

Developmental theory and philosophy have established various axioms upon which developmental kindergartens as an intervention technique have been based. First was the belief that every student develops at different rates and that developmental ages can be assessed (Elkind, 1989; Gesell & Amatruda, 1947; Gesell Institute of Human Development, 1980; Ilg, 1982; Ilg, Ames, Haines, & Gillespie, 1978). Second was the belief that an "academic" program for a student who is not developmentally ready will result in learning, school, and psychological problems (Ames, 1981; Elkind, 1987a, 1987c; Gesell Institute of Human Development, 1980; Grant, 1989). Third was the belief that by giving a child the "gift of time," or placement in a more developmentally appropriate program for a year, the child will avoid school and personal problems and become more successful (Ames, 1981; Frick, 1986; Gesell Institute of Human Development, 1980; Grant, 1989).

Assuming that students identified as developmentally young are at risk, then the gift of time should allow them to develop to the point

where they are equal to or greater than peers in student outcomes for the intervention to be determined to be effective. While some organizations (e.g., Association for Childhood Education International, 1987) and some authors (Elkind, 1987a) may agree with some of the basic premises of this philosophy, the question has been raised as to whether the use of developmental kindergartens and transitional first grades that add a year to a child's schooling was the most appropriate intervention technique (Elkind, 1987b).

Various objections have been raised about the appropriateness of developmental kindergarten as an intervention technique. First, developmental kindergarten required that the child follow the curriculum instead of the curriculum following the developmental growth of the child which is contrary to developmental philosophy (Elkind, 1987b). Second, since developmental kindergartens add a year to a child's normal schooling, some claimed that developmental kindergartens are merely retentions in disguise (e.g., ASCD's Early Childhood Education Policy Panel, 1988). Third, the use of screening instruments to group children homogeneously by developmental age is contrary to existing research on the ineffectiveness of homogeneous grouping (Borg, 1965; Oakes, 1986; Slavin, 1988; Wilkinson, 1988). Fourth, screening instruments used by developmental kindergartens for placement decisions have been used inappropriately and often have lacked reliability, validity, and representativeness of norm sample for such a decision (Meisels, 1987).

To counter these objections, a case would have to be made by proponents of developmental kindergartens that they are effective or provide a treatment different from the norm. Few research studies have

been done to assess the outcomes of developmental programming. An analysis of literature indicated 16 studies (Avery, 1972; Axelrad, 1989; Beckman & Reinhart, 1985; Bell, 1972; Burkart, 1988; Dolan, 1982; Jones, 1985; Mackie, 1987; May & Welch, 1984a; McDaid, 1950; Pipitone, 1986; Raygor, 1972; Shepard & Smith, 1986; Simpson, 1984; Talmadge, 1981; Wildon et al., 1979) on outcomes of developmental or transitional programming. Seven of these studies assessed developmental kindergartens. The majority (four) of these seven studies assessed developmental kindergarten students after 3 or less years. None of the studies found used samples outside of a single school district, and only one study used a randomly selected sample. Research findings in these studies were mixed. In terms of achievement, most studies reported gains that did not last, were insignificant, or negative. In terms of affect, one study reported positive gains, one reported negative gains, and two reported no difference. In terms of school competence, the majority of studies reported negative outcomes. The findings of these studies are discussed in detail in Chapter II.

If there is not a preponderance of evidence to support the effectiveness of developmental kindergarten, then is it merely a retention? To counter this objection a case would have to be made that the program and curricular components, the treatment, is substantially different from the norm, regular kindergarten.

A literature review of state department of education documents regarding kindergarten curriculum was conducted to obtain a description of programmatic and curricular differences between developmental and regular kindergartens. None of the 15 studies (Adams, 1988; Alaska

State Department of Education [SDE], 1985; Arkansas SDE, 1987; Bartolini & Wasem, 1985; Corley, Ford, Tantham, & Taylor, 1982; Duncan, 1987; Education Service Center, 1984; Georgia SDE, 1986; Maine SDE, 1988; Minnesota SDE, 1986; Mississippi SDE, 1984; Oklahoma SDE, 1985; Phillips, 1987; Roberts, 1989; South Dakota SDE, 1986) found described any programmatic or curricular differences between developmental and regular kindergartens. In addition, in none of the research studies found on transitional or developmental programs cited above was a description, an assessment, or a test conducted to determine the homogeneity or heterogeneity of program variables. Therefore, the question remained as to whether there was a discernible difference in programmatic or curricular components between regular and developmental kindergartens from these sources.

In contrast to an examination of state department of education manuals on kindergartens, an examination of literature on early childhood and kindergarten programs and curriculum indicated similarities in various components. In analyzing kindergarten program manuals from various state departments of education and a survey of activities conducted by regular and developmental kindergarten teachers, Morado (1987), reported similarities, instead of differences, in program components in the areas of curriculum goals, activities, teacher role, student role, and assessment. This may be due to the policy, as Morado has pointed out, that state departments of education did not tend to differentiate between developmental and regular kindergartens. Kamii (1971), in an analysis of early childhood programs, claimed that the content and objectives for all programs are the same, the difference was in the

emphasis placed upon those common objectives.

The major difference found repeatedly in the literature regarding kindergarten and early childhood education was in the categorization of programs as being either academically oriented or developmentally oriented. The National Association for the Education of Young Children (NAEYC) (1986) has established criteria for judging the differences between "academic" and "developmentally appropriate" kindergartens by describing differences in the following program components: curriculum goals, teaching strategies, guidance of social-emotional development, language development and literacy, cognitive development, physical development, aesthetic development, motivation, parent-teacher relations, assessment, program entry, teacher qualifications, and staffing. These "components" are similar to those found in kindergarten manuals from 15 state departments of education (Adams, 1988; Alaska State Department of Education [SDE], 1985; Arkansas SDE, 1987; Bartolini & Wasem, 1985; Corley et al., 1982; Duncan, 1987; Education Service Center, 1984; Georgia SDE, 1986; Maine SDE, 1988; Minnesota SDE, 1986; Mississippi SDE, 1984; Oklahoma SDE, 1985; Phillips, 1987; Roberts, 1989; South Dakota SDE, 1986), national surveys of kindergarten programs (Hitz & Wright, 1988), and the ASCD's Early Childhood Education Panel (1988).

To summarize this section, developmental kindergartens as an intervention technique for "developmentally young" children were based upon developmental and intervention philosophy, increased demands for early childhood education, a series of positive research studies of pre-school education, and a concern for the perceived "academic" pressures

of kindergarten. However, because of its similarities to retentions and homogeneous grouping, questions regarding placement through screening, and mixed results of research on the effectiveness of developmental kindergarten, some contended that it was merely a retention. No literature was found describing any differences in treatment from regular kindergartens. Literature reviewed seemed to indicate similarities in kindergarten programs and curriculum which appeared to strengthen the retention argument. Research on outcomes had methodological flaws and reported mixed results.

Statement of the Problem Situation

The review of literature indicates an argument among professionals regarding the efficacy of developmental kindergartens. To counter the argument that developmental kindergartens are merely a retention or homogeneous grouping, a case needs to be made that the treatment is different from the norm, or regular kindergarten. The problem is that there is a lack of literature describing any programmatic or curricular component differences between regular and developmental kindergartens.

Purpose of the Study

The purpose of this study was to assess and describe programmatic and curricular differences between developmental and regular kindergartens. Teachers in both regular and developmental kindergarten programs described their program orientations and components. These descriptions were compared to assess differences in treatment.

Research Questions

There were two research questions to be answered by this study:

1. How would teachers describe the curricular and programmatic components of either their developmental or regular kindergarten programs?
2. Are there any differences or similarities in these descriptions?

Definition of Terms

For use throughout this study the following five terms have been defined: (1) developmental kindergarten, (2) regular kindergarten, (3) program and curricular components, (4) academic programs, and (5) developmental programs.

Developmental kindergarten: Developmental kindergarten has been defined by the Michigan State Board of Education (1984): Developmental kindergarten "is designed for those children who are five by December 1, but who are determined 'not ready' for the regular kindergarten program, e.g., young fives, developmental kindergarten, readiness kindergarten, etc." (p. 6).

Regular kindergarten: By state law a regular kindergarten program was also defined as a program designed for children who are five by December 1 of the school year in which they enroll (Michigan State Board of Education, 1984). Therefore, the only difference was that children entering regular kindergarten are those who have been determined by some screening instrument to be "developmentally ready." The purpose of this study was to describe these programs. Therefore,

no distinction, or assumption, was made as to their academic or developmental orientation or activities.

Program and curricular components: Program and curricular components are those components that have been used to delineate the differences between developmental and academically oriented kindergarten programs. They were derived from the National Association for the Education of Young Children's (1986) Position Statement on Developmentally Appropriate Practice in Programs for 4- and 5-Year-Olds, a study conducted by the Oregon Department of Education (Hitz & Wright, 1988), a policy statement by the Illinois State Board of Education (Bartolini & Wasem, 1985), and similarities to kindergarten program manuals from 15 state departments of education. Components examined in this study were purpose, teacher role, pupil role, activities, materials, expectations, and subjects studied.

Academic programs: Academic programs were those programs which were designed for the achievement of specific learning goals (Bartolini & Wasem, 1985). The National Association for the Education of Young Children (1986) categorizes them as those that have an over-emphasis on achievement of narrowly defined academic skills, formal teaching techniques, and a reliance on psychometric tests. In an Oregon survey, six statements were used to describe a "formal" program that has similarities to the above academic definition:

1. Provide substantial workbook and other seatwork activities in order to prepare children for first grade.
2. Involve all children in formal reading instruction.
3. Require all children to take part in every activity.

4. Administer reading readiness tests early in the school year to all kindergarten children.

5. Use privileges, grades, prizes, and other rewards to motivate children.

6. Require completion of all tasks and activities. (Hitz & Wright, 1988, p. 29)

Developmental programs: Developmental programs were those designed to meet the developmental age and individual needs of the child (National Association for the Education of Young Children, 1986). This difference in orientation affects the implementation of programmatic components. An example is provided in comparison of statements used in the same Oregon survey cited in the above paragraph to support a developmental approach:

1. Provide children with open-ended materials and experiences.

2. Encourage dramatic play as a means of enhancing cognitive and social development.

3. Show more interest in how children work and play than in what they produce.

4. Set aside major segments of each day for free play.

5. Devote at least half of each day to child-chosen activities.

6. Assume that children can be motivated to learn without resorting to tangible rewards. (Hitz & Wright, 1988, p. 29)

For the purposes of this study, the terms academic and developmental were operationalized in the survey instrument by a description of academic and developmental activities, behaviors, or orientations. These descriptions were obtained from a synthesis of statements by national associations and state departments of education.

Rationale for This Study

The existing research on developmental programming and transitional programming indicated few, if any, positive results from this type of programming, or developmental kindergartens. There was no evidence to show that developmental kindergartens were different from regular kindergartens. Some contend that developmental kindergartens are merely retentions or homogeneous groupings. Therefore, the question remained as to whether this type of programming offered a different treatment since a clear description of programmatic and curricular components were not found.

Intervention implied that some form of treatment would be used to intervene in the normal, and often debilitating, growth pattern of the child that would be beneficial. Nothing, as yet, has been found to show that developmental kindergartens were any different from regular kindergartens. The investment in the state of Michigan has been in the millions of dollars (Michigan State Board of Education, 1984). Research on retention and homogeneous grouping, if it is assumed that there are similarities to developmental kindergarten, indicated that there could be substantial risks. Before a case can be made for the investment in an intervention technique, there should be a case made that the intervention was different from what was already being done.

Summary

A basic assumption of intervention programs was that the intervention, or treatment, was different from the norm. The hope was that

this intervention will have some benefit. The literature, however, raised two substantial questions specifically about developmental kindergarten programs:

1. Were developmental kindergartens different from the normal programming?

2. Was this intervention beneficial?

It was the first question that this study focused upon since without an assumption of difference, the study of benefit would be meaningless. The purpose of this study was to describe differences that existed in programming characteristics between developmental and regular kindergartens using descriptors of programming differences found in the literature.

This chapter outlined the background of the study, the problem situation, the purpose of the study, research questions, and a definition of terms. Chapter II will review relevant research, and Chapter III will outline the research design and procedures. Chapter IV will report the findings of the study, and Chapter V will present a summary, conclusions, and recommendations from this study.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to assess and describe the differences between program and curricular components of developmental and regular kindergartens. In this chapter a review of related literature is presented. This chapter will follow the organization of Chapter I in reviewing the concepts leading to the problem and focus of this study. The first section explores the preschool trends and developmental trends that have influenced kindergarten programming. The second section explores the developmental theory and intervention issues that were some of the foundations for developmental kindergartens. The third section summarizes the research on preschool interventions. This leads to the fourth section on developmental and transitional programs research. Objections to developmental kindergartens are explored in the fifth section and an attempt is made in the sixth section to delineate descriptions of differences and similarities in developmental and regular kindergarten programs and curriculum. The seventh section summarizes the review of literature.

Preschool and Developmental Programming Trends

Various studies have indicated an increased demand and changes in early childhood education. In 1970, 21% of 3- and 4-year-olds were in preschool programs. By 1982 this enrollment trend had increased to

36% (Thomas & Peterson, 1987). Since 1970 preschool and kindergarten enrollments have steadily increased with increases projected until 1993 (National Center for Educational Statistics, 1986). This trend was coexistent with a 14% decline in the 3-to 5-year-old population (National Center for Educational Statistics, 1986). While in the 1960s and 1970s, many preschool programs were designed as intervention programs to overcome what were perceived as socioeconomic and environmental handicaps, the increase of women entering the work force has increased the demand at all social class levels (Elkind, 1986a). In the state of Michigan in 1984, 187 school districts reported having a preschool program (Michigan State Board of Education, 1984).

Six major trends occurred in kindergarten programming starting in the latter half of the 1970s and continuing into the 1980s. The first was an increase in opportunities for children to attend kindergarten. In 1974, 23 states offered kindergarten to 90% or more of its population, and by 1986 the number of states offering kindergarten had grown to 46 (Robinson, 1987). Second, the length of the average kindergarten day was growing. In 1986, 14 states, from a previous 8 in 1974, reported the average kindergarten day was from 2.5 to 6 hours (Robinson, 1987). Third, the average age of entering kindergarten students has increased as more states required an earlier cut-off date for entrance (Karweit, 1988). Fourth, enrollment continued to grow as demand increases despite a decline in the birthrate (Karweit, 1988; National Center for Educational Statistics, 1986). Fifth, more teachers of kindergarten programs were required to earn, or have earned, a bachelor's degree (Robinson, 1987).

The last trend in kindergarten curriculum was the area of most concern to proponents of a developmental approach (e.g., Elkind, 1986a). The focus of the curriculum was turning toward more academics or academic preparation. In a 1985 national survey, 22% of respondents reported that the primary focus of their kindergarten program was academic, and 63% reported a preparation focus for academic and social readiness (Educational Research Service, 1986). In a survey conducted by the Illinois State Board of Education in 1985, 90% of all kindergartens in that state reported an academic focus (Thomas & Peterson, 1987).

Elkind (1986a) has speculated that there were four social pressures that caused the shift to an academic focus at the kindergarten level. The first was the social movements of the 1960s stimulated by a competitive spirit brought on by Sputnik and a simultaneous effort to solve racial inequalities through the civil rights movement. The second pressure was a change in the perception of the young child from the "sensual infant" to the "competent infant." This, Elkind contended, was the result of works by Bruner, Bloom, and Hunt which established three axioms: (1) any child could be taught, (2) children attained half of their ability before age 4, and (3) IQ was malleable. Third, the increase in numbers of women in the work force has increased a demand for "quality" early childhood education. However, Elkind contended, quality education at this age is often misperceived as learning content. Fourth, Elkind asserted that the development of technology has created the mistaken belief that children at this age could learn more.

Several authors and organizations have contended that the academic focus in kindergarten was inappropriate (Association for Childhood Education International, 1987; Bredekamp & Shepard, 1989; Charlesworth, 1989; Elkind, 1986a, 1986b, 1987a, 1987c; International Reading Association, 1986; National Association for the Education of Young Children, 1986; Thomas & Peterson, 1987). Various problems have been attributed to this academic focus and children who are developmentally unprepared: lower achievement (Grant, 1989; Uphoff & Gilmore, 1986); frustration (Grant, 1989); short-term risks such as fatigue, loss of appetite, and psychosomatic stress (Elkind, 1986a, 1987c); and long-term influences such as a reduction in the motivation to learn, a sense of guilt, attention deficit disorders, and social adjustment disorders (Elkind, 1986a; Peck, McCraig, & Sapp, 1988; Uphoff & Gilmore, 1986).

To meet increased academic demands and avoid the negative effects of kindergarten failure, Charlesworth (1989) and Frick (1986) described four major programmatic developments that have occurred. First, there was an increase in the number of school districts offering prekindergarten programs. Second, there was an increase in states requiring greater chronological age for school entrance and greater numbers of parents voluntarily holding their children back a year before entrance. Third, some school districts have developed continuous progress plans to the third grade. Fourth, there has been the introduction of developmental placement programs with such names as development kindergartens, readiness kindergartens, begindergartens, or transitional first grades (Charlesworth, 1989; Frick, 1986).

The findings of national and state surveys reported that a substantial number of school districts have established developmental programs. Forty states have reported the existence of developmental kindergartens or transitional first grade programs (Schultz, 1989). Based upon the assumption that innovative programs were being introduced to stem kindergarten retention rates, the Educational Research Service (1986) in a national survey asked whether schools had a transitional first or multigrade room. Eighteen percent of respondents reported a transitional first grade and 9% reported a multigrade organization. In a survey of Michigan schools, 33% ($n = 161$) responded that they had developmental kindergartens, and 21% ($n = 102$) responded that they had a transitional first grade program (Michigan State Board of Education, 1984). In a similar survey conducted in Michigan, 61% ($n = 275$) reported having some form of developmental program (Riley, 1984). The estimated cost in state aid for developmental kindergarten programs in Michigan was \$3.4 million in the 1983-84 school year (Michigan State Board of Education, 1984).

In summary, various trends have been noted in early childhood education. There was an increased demand for early childhood education. There were increased academic pressures noted for kindergartens. Responding to these academic pressures has been an increased trend to introduce higher ages of enrollment and transitional and developmental programming.

Developmental Theory and Intervention Issues

From developmental theories various questions have been derived that are pertinent to a discussion of development kindergartens, since they are by definition an intervention in the normal kindergarten through 12th grade progression in public schools. Can environmental stimulation accelerate or retard development? When is the optimal time to intervene? Are influences of environmental stimulation short-term or long-term? What is known about the cognition of kindergartners and how does that influence curriculum? Does the age of the student, whether it is chronological or developmental age, influence the success of the student? If there are differences in development, are there means to intervene to facilitate development? This section explores the various theories and issues surrounding developmental theory and intervention.

Various developmental theorists have proposed theories that outline physical, psychosocial, cognitive, and moral developmental stages. Similar in all of these theories was an assumption that at each stage behaviors were organized around a dominant theme, that behaviors are qualitatively different than at another stage, and that all humans go through the stages in the same order (E. R. Hilgard, Atkinson, & Atkinson, 1979). Flavell (1977), in summarizing these various theories, proposed three models of development: (1) discontinuity of stages and no overlap, (2) continuous development and no overlap, and (3) gradual development and overlap of stages.

In the 1920s various authors concluded from their studies that IQ was constant and unchangeable (Goodenough, 1928; Hildreth, 1928).

In the 1930s the view changed when findings were reported from the Iowa studies. Environmental experience did have an effect on the IQ of retardates (Horowitz & Paden, 1973; Skeels, 1966). Most psychologists now have accepted the premise that an individual's development is due to both heredity and environment (E. R. Hilgard et al., 1979; Horowitz & Paden, 1973). If this was the case, can the environment be altered to affect learning? Gesell and Amatruda (1947), in their studies of child development, proposed that environmental manipulations were basically benign and somewhat superficial in their effect on development. However, Fowler (1968) and Ashton (1975), in their reviews of Piagetian research in various countries, proposed that language, environment, cultural beliefs, and general early stimulation have a direct influence on development, particularly in the area of development of cognitive complexity.

Freud (1933), Inhelder and Piaget (1958), and Bloom (1964) have all promoted the idea that early experience is important to development. However, there was a disagreement as to whether these periods of growth, or developmental change from one stage to another, were the best periods for intervention or whether a lack of intervention at these periods would have a lifelong influence, or whether stimulation at appropriate periods could accelerate growth (Horowitz & Paden, 1973). The principle of readiness, or principle of motor primacy, stated: "Until the necessary physical structures are mature, no amount of practice will be sufficient to establish a skill" (Coon, 1980, p. 331). Since children appeared to grow most rapidly physically and cognitively in the early years, many psychologists believed that the quantity, quality, and kind

of early experiences at that time are important parameters for determining eventual functioning (Bloom, 1964; Fowler, 1968; Horowitz & Paden, 1973).

There was disagreement as to how long environmental intervention would have an influence. Some researchers have reported short-term influence in IQ and achievement with both below average and above average students that disappear to no significant difference after a few years (Charlesworth, 1989; Dennis, 1940, 1973; Durkin, 1974; J. Hilgard, 1932; J. Kagan & Klein, 1973). Other researchers have reported long term influence in the areas of IQ, achievement, employability, and social adjustment (Glaser & Resnick, 1973; Pasnak, 1984; Skeels, 1966; Skeels & Dye, 1939).

Piaget's cognitive developmental theories have described not only various stages of cognitive development, but also the differences in learning at those stages. Piaget's theory proposes two distinct stages of intellectual development that are of concern to this study: sensorimotor and preoperational. In the sensorimotor stage (birth to 2 years old) the child developed schemata through sensory perception. In the preoperational stage (2 to 7 years old) these schemata became symbolized through language. The perception of the child was egocentric and there was still confusion about physical concepts and cause and effect (Bourne & Ekstrand, 1982).

According to Piaget's theory, young children developed knowledge through active construction on the part of the individual (Kamii & Radin, 1967). It was by the acting upon, or interaction, with the environment and the objects and people within the environment that both

socioemotional and cognitive knowledge developed (Kamii, 1973, 1985; Kamii & Kamii, 1990; Kamii & Katz, 1979). Piaget (cited in Griffiths, 1972) suggested that a child must be allowed to learn by themselves and that good pedagogy would be to facilitate the environment, intervene at the right time (Kamii & Katz, 1979), and present the child with tasks with which the child could then experiment. Elkind (1986a) asserted that because of cognitive developmental theory, it was an established fact that young children learn differently and that this difference should be reflected in early childhood education.

Elkind (1986a) asserted that because of cognitive developmental theory, it was an established fact that young children learn differently and that this difference should be reflected in early childhood education. Toepfer (1981) believed that brain research showed that the practice of introducing formal reading instruction at an early age was counterproductive.

These developmental theories have had an influence on the development of curriculum and programming. Various authors and organizations have promoted a curriculum that provided physical, social, and intellectual activities; was developmentally appropriate; allowed for student interaction and experimentation; and recognized play as an important component in a young child's learning and social development (Association for Childhood Education International, 1987; Day & Drake, 1986; Elkind, 1987a; Hertz, 1984; Hiebert, 1988; S. L. Kagan, 1989; Kamii, 1973; National Association for the Education of Young Children, 1986; Sava, 1987; Toepfer, 1981). These curricular and programming influences are explored in more detail in a later section.

Age has been one consideration in the creation of developmental programming and screening. The Gesell Institute's (Ilg, 1982; Ilg et al., 1978) position is that students should be placed in school based upon their developmental age. Others have held that this "gift of time" or academic "redshirting" could avoid frustration and failure and result in greater school success (Frick, 1986; Grant, 1989). The Gesell Institute's (1980) position was that the developmentally young child should take an extra year to mature by one of four means: (1) prekindergarten, then kindergarten; (2) 2 years in kindergarten; (3) stay at home 1 year and then attend kindergarten; or (4) attend kindergarten and then a pre-first-grade program.

Studies have been conducted comparing the outcomes of students to their chronological age. Some researchers have reported that children chronologically older received above average grades, higher achievement, fewer retentions, fewer referrals, fewer academic problems, and gifted children tended to be older when entering first grade (Diamond, 1983; Langer, Kalk, & Searles, 1984; Maddux, 1980; Maddux, Stacy, & Scott, 1981; Montz, 1985; Uphoff & Gilmore, 1986).

Other research findings supported the belief that chronological or developmental age was not a factor in school success. DiPasquale, Moule, and Flewelling (1980), in a study of 7 year-olds in London, reported that socioeconomic level explained 3 times as much variance in reading achievement as did chronological age. Gates (1937) reported that the success of children in reading at different mental ages was due to differing teaching methods. Gredler (1978), in a follow-up study, reported that while there was a significant difference in achievement by

older students at first grade, this difference was not significant at later grades. Mackie (1987), in a post hoc study of two groups of eighth graders differentiated by their developmental age scores on the Gesell, reported no significant difference in achievement, self-concept, or behavior.

Besides research on achievement, other authors contend that the issue of chronological age raises other issues. Three authors claimed that the emphasis on chronological age established stereotypes that influenced teacher expectations and, thereby, student achievement (Gredler, 1980a; Morado, 1987; Williams, 1987). Bredekamp and Shepard (1989) suggested that to increase the disparity among groups based upon either chronological or developmental age actually made heterogeneous teaching more difficult. Green and Simmons (1962) suggested that the basis of comparison in age research was faulty: older children can be said to have learned more only if the assumption was made that the older child did not know more than the younger child when the child began school.

Three assumptions from developmental and intervention theory were the basis of the use of developmental kindergartens as an intervention technique. First, younger children learned differently and required more developmentally appropriate learning activities (Association for Childhood Educational International, 1987; Day & Drake, 1986; Elkind, 1986a, 1989; Ilg, 1982; Ilg et al., 1978; National Association for the Education of Young Children, 1986). Second, developmentally appropriate programs could avoid stress and future psychosomatic problems (Elkind 1986a, 1987c; Grant, 1989). Third, programs that allowed for

an extra year of growth, meaning that children will be older when they enter the normal school program, would produce future academic success and avoid future academic problems (Grant, 1989; Ilg, 1982; Ilg et al., 1978; May & Welch, 1984a).

Apparently school districts that established developmental kindergartens had similar assumptions in mind. When Michigan schools were asked what results were to be gained from developmental programming, 35% predicted an increase in school success, 31% predicted better school adjustment, and 11% predicted less future retentions (Riley, 1984).

This last assumption, allowing for an extra year of schooling with the hopes of increased achievement or avoiding problems, was where some authors would tend to disagree. Some have proposed a continuous progress plan throughout the primary grades without the addition of an extra year of schooling (Bredekamp & Shepard, 1989; Charlesworth, 1989; Elkind, 1987b, 1987c, 1989; Hiebert, 1988; Meisels, 1987; National Association for the Education of Young Children, 1986).

To summarize this section, there seems to be general agreement that developmental stages existed. Historically, the view of development has changed from stages being constant and unchangeable to one where the possibility exists to intervene for the benefit of the child. From developmental theory some authors contended that academic approaches to early childhood education were inappropriate and would result in negative effects. They proposed a more developmentally appropriate environment, programming, and pedagogy for children. While their theory was based on a concept of developmental age,

research on chronological age as a factor in achievement was mixed. There was disagreement as to whether intervention to promote development should be short-term (extra year of growth) or long-term.

Preschool Intervention

The trends in early childhood education indicated an increased demand and interest in early childhood education to meet changing social trends. This section explores the research regarding preschool programs which along with developmental theory was the basis for developmental kindergarten intervention.

In the latter half of the 1960s various preschool programs using a direct instruction, traditional preschool, home tutoring, and tutoring of the parents approaches reported growth in IQ scores (Caldwell, 1968; Gordon, 1969; Painter, 1969; Schaefer, 1968; Strickland, 1971). Researchers in the early 1970s of the Head Start program reported that while students made initial gains in intelligence and school readiness tests, these gains were diminished or disappeared by first grade (Bronfenbrenner, 1974; Horowitz & Paden, 1973; Stallings & Stipek, 1986; Westinghouse Learning Corporation, 1969; Wolff & Stein, 1966).

In the latter half of the 1970s two evaluation projects were initiated in response to these disappointing results. The first was the Follow Through program initiated by the Department of Education to expand services and evaluate the Head Start program (Stallings & Stipek, 1986). The second was the formation of the Consortium for Longitudinal Studies (Stallings & Stipek, 1986). This consortium was a group of 12 investigators and directors of preschool programs to

investigate the long-term benefits of preschool education. Outcomes of preschool programs investigated by these projects and other researchers included student achievement, school competence, intelligence, cost effectiveness, and student affect.

Student achievement was evaluated by looking at achievement levels of students in elementary and middle schools after several years compared to a control group. Researchers in four studies reported findings of significant achievement gains in mathematics and reading for all students and in one study only for males (Carnine, Carnine, Karp, & Weisberg, 1988; Darlington, 1980; Lazar, Darlington, Murray, Royce, & Snipper, 1982; Miller & Bizzell, 1983). Three studies contained findings of no significant gains in achievement (House, Glass, McLean, & Walker, 1978; Rubin, Olmstead, Szegda, Wetherby, & Williams; 1983; Schweinhart & Weikart, 1980).

School competence was defined as promotion to the next grade and a lack of referrals for remedial services. Researchers in three studies reported findings of significantly lower grade retentions and special education referrals (Darlington, 1980; Lazar et al., 1982; Rubin et al., 1983). Lower dropout rates and fewer delinquency problems were reported by longitudinal researchers for students in two studies (Carnine et al., 1988; Schweinhart & Weikart, 1980).

As in previous studies, intelligence gains did not last long. In three studies intelligence gains were described as statistically significant but the gains only lasted until the first grade (Darlington, 1980; Lazar et al., 1982; Schweinhart & Weikart, 1980).

Schweinhart and Weikart (1980) concluded their study with the

claim that their program was economically beneficial after following students through high school graduation. Figuring in costs for the program and taxes paid by a higher number of preschool children becoming taxpayers versus the higher costs of unemployment, arrests, and incarcerations for nonpreschoolers, they contended that for each dollar invested, seven dollars were earned or saved in increased tax collections or lower social system costs.

The last area of investigation was student affect. In a summary of results for the Consortium for Longitudinal Studies representing 12 programs (Lazar et al., 1982), the consortium reported significant differences for preschool students for achievement orientation, student self-evaluation, and maternal satisfaction and aspirations for their children who had attended preschools.

Besides the overall effectiveness of preschools, various studies have compared the effectiveness of the types of preschool programs and curriculum. Miller and Bizzell (1983) evaluated the long-term benefits between more developmental and child-initiated approaches (Montessori and traditional preschool) and more direct instructional approaches (Bereiter-Englemann and DARCEE). No differences were found in IQ or achievement for females up to the eighth grade. Males were found to have significantly higher reading achievement in Grades 6-8 and mathematics achievement in Grade 8 only for the Montessori program. Direct instruction studies have reported findings of accelerated achievement (Pasnak, 1984) and long-term achievement (Carnine et al., 1988).

Besides achievement, another claim for more developmentally appropriate and child-initiated programs was improved socialization.

Schweinhart (1988), in comparing child-initiated curriculums to teacher-initiated curriculums, reported that 8% of students in child-initiated programs reported delinquent acts as teenagers as compared to 44% in direct instruction programs.

To summarize this section, preschool research has shown both short-term and long-term benefits for "at-risk" students. The research on comparing types of preschool programs and curriculum seemed to show some benefits for a developmental approach.

Developmental and Transitional Programs Research

This section reviews the research found that studied the outcomes of developmental and transitional programs. Like many of the preschool studies, developmental and transitional programs have been assessed in the areas of student achievement, school competence, and affective measures.

In the area of achievement outcomes the majority of studies found reported either no significant gains or negative gains. In two studies achievement of developmental or transitional programming students remained behind age-mates (Dolan, 1982; Pipitone, 1986). Nine studies reported that initial gains in achievement disappeared to no significance after 1 to 8 years (Axelrad, 1989; Beckman & Reinert, 1985; Burkart, 1988; Dolan, 1982; Jones, 1985; Mackie, 1987; May & Welch, 1984b; Shepard & Smith, 1986; Talmadge, 1981). Four studies comparing either developmental kindergarten or transitional first grade students to students identified, but promoted, reported a significantly negative achievement difference (Axelrad, 1989; May & Welch, 1984a; McDaid,

1950; Wilson, Hewett, Sheets, & Thomas, 1979). The findings of two studies indicated that placing "at risk" students in either a developmental kindergarten or a transitional first grade did not result in a significant difference in achievement (Dolan, 1982; Raygor, 1972).

Studies reporting a positive gain in achievement did so by comparing developmental kindergarten or transitional first grade students to peer groups, not age-mates. Wilson et al. (1979) reported achievement higher than expected for the students' IQ in fourth and sixth grades. Simpson (1984) found that by the end of transitional first grade, achievement scores compared "favorably" to those completing regular kindergarten.

Few studies contained assessments of affective outcomes. Avery (1972) reported positive affective growth for developmental kindergarten or transitional students through reported parental perceptions of more mature behavior. No significant difference was found between developmental kindergarten or transitional first grade students and those promoted in terms of school attitude (Dolan, 1982) or developmental behavior (Burkart, 1988). In one study comparing students identified as developmentally "young" and "old," no difference was found in self-concept (Mackie, 1987). One study comparing transitional students to promoted students found that transitional students after 2 years had lower scores in self-esteem (Bell, 1972).

Like preschool studies, school competence as measured by retentions, referrals, and teacher perception generally showed no difference between developmental and promoted students. Research studies measuring promotions found 93% to 100% of those students identified

"at risk" but mainstreamed were promoted to second grade as opposed to only 20% of identified students placed in transitional programs (Avery, 1972; Bell, 1972). In terms of retentions, no difference was found in one study after sixth grade between transitional students and parent refusal groups (Dolan, 1982). In terms of special education and remedial mathematics and reading services, higher numbers of referrals to special education, Chapter I, and adaptive motor and resource room services were reported among developmental kindergarten students than promoted students (Axelrad, 1989; May & Welch, 1984a).

Unlike preschool studies that compared curriculum emphasis to outcomes, no study was found making such a comparison for developmental or transitional programs. However, in a survey of Michigan schools with developmental kindergarten programs, developmental and regular kindergarten teachers rated as important similar activities. The differences in the responses indicated that unlike developmental kindergartens, regular kindergartens had more paper and pencil activities and more academic activities such as writing student names and counting (Morado, 1987).

Objections to Developmental Kindergartens

Without a preponderance of research indicating that developmental kindergartens are effective in meeting the hoped for results of intervention, various objections to developmental kindergarten from the literature will be summarized in this section. The literature found focuses on four areas: retention, homogeneous grouping and equity, screening instruments, and programming.

Similarities to Retention

Developmental kindergartens or transitional first grades usually required an extra year of schooling (Michigan State Board of Education, 1984). Egerston (1987) and ASCD's Early Childhood Education Policy Panel (1988) both contended that developmental kindergartens and transitional grades were merely retentions. Kentucky through legislation and Mississippi through pilot programs have replaced K-3 grades with "primary programs" where a child progresses at his or her own pace (Olson, 1990). The Texas Board of Education voted unanimously to bar districts from retaining through transitional programs, thus determining that transitional programming constitutes retention (Cohen, 1990). The chancellor of New York City school system, Chicago's local school councils, and the Massachusetts Commissioner of Education have all urged alternatives to retention (Olson, 1990).

Despite the fact that 75% of respondents in the Fifteenth Annual Gallup Poll on the Public's Attitude toward the Public Schools (Gallup, 1983) responded that promotion should be based upon examinations, a body of research exists that contends that retentions are counterproductive. Three reasons from research were given for this conclusion. First, retention practices vary greatly among counties, schools, and within school districts to question the objectivity of the decision (Gredler, 1980b; Smith & Shepard, 1987). Second, a meta-analysis of achievement studies from 1925 to 1980 indicate that promoted students versus retained students achieved at a significantly higher level (Holmes & Matthews, 1984). Third, studies of affective outcomes indicate that

promoted students versus retained students had significantly higher means on measures of personal adjustment, self-concept, and positive attitudes toward school (Holmes & Matthews, 1984; Shepard & Smith, 1987). In fact, Smith and Shepard (1987) reported that retention was ranked third behind blindness and death of parents as stressful events.

Authors who have promoted the use of developmental kindergartens have also promoted the use of retention as a "gift of time." Ames (1981) and Grant (1989) contended that the experience should be less frustrating than promotion, result in greater school success, and result in minimal emotional disturbance, depending on how the parent handled the retention. In one study investigating the effects of kindergarten retention, nonpromotion of developmentally immature kindergarten students had a positive effect on peer acceptance, academic attitude, classroom adjustment, and academic achievement over those promoted at the end of the eighth grade level (McCarty, 1986).

However, studies conducted at the primary level report similar outcomes as the retention research: subjective decision making, negative achievement, and negative affect. In a survey of Michigan developmental kindergarten and regular kindergarten teachers, Morado (1987) reported that all regular kindergarten teachers rated their students as socially mature whereas most developmental kindergarten teachers rated their students as socially immature. In the same survey (Morado, 1987) the response of developmental kindergarten teachers indicated that 89% of those students placed in developmental kindergarten are enrolled in regular kindergarten the following year (Morado, 1987). In making decisions regarding promotion or retention at the kindergarten level, 68% of

kindergarten teachers in one study reported that they gave important weight to chronological age (Smith & Shepard, 1987).

Regarding achievement outcomes at the primary level, one study found transitional placement no more successful than retention (Smith & Shepard, 1987); two studies reported initial achievement gains of retained students were not maintained and could be considered unsuccessful (Chafe, 1984; Sandoval & Hughes, 1981); and one study reported no significant difference in achievement between matched pairs of retained and promoted kindergarten students (Shepard & Smith, 1987).

Like the retention research, Shepard and Smith (1987) reported significantly higher measures of affect for promoted primary students. In addition, Chafe (1984) and Sandoval and Hughes (1981) reported that retentions could be deemed unsuccessful in terms of social and emotional problems in their studies of primary students.

Homogeneous Grouping and Equity

The second objection was that developmental kindergartens are subject to the problems of homogeneous grouping. Developmental kindergartens by definition screen and place students based upon an indication of "developmental age," a homogeneous characteristic. Homogeneous grouping is intended to reduce the variability in ability amongst students with the goal that to do so would be more efficient and effective. However, Slavin (1988) contended that homogeneous grouping does not accomplish what was intended. In studying ability grouping, he found that teachers who had divided their class into two groups reduced variability by 7% and three groups reduced variability by

only 17%. Other studies of homogeneous grouping reported the following: (a) enhancement of achievement of the fast group and retardation of achievement of the slower group (Borg, 1965), (b) little overall effect in total achievement (Slavin, 1988), (c) decreased instructional time and opportunity for the lower tracks (Oakes, 1986), and (d) a more negative learning environment in the lower track classes (Oakes, 1986; Wilkinson, 1988).

Homogeneous grouping also raises concerns about social issues regarding equity. In two studies of developmental programming (Axelrad, 1989; Gredler, 1984), the composition of developmental or retained classes indicated an unusually higher percentage of males and ethnic minorities.

Screening for Developmental Kindergartens

The third objection to developmental kindergartens was in the screening instruments used to make placement decisions. In the 1983-84 school year the Michigan State Board of Education (1984) conducted a survey of early childhood programs in all school districts. The return rate for the survey was 93% ($n = 518$). Schools having a readiness kindergarten program were asked what type of screening instrument was used for their program. Two other surveys found similar rankings (Morado, 1987; Riley, 1984). The following four tests represented 68% of all responses: Gesell, ABC, DIAL, and Brigance Diagnostic. The responses and rank order of screening instruments used are shown in Table 8 in Appendix C. In Morado's (1987) survey, 79% of responding school districts reported doing kindergarten screening using one

instrument and only 16% reported using a two-step process where after initial screening further evaluation was performed.

Using the survey results, a search was conducted of all test reviews contained in the Seventh, Eighth, and Ninth Mental Measurement Yearbooks (Buros, 1972, 1978; Mitchell, 1985). An analysis of these test reviews indicated that all screening instruments had severe limitations in terms of validity, reliability, and norming samples. In fact, most were never intended for placement decisions. The results of this literature analysis are summarized in Table 9 in Appendix C.

In order for educational decisions to be informed and appropriate, certain measurement standards need to be met. The test needs to be valid, reliable, and applicable in terms of norming sample (Thorndike & Hagen, 1977). A test should not be used to identify and place children without reliability and validity data (Meisels, 1987). Shepard and Smith (1988) in their examination of tests in use at the kindergarten level concluded that none of the existing tests were accurate enough to justify removing children from their normal peer group and placing them in 2-year programs. Meisels (1987) and the National Association for the Education of Young Children (NAEYC, 1986) have argued that the use of any tests for placement in developmental kindergartens is inappropriate or inapplicable.

Programming

The fourth objection has been in terms of programming. The Gesell Institute's (1980) position was that a developmentally young child should take an extra year to mature such as placement in a

developmental kindergarten program. However, Elkind (1987b) contended that creating one-year programs makes the child fit the program instead of the reverse which is the essence of developmental theory. In following this idea both Kentucky and Mississippi have begun to replace K-3 grades with "primary programs" (Olson, 1990).

To summarize this section, with the lack of research showing the effectiveness of developmental kindergartens as an intervention technique, various authors, organizations, and states have raised four objections to developmental kindergartens. The first was that they are similar to retentions both in design and outcomes research. The second was that developmental kindergartens are a form of homogeneous grouping which raises equity issues. The third was that the screening instruments used for placement of students were invalid, unreliable, and inapplicable. The fourth objection was that this type of one-year programming does not meet the assumptions of developmental theory.

Developmental and Regular Kindergarten Programs and Curriculum

Without a preponderance of research to indicate the efficacy of developmental kindergartens and with the objections raised that developmental kindergartens are retentions and homogeneous grouping, a case needs to be made that the treatment is different from the norm to support the theory that developmental kindergartens are an intervention technique. This section explores the literature regarding programmatic and curricular components of regular and developmental kindergartens.

Sixteen studies were found reporting the outcomes of transitional

versus developmental programs. These studies are discussed in detail in the section, Developmental and Transitional Programs Research. In none of these studies found were any distinctions made in terms of programmatic or curricular components between developmental and regular kindergarten programs other than the grouping of children due to their developmental age.

Only one study was found from database searches assessing regular and developmental kindergarten programming. This study, however, seemed to indicate similarities rather than differences. Morado (1987), in her survey of kindergarten and developmental kindergarten programs in Michigan, reported that given a list of traditional kindergarten activities, developmental kindergarten teachers rated 18 out of the 27 presented as very important. Traditional kindergarten teachers in her study rated 23 out of 27 traditional activities as very important. Morado (1987) noted that state departments of education do not tend to define or regulate developmental programs as distinct and different from regular kindergartens.

As discussed in Chapter I, developmental kindergarten was defined by the Michigan State Board of Education (1984) as a program "designed for those children who are five by December 1, but who are determined 'not ready' for the regular kindergarten program, e.g. young fives, developmental kindergarten, readiness kindergarten, etc." (p. 6). However, this definition does not provide any clues as to programmatic and curricular differences.

The problem of this study was that there was lack of literature as shown above providing a clear description of programmatic or curricular

differences between regular and developmental kindergartens other than screening for placement. Therefore, a literature review was conducted to find a consensus of common components for early childhood education programs to achieve the purpose of the study, to assess and describe programmatic and curricular differences between developmental and regular kindergartens. This literature was the basis for developing categories, operational definitions, and a synthesis of common components for assessment.

Both an historical and modern analysis of early childhood education showed the influences of theoretical views of development. Kamii (1971) categorized the historical curricular goals of early childhood education as follows: 1920s--physical health and routines, 1940s--socioemotional growth, and 1960s--cognitive growth and readiness. Spodek, (1985) in his study of early childhood curriculum, found three major types: (1) the behavior-environment view which promotes learning through a set of responses and reinforcement of learning, (2) the maturational-nativist view that facilitates the individual's natural genetic makeup to unfold, and (3) the comprehensive-interactionist view that used developmental tasks and social and environmental interaction.

Kamii (1971), in her synthesis of curricula of various early childhood programs, asserted that the broad objectives for early childhood education are (a) socioemotional development, (b) perceptual-motor development, (c) cognitive development, and (d) language development (a subset of cognitive objectives). The difference she found in the three major types of programs (traditional, cognitively and direct instruction oriented as represented by Gray and Bereiter-Englemann, and the

Piagetian cognitively oriented programs) occurred in the emphasis placed in their curricula on these objectives although the content remains the same for all. The content for all programs, Kamii contended, was literally anything that is found in the child's environment. Those who emphasize "enrichment" were simply extending the knowledge of that environment in novel ways. Kamii described various objectives emphasized in the three types of programs. The traditional preschool emphasized socioemotional and psychomotor objectives. The Gray cognitively oriented program emphasized one socioemotional objective, psychomotor objectives, and all cognitive objectives. The Bereiter-Englemann program emphasized most cognitive objectives, and the Piagetian cognitive oriented preschool emphasized all objectives in all areas.

From this historical review, a contemporary review was conducted of recommendations for kindergarten curriculum and program components of state department of education (SDE) documents (Adams, 1988; Alaska SDE, 1985; Arkansas SDE, 1987; Bartolini & Wasem, 1985; Corley et al., 1982; Duncan, 1987; Education Service Center, 1984; Georgia SDE, 1986; Maine SDE, 1988; Minnesota SDE, 1986; Mississippi SDE, 1984; Oklahoma SDE, 1985; Phillips, 1987; Roberts, 1989; South Dakota SDE, 1986) and professional organizations (ASCD's Early Childhood Education Policy Panel, 1988; National Association for the Education of Young Children [NAEYC], 1986). The recommendations for kindergarten curriculum and programming from these state documents and the NAEYC are shown in Table 10 in Appendix D.

A majority of SDEs and professional organizations recommend curriculum in the physical, emotional, social, and intellectual areas. The

majority recommended programs that provide for individualization, an interactive environment, concrete manipulatives, play as a means of learning, integrated units, centers, and developmentally appropriate activities. All provided descriptions regarding the purpose of kindergarten, the teacher's role, the pupil's role, activities to conduct, learning expectations, and suggested curriculum. In terms of "traditional" subject areas, a majority recommended curriculum and activities in the areas of fine/gross motor/physical education, communication or language arts, and fine arts. Out of 16 documents, other traditional subject areas mentioned were mathematics (4), social studies (5), science (6), and health/safety (6).

All of the components noted by a majority of states and professional organizations were similar to the ASCD's Early Childhood Education Policy Panel's (1988) definition of a program that has a developmental focus:

1. A curriculum that has play and language activities that accommodate different rates of child growth and development.
2. Constructing meaning from concrete experiences.
3. Children grow cognitively and socially through collaborating with others.
4. Learning activities are highly experiential.
5. A variety of formats from independent activity to teacher-led, small group instruction.
6. Role of child is active and initiates learning.

While it would appear as though most state departments of education and national associations promoted a developmental approach,

there are some who promoted a more direct, academic approach. Carnine et al. (1988) developed a direct instruction program for kindergartens. The results of their program was significant gains in achievement and affective gains after 4 years. Philadelphia promoted a direct instruction approach believing that a behavioral model has the most effect with disadvantaged children (McNamara, 1987). South Dakota promoted an academic approach suggesting that only 20% of the time being put aside for unstructured activities (South Dakota State Department of Education and Cultural Affairs, 1986).

In order to meet the purpose of this study to assess and describe program and curricular differences between regular and developmental kindergartens, the next area for literature review was to determine if there were categories to differentiate early childhood, and kindergarten, programs and curriculum. A body of literature suggested that there are recognized differences in academic and developmental programming. Elkind (1986a, 1987c) suggested that early childhood education should be more developmental to avoid the risks of academic pressures. Surveys (Educational Research Service, 1986; Hitz & Wright, 1988; Thomas & Peterson, 1987) indicated an academic focus in kindergartens. The National Association for the Education of Young Children (1986) promoted developmentally appropriate practices versus formal teaching techniques and an emphasis on the achievement of academic skills. The Association for Supervision and Curriculum Development's Early Childhood Education Policy Panels (1988) described both academic and developmental programs. The Illinois State Board of Education (Bartolini & Wasem, 1985) differentiated between academic and developmentally

oriented programs.

The categories of academic and developmental programming have been defined conceptually and operationally. The ASCD's Early Child Education Policy Panel (1988) defined a program with an academic focus as one where the teacher clearly defined the content; children were provided with a sequenced series of activities that build competence in reading, language, and mathematics; instruction was deliberate and systematic; concepts and skills were reinforced and practiced; and at least one half of the time was spent on direct instruction. The same panel defined a program with a developmental focus as one that emphasized that their programs fit the way young children learn in general and accommodate the specific developmental needs, abilities, and interests of individual children. Egerston (1987) described these differences in what he called the shifting kindergarten curriculum as the difference between skill based versus developmentally oriented programs.

These conceptual definitions were operationalized by descriptions of orientations, behaviors of teachers and pupils, materials, and the environment. A synthesis of various descriptions provided by state departments of education (Adams, 1988; Alaska SDE, 1985; Arkansas SDE, 1987; Bartolini & Wasem, 1985; Corley et al., 1982; Duncan, 1987; Education Service Center, 1984; Georgia SDE, 1986; Maine SDE, 1988; Minnesota SDE, 1986; Mississippi SDE, 1984; Oklahoma SDE, 1985; Phillips, 1987; Roberts, 1989; South Dakota SDE, 1986), surveys (Hitz & Wright, 1988; Morado, 1987), and associations (ASCD's Early Childhood Education Panel, 1988; NAEYC, 1986) are provided in Table 1.

Table 1
Developmental Versus Academic Program Components

Component	Developmental	Academic	Source
Purpose	Social, emotional, intellectual, and physical development.	Achievement of specific learning goals.	Adams, 1988; Alaska SDE, 1985; Arkansas SDE, 1987; ASCD's Early Childhood Education Panel, 1988; Bartolini & Wasem, 1985; Corley, Ford, Tantham, & Taylor, 1982; Duncan, 1987; Educational Service Center, 1984; Georgia SDE, 1986; Hitz & Wright, 1988; Maine SDE, 1988; Minnesota SDE, 1986; Mississippi SDE, 1984; National Association for the Education of Young Children, 1986; Oklahoma SDE, 1985; Phillips, 1987; Roberts, 1988; South Dakota SDE, 1986.
Teacher role	Plan and organize environment, facilitates.	Determines and initiates activities, provides direct instruction for specific skills.	Adams, 1988; Alaska SDE, 1985; Arkansas SDE, 1987; ASCD's Early Childhood Education Panel, 1988; Bartolini & Wasem, 1985; Corley, Ford, Tantham, & Taylor, 1982; Duncan, 1987; Educational Service Center, 1984; Georgia SDE, 1986; Hitz & Wright, 1988; Maine SDE, 1988; Minnesota SDE, 1986; Mississippi SDE, 1984; National Association for the Education of Young Children, 1986; Oklahoma SDE, 1985; Phillips, 1987; Roberts, 1988; South Dakota SDE, 1986.

Table 1--Continued

Component	Developmental	Academic	Source
Pupil role	Initiates, activities, exploration.	Sits and follows instructions.	Adams, 1988; ASCD's Early Childhood Education Panel, 1988; Educational Service Center, 1984; Hitz & Wright, 1988; Minnesota SDE, 1986; National Association for the Education of Young Children, 1986; Roberts, 1988; South Dakota SDE, 1986.
Activities	Work and play individually, small groups, child initiated groups, exploration, informal atmosphere. Manipulation of concrete objects in natural-play situations.	Same abstract concepts taught to all children. Emphasis on large group instruction. Much paper and pencil work.	Adams, 1988; ASCD's Early Childhood Education Panel, 1988; Duncan, 1987; Georgia SDE, 1986; Hitz & Wright, 1988; Maine SDE, 1988; Minnesota SDE, 1986; Morado, 1987; National Association for the Education of Young Children, 1986; Phillips, 1987; Roberts, 1988.
Materials	Manipulation of concrete objects. Paper and pencils used sparingly and for child's creative purposes.	Heavy use of paper and pencil to copy abstract symbols. Commercially prepared materials.	Adams, 1988; ASCD's Early Childhood Education Panel, 1988; Duncan, 1987; Georgia SDE, 1986; Hitz & Wright, 1988; Maine SDE, 1988; Minnesota SDE, 1986; National Association for the Education of Young Children, 1986; Phillips, 1987; Roberts, 1988.

Table 1--Continued

Component	Developmental	Academic	Source
Expectations	Individualized in areas of language, social/emotional, physical, and cognitive objectives.	Children are expected to learn some academic symbols/concepts. Sequential lessons.	Adams, 1988; ASCD's Early Childhood Education Panel, 1988; Hitz & Wright, 1988; Maine SDE, 1988; Minnesota SDE, 1986; National Association for the Education of Young Children, 1986; Phillips, 1987; Roberts, 1988.
Curriculum	Open-ended materials and experiences adjusted to individual students' developmental needs. Developmental objectives in areas of physical, emotional, social, and intellectual development.	Formal reading readiness, phonics, and/or reading instruction. Additional objectives in traditional subject areas (e.g., social studies, science, reading, math).	Adams, 1988; Alaska SDE, 1985; Arkansas SDE, 1987; ASCD's Early Childhood Education Panel, 1988; Bartolini & Wasem, 1985; Georgia SDE, 1986; Hitz & Wright, 1988; Maine SDE, 1988; Minnesota SDE, 1986; Mississippi SDE, 1984; National Association for the Education of Young Children, 1986; Oregon SDE, 1989; Phillips, 1987; Roberts, 1988; South Dakota SDE, 1986.

To summarize this section, no literature was found describing differences between developmental and regular kindergarten programs and curricula. The literature seemed to indicate various similarities in the following areas: (a) Activities were similar for regular and developmental kindergartens; (b) goals were similar for physical, socioemotional, cognitive, and language development; (c) the content for most programs was similar--the child's environment; and (d) most state departments of education promoted a developmental approach in kindergarten programming in terms of teacher role, pupil role, program, and expectations. A majority of the literature used the following components, or categories, which were also in evidence in most state manuals for kindergarten programming: purpose, teacher role, pupil role, activities, materials, expectations, and curriculum. In attempting to determine if there were categories to differentiate kindergarten programs, there seemed to be a large amount of literature differentiating academic from developmental programs.

Summary

From the review of literature some generalizations may be formed. From 1980 to 1990 there have been increasing trends in kindergarten programming for older entrance ages, enrollment, and academic focus in programming. Survey data from the 1980s indicated a reliance by a large percentage of school districts in Michigan to introduce developmental kindergartens as an intervention technique to meet the pressure of more academic programming at an early age.

Parallel to these trends was a general acceptance that it was possible to intervene in the environmental development of children for their benefit. The preponderance of studies of preschool as an intervention technique indicated that there were immediate and short-term gains in IQ and achievement and long-term gains in school competence, affect, and social investment. Developmental theory and philosophy supported the view that education at an early age should be developmentally appropriate and nonacademic.

There was a belief held by proponents of developmental programming that such programs as developmental kindergartens and transitional first grade programs as intervention techniques would result in greater school success and avoid future school and psychological problems. However, research on developmental and transitional programs reported mixed results in terms of achievement, affect, and school competence.

Various objections were noted regarding developmental kindergartens. These included contentions that they were similar to retentions and homogeneous grouping; research on retention and homogeneous grouping indicate that these practices are counterproductive. Additional objectives included inappropriate use of screening instruments and the argument that developmental kindergarten programming is counter to developmental theory.

In order to counter the argument that developmental kindergartens are not retentions or homogeneous grouping, a literature search was conducted to find descriptions of curricular and programming differences. Only one study was found which seemed to indicate similarities

instead of differences. A review of literature was then reviewed to determine if there were commonalities to be found in descriptions of kindergarten programs and curriculum. In addition, a body of literature was reviewed that seemed to indicate that there were two accepted broad categories to differentiate kindergarten programming: academic and developmental. These common components and categories for differentiation are the basis of the purpose of this study: to assess and describe the differences between developmental and regular kindergarten programs.

CHAPTER III

RESEARCH DESIGN AND PROCEDURES

The purpose of this study was to assess and describe programmatic and curricular differences between developmental and regular kindergartens. In this chapter the research design and procedures are outlined. The first section will outline the research questions to be answered, and the second section will describe the research design. The third section will describe the research population and sample. The fourth section will outline the instrumentation used in the study. The fifth and sixth sections will list the data collection and data processing and analysis procedures. The seventh section will list the methodological assumptions established. The eighth section will review the limitations inherent in this type of study. The ninth section will review the attempts to control for the limitations and the strengths of the study. The 10th section will summarize the chapter.

Research Questions

The review of literature indicated that there was a disagreement amongst professionals regarding the efficacy of developmental kindergartens as an intervention technique. To counter the argument that developmental kindergartens are merely retentions or homogeneous grouping and are, in fact, an intervention for the benefit of students different from the norm, a case needs to be made that the program is

different from regular kindergartens. However, the problem from the review of literature was that there is a lack of any description of curricular or programmatic differences. The research questions to be answered by this study, then, were twofold:

1. How do teachers describe the curricular and programmatic components of either their developmental or regular kindergarten programs?
2. Are there any differences or similarities in these descriptions?

Description of Research Design

This study was a descriptive research study using survey techniques to obtain data to describe programmatic and curricular components of developmental and regular kindergarten programs. This study was both descriptive and explanatory in nature (Ary, Jacobs, & Razavieh, 1985). From the research questions and purpose, this study attempted through the use of a descriptive survey to inquire into the current status and similarities or differences between responses of the two groups of kindergarten teachers. The survey instrument was a mailed questionnaire and anonymous in design.

The research protocol was submitted to the Western Michigan University Human Subjects Institutional Review Board (HSIRB) in January of 1993. Approval was obtained from the HSIRB on January 29, 1993. A copy of the approval memo is found in the Appendices (see Appendix A, memo from Dr. M. Michele Burnette, 1993).

The Research Population and Sample

The population for this study was all teachers of developmental and regular kindergarten programs in the United States. The accessible population ($n = 64$) and the sample for this study were all developmental and regular kindergarten teachers in St. Clair County, Michigan, a county considered to be part of the greater metropolitan Detroit area.

The reason for choosing teachers for the sample was to improve the validity of responses. Ary et al., (1985) made the assertion that more valid responses can be assumed from individuals who are interested in the topic or are more informed about it.

Instrumentation

The survey instrument was developed from the search of the literature regarding programmatic and curricular components of regular and developmental kindergarten programming. Since no literature was found that delineated developmental kindergarten programming or its differences from regular kindergarten, personal contacts were made with several authorities in the field: Drs. Brophy, Kamii, Katz, Weikart, and ASCD (author's personal communication, August, 1992). Their opinion was that no similar study or instrumentation had been developed. A review of literature was conducted to find similarities in components described from kindergarten programs in general (see Chapter II). Several common components were identified for use in the survey for this study including: purpose, teacher role, pupil role, activities, materials, expectations, and curriculum. The literature regarding these

components and a pilot study by a representative panel is the basis for its content validity. A copy of the survey used in this study is found in the Appendices (see Appendix B).

The survey was developed in four parts. The first part (Question 1, Teacher Information, see copy of survey in Appendix B) asked for descriptive information regarding demographic characteristics about the teacher filling out the survey. The questions were derived from a review of the Digest of Education Statistics, 1990 (National Center for Educational Statistics, 1991). The categories chosen for the survey were from Tables 61-63: "percent of teachers, by highest degree earned"; "percent of teachers, by years of full-time teaching experience"; "age": "sex" (National Center for Educational Statistics, 1991, pp. 75-77). The ranges used were the same as those listed in these categories. The purpose of including this section in this survey was to obtain data regarding the sample in order to make judgments regarding the representativeness of the survey data.

Other than demographic information, two additional questions were added to the first section of the survey regarding class size. The opinion of several of the reviewers of the initial drafts of the survey and a study by Peper (1991) was that class size and the possibility of having an aide which reduces the student-to-adult ratio was a factor differentiating developmental kindergartens from regular kindergartens.

The second part of this survey (Questions 2-8, see copy of survey in Appendix B) was designed to collect data on teachers' descriptions of their orientations towards various kindergarten components. The components were derived from a synthesis of literature regarding

kindergarten programming. The categories of orientations developed for content analysis, "academic" or "developmental," were also derived from a synthesis of literature regarding kindergarten programming. This synthesis was described in detail in Chapter II.

Teachers were asked to rate the emphasis that they placed on these orientations in their programs. Since teachers were asked to rate the emphasis they place on various program components and the opinion of survey reviewers of earlier drafts was that many of these concepts may overlap in practice, a semantic differential scale was developed. Seven points were used based on the experience of researchers that this was an optimal number (Isaac & Michael, 1987). The words chosen for this scale were "strong" and "weak." They were chosen from a list of words from Osgood's (cited in Isaac & Michael, 1987) Factor Analyzed List. Strong and weak were chosen as being most appropriate for this study and had the second highest correlation coefficient in Osgood's study for "potency" ($r = .40$) and "evaluative" ($r = .30$) as words for units of analysis. This choice was made for several reasons. First, from the Osgood study, they seemed to provide the best potential for discrimination in responses. Second, the pilot study indicated that these words would fit the intent of the survey, decrease response bias, and remove a forced-choice alternative that might cause a negative reaction on the part of respondents.

The third part of the survey (Questions 9-26, see copy of survey in Appendix B) asked teachers to estimate the emphasis placed on various curriculum components and types of general activities in their program. Once again, questions regarding curriculum and general activities

were derived from a synthesis of literature on kindergarten programs. This review was discussed in detail in Chapter II. This section of the survey used the same 7-point semantic differential scale and the same word units of analysis (strong or weak emphasis) as in the second part of the survey.

The fourth part of the survey (Questions 27-55, see copy of survey in Appendix B) asked teachers to indicate the specific type of activities used in their classroom during a typical week and the amount of time it is used in a week. The list of "typical" or "traditional" kindergarten activities was developed from two sources. The first source was Morado's (1987) survey of kindergarten teachers in Michigan. The second source was the National Association for the Education of Young Children's (1986) policy statement on appropriate and inappropriate practices for 4- and 5-year-olds.

There were two problems with Morado's (1987) original survey. First, she used a 3-point scale of importance: very important, important, and not very important. This would only provide ordinal data and would be more difficult for comparison since it did not allow for more discrimination. The second problem was in the use of "importance" as a unit of analysis. It was the opinion of the researcher that this would tend to elicit more of a response bias because of the value implied by the term. Therefore, a scale asking for numbers of times the activity was used in a week was developed to provide ratio data as a better means to discriminate between responses of regular and developmental kindergarten teachers.

Before implementation, a review and pilot study was conducted in

developing the survey. Two developmental kindergarten teachers; one regular kindergarten teacher; one director of early education programming; the president of the Blue Water Association for the Education of Young Children; an early childhood consultant from the Michigan Department of Education; three recognized national experts on early childhood education, Dr. Lilian Katz, Dr. Constance Kamii, and Dr. David Elkind (author's personal communications, August-October, 1992) were asked to review the initial drafts of the survey. In addition, the survey was reviewed by the doctoral committee of the researcher.

After revisions were made from input of this panel of reviewers, a pilot study was conducted with a random sample (10% of accessible population) in St. Clair County. Teachers chosen for this pilot study were randomly chosen from a list of all developmental and regular kindergarten teachers in St. Clair County. These selected teachers were then asked to fill out the survey and return it to the author. This was followed by a personal interview with each pilot study participant to assess the instrument's validity and clarity.

Data Collection

Once the pilot study was completed and the survey to be used refined, the research study was implemented in five steps. First, lists of faculty members were obtained from each school district in St. Clair County, Michigan, to determine the accessible population and sample. Second, surveys were developed and printed to be anonymous. Third, the survey was distributed by mail with self-addressed, stamped, return envelopes. A copy of the cover letter and survey are found in the

Appendices (see Appendix B). An inducement of \$1 was included in the survey packet. Follow-up surveys were anticipated, but not needed due to the return. Fourth, survey results were tabulated. Fifth, survey results were analyzed.

Data Processing and Analysis

Data collected from the survey were recorded by code, question number, sample group, and response. In order to analyze the response to the survey, responses were analyzed for representativeness, sampling distribution, and reliability. In order to answer the research questions, responses were analyzed for their descriptions of programmatic and curricular components and then compared to responses between regular and developmental kindergarten teacher responses to determine similarities and differences of responses between groups. Analysis of data was different depending on the type of data obtained. Therefore, the remainder of this section will review overall survey data analyses and then analyses applied to each section of the survey.

The first level of analysis applied to the entire survey was an analysis of homogeneity of variance. This analysis was chosen to determine the sample distribution of responses and to compare this distribution between regular and developmental kindergarten groups.

The second level of analysis was a test to determine the reliability of responses. A Cronbach coefficient alpha correlation coefficient was chosen as the means of analysis for responses for the second, third, and fourth sections of the survey to determine internal consistency of responses in the survey.

The third level of analysis was to determine the representativeness of the sample response. In the first part of the survey (Question 1, see copy of the survey in Appendix B), data could be obtained that was nominal for each individual response on demographic characteristics. These responses for various items could be noted by frequency by the groups of regular and developmental kindergarten teachers and the total sample to develop proportions, or percentages, of the demographic characteristic for the population, the sample, and sample groups of regular and developmental kindergarten teachers. Since numbers of, for example, males and females of the sample or populations could be converted to percentages with a true zero, the data used for analysis were ratio data. The percentages obtained from the first part of the survey could then be compared to proportions of the population in each category to determine if there were any differences in characteristics. By comparing sample characteristics, an analysis could be made to determine representativeness of sample: a criteria to judge the validity of survey data, sampling error, and external validity (Kerlinger, 1986).

The fourth level of analysis dealt with the question about class size contained within Part 1. The data obtained were ratio data for numbers of students and aides. An average student-to-adult ratio could then be determined for each respondent. Means and standard deviations could be developed to describe the mean adult-to-student ratio for each group.

The fifth level of analysis was a description of responses for the various sections of the survey regarding curricular and programmatic components. The second and third sections of the survey (Questions

2-26, see copy of survey in Appendix B) asked regular and developmental kindergarten teachers to rate the emphasis placed on orientations towards program components, curricular components, and general activities. Since a 7-point semantic differential scale was used, the assumption was made that the data obtained were interval data. To describe the responses of these two groups within the sample, means, standard deviations, and variances could be developed for each group for each question. Since these two sections contained several components, means obtained for each group could be represented as a profile. This profile could then be used to represent the mean responses for each group.

The fourth section of the survey (Questions 27-54) asked respondents to estimate the number of times per week a specific activity was used in their program. Since a true zero could be assumed, this section yielded ratio data. To describe the responses for specific activities, means, standard deviations, and variances could be developed for each question and each group of teachers within the sample. Since this section asks for the number of times several activities are used, mean responses for each group could be used to develop a profile of activities for each group.

Methodological Assumptions

In order to analyze the responses for this survey and to set a priori criteria to make inferences about the degree of differences in responses, several statistical assumptions are made. First, the assumption is made that the two sample groups are independent. While a teacher may teach

both a developmental and regular kindergarten section, he or she was given only one survey and asked to respond for whichever class he or she chose. The test for homogeneity of variance is an additional means to analyze this assumption. Second, the sample is representative since it includes all teachers. The test comparing proportion of the sample to the population is an additional method to determine external, or population, validity by an outside criterion (Ary et al., 1985; Kerlinger, 1986). Third, the criteria to draw valid generalizations from this survey was a return rate greater than 80% (Kerlinger, 1986). Fourth, the assumption is made that the instrument, based upon literature and a pilot study, has content validity. Fifth, the assumption is made that the scales used in Questions 2-54 will yield interval or ratio data.

Limitations

Various limitations are inherent in survey or descriptive research. Limitations include: representativeness of sample, response bias and response sets, over-rater or under-rater bias, low response rate, no assurance the questions were understood, and no assurance addressee actually was the one who answered (Isaac & Michael, 1987). What follows is a discussion of these limitations and attempts to control for them.

Representativeness of sample is addressed by including all teachers of developmental and regular kindergarten programs in the county. While there still may be questions regarding the external validity of the response, a comparison of demographic data to the universe of all teachers in the United States is helpful to draw conclusions in regards to

its representativeness.

The limitation of response bias and response sets are addressed in three ways. First, the assumption is made that the demographic section of the survey may be considered objective. In addition, the fact that the survey is anonymous lessens the possibility of a response bias. The section on orientation (Questions 2-8) allows for an overlap of orientation providing the respondent with greater flexibility and limiting response bias. Second, a scale was developed for Questions 9-54 of the survey using time and an interpretation of emphasis as an attempt to arrive at a more objective measure without applying any value statements (Isaac & Michael, 1987). Third, tests of internal reliability provide an analysis of response sets.

Over-rater and under-rater bias is a common error associated with these types of scales (Isaac & Michael, 1987). The first part asks for demographic data and is objective in nature. The second and third parts are most vulnerable to this type of error. The assumption is made that the use of multiple analysis techniques and the comparison of two groups will either control for this type of error or that the error will be equally distributed between the groups. In addition, the development of a profile graphically shows whether this type of bias is consistent or whether there is true variance amongst the items. The fourth part of the survey asks for times an activity is used within a typical week. Since this response set is more objective, it is assumed that this will also hinder this type of bias.

A pilot study was conducted of a random sample (10%, $n = 6$) of the study sample to determine whether there is a likelihood that

respondents will understand the questions. In addition, a panel of experts reviewed the survey for its content validity and clarity. Interviews of respondents in the pilot study provides further input to determine clarity and response set bias.

While with all mailed questionnaires there is always the possibility that the addressee will not answer the questions, the likelihood that this will occur in this case is decreased by two factors. First, a request from a fellow educator is more likely to be answered by the professionals themselves. Second, a money inducement was included.

A common limitation to all mailed surveys is a low response rate (Kerlinger, 1986). This limitation is addressed in four ways. First, money was included in the mailed survey as an incentive. Second, a self-addressed, stamped envelope was included to facilitate the return. Third, surveys were anonymous to eliminate any fears of responding. Fourth, an a priori assumption was made in this study that valid generalizations would not be drawn unless the return rate is greater than 80%.

Strengths

There are several strengths to be found in this study. The first is that no evidence has been found to show that this type of study has been done in the past; and therefore, there is a need to conduct a descriptive study to determine differences in programming. Second, the survey itself is content valid and contains means to control limitations and check for internal consistency. Third, the fact that all teachers are surveyed increases the likelihood that responses are valid and representative. Fourth, the research design and methodological assumptions provide for various controls on the limitations of this type of study:

return rate, reliability, internal validity, and validity of instrumentation. Fifth, the study goes to the heart of the issue surrounding developmental kindergartens: Is there a difference in treatment that warrants the investment? Sixth, data were obtained about the demographic characteristics of the population to serve as an outside criteria to check the external validity of the response. Seventh, the survey allows for various means of data analysis including the development of a profile of developmental and regular kindergarten orientation, components, and activities.

Summary

This chapter has outlined the research design and procedures for this study. Since the research problem was a lack of literature describing developmental and regular kindergarten programmatic or curriculum components, a survey was developed and the derivation of the different parts of the survey was described. The research design was a descriptive study based upon responses from the survey. The population and sample for this study was reported. A description was presented outlining the implementation of the survey.

Data collection, processing, and analysis were described to (a) control for representativeness, reliability, and validity of the response; (b) describe the data to be obtained in order to describe programmatic and curricular programs for the two groups; and (c) describe the means to analyze for differences or similarities in responses concerning programmatic and curricular components. From the design and data analyses chosen, various methodological assumptions, limitations, and strengths for this study were outlined.

CHAPTER IV

FINDINGS

The purpose of this study was to assess and describe programmatic and curricular differences between developmental and regular kindergartens. The research questions were twofold: (1) How do teachers describe the curricular and programmatic components of either their developmental or regular kindergarten programs, and (2) are there any differences or similarities in these descriptions? In this chapter the findings of the descriptive study are presented. This chapter has eight sections.

The material in this chapter is presented in chronological order. That is, the implementation of the survey process is presented in the order in which it occurred. Then data are presented on the demographic characteristics of the respondents and compared to the national population. Next, the response is analyzed for homogeneity of response and reliability. Then data from the survey are grouped by survey section and presented in the order in which the questions were presented. The response for each section is reported and discussed.

Pilot Study

The early drafts of the survey instrument were presented to kindergarten teachers in one school district in St. Clair County, to one early childhood director, to the researcher's doctoral committee, and to the

president of the Blue Water Association for the Education of Young Children. The feedback from these local experts, practitioners, and professors were used to create five drafts of the original survey instrument. The feedback consisted primarily of suggestions to alter the scale for responses to avoid response bias and allow for more flexibility on the part of the respondents. The scale was changed on Questions 2-8 from a forced choice scale to a 7-point semantic differential scale. The scale on Questions 9-26 was changed from an estimate of percentage of time to a 7-point semantic differential scale. The scale for Items 27-54 remained the same as in the first draft: an estimate of times during a week the activity was used from 0 to 5. There were several suggestions and revisions made of the directions for clarification. No question was raised in the pilot study by any of these individuals regarding the content validity of the questions.

The survey was mailed to national experts on early childhood education asking for their input on the survey. No response was received by any of the three national experts (Drs. Kamii, Katz, and Elkind).

Survey Implementation and Return

After approval by the doctoral committee and Western Michigan University Human Subjects Institutional Review Board (see memo from Burnette, January 29, 1993, in Appendix A), lists of kindergarten teachers in St. Clair County, Michigan, were obtained from each school district. There were 64 regular and developmental kindergarten teachers identified. Fifty-three surveys, or 83%, were returned. In the cover

letter to teachers, a definition of regular and developmental kindergarten programs was provided. Of the returns, 25 teachers responded that they taught a developmental kindergarten program, and 28 teachers responded that they taught a regular kindergarten program. A copy of the survey and cover letter are included in Appendix B.

After the survey was administered and surveys returned, a follow-up telephone interview was conducted with a random sample ($N = 6$, or 10%) of the target population to seek feedback from respondents in regards to the perceived validity, reliability, and clarity of the survey. All of the randomly chosen subjects when interviewed reported no problems with the directions, the scale used for measurement, or the content of the survey (personal communication of the author, April, 1993).

Demographic Characteristics of Respondents

Demographic Response and Comparison to Population

The first section of the survey asked respondents to answer questions regarding demographic characteristics of the respondent. This section contained questions regarding gender, years of teaching, certificate status, degree status, and age. Response totals and proportions (percentage of sample group) for developmental and regular kindergarten teachers are presented in Table 2 by demographic characteristic.

No certification statistics were reported nationally for teachers. Kindergarten teachers in Michigan may teach kindergarten with either an elementary teaching certificate (El.Ed.) or an elementary teaching certificate with an early education endorsement (El.Ed. + ZA). Since a

Table 2
Demographic Response for Sample Groups

Characteristic	Regular kindergarten		Developmental kindergarten	
	<u>n</u>	%	<u>n</u>	%
Gender				
Male	0	0.0	0	0.0
Female	28	100.0	25	100.0
Years of teaching				
1-3	2	7.1	1	4.0
3-9	4	10.0	5	20.0
10-20	10	36.0	11	44.0
> 20	12	42.9	8	32.0
Teaching endorsement				
El.Ed. + ZA	7	25.0	10	40.0
El.Ed.	21	75.0	15	60.0
Degree				
BA	10	35.7	13	52.0
MA	18	64.3	11	44.0
EDS	0	0.0	1	4.0
Ph.D. or Ed.D.	0	0.0	0	0.0
Age				
< 30	3	10.7	2	8.0
30-39	4	14.3	7	28.0
40-49	12	42.9	11	44.0
50 +	9	32.1	5	20.0

ZA endorsement is a teaching certificate specialization in early childhood education in the state of Michigan and some may consider this a "quality" issue in terms of teacher preparation, a comparison was made of the proportion of regular and developmental kindergarten teachers that hold either an elementary certificate or an elementary certificate with a ZA endorsement (see Table 2).

An examination of Table 2 will note that both groups of teachers were female. The majority of teachers of both groups were experienced (above 10 years of experience) and older (above 40 years of age). A higher percentage of developmental kindergarten teachers had an elementary education certificate with an early childhood endorsement (Ed. Ed. + ZA). However, a larger percentage of regular kindergarten teachers held master's degrees.

As outlined in Chapter III concerning the design of the study, a comparison was made between the sample and the population in order to determine the representativeness of the sample. Table 3 compares the demographic proportions for the total sample to national proportions for total teachers (see Table 3). Proportions for the population of teachers in the United States were derived from the Digest of Education Statistics (U.S. Department of Education, 1990). Statistics and percentages are from the 1987-88 school year, the latest available.

An examination of Table 3 will note that in comparison to the national population of all teachers (separate statistics for kindergarten teachers were not available), large differences were reported for the total sample for gender, years of teaching greater than 20, and proportion of teachers holding master's degrees. The national population of teachers

Table 3
Comparison of Proportions of Sample Demographic Responses
to Population Demographic Characteristics

Demographic characteristics	National teachers	Kindergarten teachers sample
Gender		
Male	29.0	0.0
Female	70.0	100.0
Years of teaching		
1-3	8.0	5.7
3-9	26.0	17.0
10-20	44.5	39.6
> 20	21.4	37.7
Degree held		
B.A.	52.2	43.4
M.A.	40.0	54.7
Ed.S.	6.3	1.9
Ed.D. or Ph.D.	0.9	0.0

had a greater proportion of teachers between the ages of 30 and 39. In other demographic areas, little differences were reported.

Class Size and Aides

The last question in Section 1 on Teacher Information asked respondents whether they were developmental or regular kindergarten

teachers, their class size, and whether they had an aide in their classroom. Twenty-five teachers responded that they taught a developmental kindergarten program, and 28 responded that they taught a regular kindergarten program. In this case the sample school districts differed from the literature in that all sample school districts had a developmental kindergarten program. In surveys by Riley (1984) and the Michigan State Board of Education (1984), the range of school districts reporting developmental kindergarten programs was from 33% to 61%.

In terms of aides, five, or 25%, of all developmental kindergarten respondents reported that they had an aide in their classroom. Two, or 7%, of all regular kindergarten respondents reported that they had an aide in their classroom. Using this report of aides and the responses on class size for each teacher, an adult-to-student class size average was determined. The class size average for regular kindergarten respondents was 21.2 and the class size average for developmental kindergarten respondents was 17.7. Frequency of program and class size responses are summarized in Table 4.

Using the mean class size from these responses, the difference of adult-to-student ratio between regular kindergarten respondents and developmental kindergarten respondents for their programs was 3.5 students. There was a large difference (25% vs. 7%) in the proportion of developmental teachers reporting the availability of aides as compared to regular kindergarten teachers.

Table 4
Frequency of Program, Class Size, and Aide Responses

Class size	DK		RK		Aide			
					Yes		No	
	<i>f</i>	%	<i>f</i>	%	DK <i>f</i>	RK <i>f</i>	DK <i>f</i>	RK <i>f</i>
26-30	3	12.0	5	17.9	5	2	20	26
21-25	4	16.0	12	42.9				
16-20	8	32.0	8	28.6				
11-15	6	24.0	2	7.1				
6-10	4	16.0	1	3.6				
1-5	0	0.0	0	0.0				
Totals	25	100.0	28	100.0				

Note. DK = developmental kindergarten. RK = regular kindergarten.

Variance and Reliability of Response

To determine if there is a wide variation in responses for various questions, a test for homogeneity of variance was made on responses for Questions 2-54 between regular and developmental kindergarten groups. A two-sample test for homogeneity of variance was conducted for response data (Formula 13.8, Hinkle, Wiersma, & Jurs, 1988). The test statistics (E ratio and critical value for E , F_{cv}) are contained in Table 11 in Appendix E. An examination of the table will note that Questions

2b, 4a, 5a, 5b, 6a, 7a, 8a, 10, 24, 35, 36, and 42 had significant differences in variance (see Table 11). Out of the 60 total questions, only 12, or 20%, had significantly different variances. Thus, a large majority of the question responses (80%) had no significant difference in variance.

Since the implementation of the survey provided only one form, a test of homogeneity of response was used to determine the reliability of the survey. A Cronbach coefficient alpha formula was applied. The coefficient alpha for responses received was $+.7722$. Using Hinkle et al. (1988) rule of thumb for interpreting the size of a correlation coefficient, this correlation would be interpreted as a "high" correlation of reliability. The summary statistics for the reliability coefficient are reported in Table 12 in Appendix F.

Philosophical Orientation

The survey, for discussion purposes, can be divided into various sections. The first section asked teachers to respond to various demographic questions, and the responses are discussed above. The second section, Questions 2a through 8b, asked for responses regarding philosophical orientation (i.e., academic vs. developmental). The scale for these responses was a 7-point scale ranging from weak emphasis (1) to a strong emphasis (7). Both an academic and developmental orientation statement was included in each question. For example, under Question 2, "Purpose," respondents were asked for the emphasis they placed in their program on "achievement of specific learning goals" (2a) and "social, emotional, intellectual, and physical emphasis" (2b).

The placement of the academic and developmental statements was randomly assigned. Thus academic orientation questions were 2a, 3b, 4a, 5a, 6a, 7b, and 8b. Developmental orientation questions were 2b, 3a, 4b, 5b, 6b, 7a, and 8b. Table 5 shows the means, standard deviations, and variances for each question in this section for each sample group.

Table 5
Orientation Responses by Sample Group

Orientation questions	Regular kindergarten			Developmental kindergarten		
	Mean	<u>SD</u>	Variance	Mean	<u>SD</u>	Variance
Purpose						
2a	5.36	1.11	1.23	4.72	1.84	1.40
2b	6.21	1.05	1.10	6.60	0.69	0.48
Teacher role						
3a	6.04	0.94	0.89	6.33	1.03	1.06
3b	5.00	1.60	2.60	4.10	1.50	2.10
Pupil role						
4a	3.48	1.64	2.69	2.88	0.99	0.99
4B	5.07	1.25	1.57	6.00	0.98	0.96
Activities						
5a	2.86	1.55	2.41	1.76	0.91	0.82
5b	5.71	1.22	1.49	6.36	0.74	0.54

Table 5--Continued

Orientation questions	Regular kindergarten			Developmental kindergarten		
	Mean	<u>SD</u>	Variance	Mean	<u>SD</u>	Variance
Materials						
6a	2.36	1.34	1.80	1.72	0.92	0.84
6b	5.86	1.30	1.69	6.16	1.08	1.17
Expectations for students						
7a	5.00	1.60	2.60	5.80	1.10	1.10
7b	4.71	1.36	1.85	4.12	1.24	1.55
Curriculum						
8a	5.00	1.56	2.43	5.92	1.06	1.11
8b	3.79	1.82	3.31	2.92	1.52	2.31

To read the findings and to describe regular and developmental programs based upon the mean responses for each group, 4 will be used as the neutral point. Mean responses for each group will be described as a greater or lesser emphasis as to whether the mean response was greater than 4 or less than 4.

In regards to purpose, both the developmental and regular groups appear to put a greater emphasis on achievement of specific learning goals while also placing an even greater emphasis on social, emotional, intellectual, and physical development. Both groups responded that a greater emphasis should be placed on a teacher role where the teacher

plans and organizes the environment, facilitating learning. At the same time both groups responded that the teacher role should have a greater emphasis on determining and initiating activities and providing direct instruction. Both groups responded that a lesser emphasis should be placed on the pupil role to sit and follow instruction and a greater emphasis on a pupil role where the pupil initiates activities and exploration. Both groups responded that a lesser emphasis should be placed on activities that have the same abstract concepts taught to all children and a greater emphasis be placed on activities that had individualized work and play, small group activities, and pupil initiated activities. Both groups responded that less of an emphasis should be placed on the use of paper and pencil materials and a greater emphasis should be placed on the materials that allowed for manipulation of concrete objects. Both groups responded with a stronger emphasis that expectations should be individualized in most areas while at the same time responding with a somewhat stronger emphasis on the expectation to learn some academic concepts. Responses on curriculum indicated that both groups placed a stronger emphasis on open-ended materials and experiences individually adjusted and less of an emphasis on formal reading readiness.

In terms of similarities and differences of responses, the second research question, several interpretations can be derived from an examination of Table 5. In most cases, response means were in the same direction. The average difference in mean responses was 0.69. In all cases except 6b, regarding use of materials that allowed for manipulation of concrete objects, developmental kindergarten teachers had a stronger orientation emphasis for developmental issues and a weaker

emphasis for academic issues. Only one question had a mean response difference of 1.0 or greater. That was Question 5a (academic) where developmental kindergarten teachers responded with a lesser or weaker emphasis on activities where the same abstract concepts would be taught to all children. In general, all groups had mean responses that were more developmental in orientation and less academic in orientation.

Kamii (1971) noted that all early childhood curricula had program components in the areas of social-emotional, perceptual-motor, cognitive, and language development. The difference in the program, she contended, comes in the emphasis placed in the curriculum objectives. While this portion of the survey indicates some differences in philosophical orientation, the program components and the time spent on activities will be examined next to determine how this orientation is implemented.

Program Components

The third section of the survey, Questions 9-26, asked developmental and regular kindergarten teachers to respond to the emphasis in terms of time placed on various curricular, activity, and materials components (e.g., gross motor activities, mathematics concepts, science concepts, large group activities, play, paper and pencil materials, manipulatives, etc.). Once again, a 7-point scale was used ranging from a weak emphasis (1) to a strong emphasis (7). Table 6 reports the means, standard deviations, and variances for the responses for each group.

To read this response and to describe the programs in the first research question, 4 will be used again as the neutral point in the 7-point

Table 6
Curriculum, Activity, and Materials Components
Responses by Sample Group

Program component questions	Regular kindergarten			Developmental kindergarten		
	Mean	<u>SD</u>	Variance	Mean	<u>SD</u>	Variance
Curriculum components						
9	5.11	1.21	1.45	5.36	1.05	1.11
10	5.18	1.44	2.08	6.20	0.85	0.72
11	5.00	1.17	1.36	5.00	1.13	1.28
12	5.70	1.20	1.30	5.80	1.30	1.60
13	5.37	0.99	0.97	5.32	0.88	0.78
14	4.39	1.50	2.24	4.64	1.20	1.43
15	4.07	1.22	1.50	4.04	1.00	1.00
16	4.14	1.33	1.77	4.56	1.13	1.29
17	5.15	1.30	1.68	5.32	0.97	0.94
Activity components						
18	4.54	1.50	2.25	5.40	1.13	1.28
19	4.00	1.30	1.70	3.40	1.10	1.20
20	4.93	1.41	1.99	5.12	1.18	1.39
21	4.30	1.41	1.99	4.68	1.22	1.50

Table 6--Continued

Program component questions	Regular kindergarten			Developmental kindergarten		
	Mean	<u>SD</u>	Variance	Mean	<u>SD</u>	Variance
Materials components						
22	2.56	1.20	1.43	1.96	1.00	1.00
23	5.00	1.22	1.48	4.96	1.25	1.56
24	5.44	1.10	1.21	6.16	0.67	0.45
25	3.54	1.80	3.25	3.68	1.87	3.50
26	5.10	1.30	1.70	5.40	1.10	1.10

scale. Therefore, anything greater than 4 will be interpreted as a stronger emphasis, and anything less than 4 will be interpreted as a weaker emphasis.

Regarding curriculum components, both groups placed a stronger emphasis on fine or gross motor activities. Both groups placed a stronger emphasis on social/emotional activities with the developmental kindergarten group responding with almost a 1-point greater emphasis. Both groups responded with a stronger emphasis on time spent on intellectual/cognitive, communication/language arts, math concepts and skills, social studies/social living, health/safety, and fine arts/music/aesthetic-creative activities. Both groups had almost a neutral emphasis on time spent on science concepts and skills.

Regarding activity components, both groups responded with a stronger mean emphasis on individualized, child initiated activities with the developmental kindergarten group indicating almost a 1-point stronger emphasis on these types of activities. The response was somewhat split on large group, teacher directed activities. The regular kindergarten group's response was somewhat neutral whereas the developmental kindergarten group's response was of a somewhat weaker emphasis. Both groups responded with a stronger emphasis on time spent on play and a somewhat stronger emphasis on small group, teacher directed activities.

Regarding the types of materials used in their programs, both groups had mean responses indicating a stronger emphasis on teacher prepared materials and activities in centers, concrete manipulatives, and art and music materials. Both groups responded with a weaker emphasis on paper and pencil, commercially prepared materials, and books. In Question 22, student use of paper and pencil/commercially prepared materials, developmental kindergarten teachers responded with a 0.6 weaker emphasis; and in Question 24, use of concrete manipulatives, they responded with a 0.7 stronger emphasis.

In regards to the second research question as to whether survey responses indicated any similarities or differences, responses for both groups indicated similarities. There was a stronger emphasis in most areas except for use of books and paper and pencil materials. In one area, large group activities, the response was fairly neutral. Mean responses were in the same direction. In terms of emphasis, the mean difference for all responses in this section was 0.3.

Activities

The fourth and final section of the survey, Questions 27 through 54, asked teachers to respond by estimating the number of times per week spent on various specific activities ranging from never (0) to five times per week (5) (e.g., games, painting, counting, sorting objects, printing letters, etc.). Table 7 reports the means, standard deviations, and variances for each question for this section for regular and developmental kindergarten groups.

Table 7
Specific Activities Responses by Sample Group

Specific activities questions	Regular kindergarten			Developmental kindergarten		
	Mean	<u>SD</u>	Variance	Mean	<u>SD</u>	Variance
27	2.74	1.46	2.12	2.87	1.90	3.59
28	4.52	0.63	0.40	4.24	1.07	1.14
29	3.46	1.78	3.17	2.96	2.05	4.20
30	4.93	0.38	0.14	4.80	0.98	0.96
31	4.33	0.98	0.96	4.48	0.85	0.73
32	3.07	1.44	2.07	4.00	1.17	1.36
33	3.00	2.00	3.80	3.50	1.60	2.70
34	0.78	1.57	2.47	1.25	1.71	2.94
35	3.89	1.37	1.87	4.48	0.76	0.57
36	0.74	1.10	1.22	1.12	0.71	0.51
37	2.46	1.55	2.40	2.56	1.55	2.41

Table 7--Continued

Specific activities questions	Regular kindergarten			Developmental kindergarten		
	Mean	<u>SD</u>	Variance	Mean	<u>SD</u>	Variance
38	3.23	1.69	2.87	4.04	1.22	1.48
39	4.54	0.80	0.63	4.64	0.74	0.55
40	3.70	1.40	2.00	3.40	1.50	2.20
41	4.31	0.99	0.98	4.48	0.90	0.81
42	4.34	1.21	1.46	4.56	0.80	0.65
43	3.12	1.28	1.64	3.44	1.53	2.33
44	3.89	1.01	1.03	4.04	0.96	0.92
45	4.84	0.46	0.21	4.68	0.79	0.62
46	4.08	1.00	0.99	3.88	1.14	1.31
47	2.20	1.50	2.20	2.00	1.40	2.00
48	1.88	1.45	2.10	1.56	1.77	3.13
49	3.00	1.79	3.21	3.08	1.77	3.11
50	3.11	1.23	1.51	2.96	1.25	1.56
51	1.71	1.91	1.42	2.12	1.28	1.63
52	3.18	1.89	3.58	2.64	2.24	5.03
53	3.68	1.49	2.22	3.40	1.58	2.48
54	3.30	1.80	3.30	2.30	2.10	4.40

To read this response and give a description of the activities in this program, activity mean responses are grouped by the number of times used per week within 0.5 of a whole number. Both regular and

developmental kindergarten teachers responded that they used the following activities about once a week: wood working and cooking activities. Both groups estimated the following activities to be used about two times per week: science center activities, paper and pencil activities, printing simple words-lower case, and measuring activities. Both groups estimated that they used the following activities about three times a week: matching sounds to letters, printing first and last names, sand/water play, large muscle activities, identifying upper case letters, playing number games, and computer activities. The following activities were estimated to be used four times per week by both groups: house/role playing, block building, singing and rhythm activities, painting and drawing, fine motor activities, and comparing and sorting objects and numbers. The following activities were reported by both groups to be used almost continually, or five times a week: teacher reading to children, table toys, and counting.

To answer the second research question, the mean responses for both groups indicates that in a majority of cases the same type of activities are used the same number of days. Differences between regular kindergarten (RK) and developmental kindergarten (DK) responses in estimates when rounded off to the nearest number of times used per week included teacher directed instruction with small group (RK = 3.07, DK = 4.0), listening center activities (RK = 3.23, DK = 4.04), simple games (RK = 3.72, DK = 3.36), children looking at reading books (RK = 4.34, DK = 4.56), dramatic play (RK = 3.68, DK = 3.4), and reading instruction (RK = 3.27, DK = 2.29). Average differences between mean responses was 0.35.

Summary

Data were presented showing the responses on all questions of the survey. In order to assess the validity and reliability of the survey results, various analyses were conducted. The return rate exceeded the a priori criteria of 80%. Both the pilot study and follow-up interview reinforced the position of content validity for the survey. A Cronbach coefficient alpha was applied to the survey responses and indicated a high ($>.7$) rate of reliability. An analysis of homogeneity of variance for responses to questions indicated that 20% of the responses had significantly different variances, whereas there were no significant differences in homogeneity of variance for 80% of responses to questions.

Additional demographic data were reported to describe the sample and compare it to the population. Demographic characteristic responses noted that the majority of the sample was experienced and older. Differences between regular and developmental kindergarten teachers were noted in the area of certification and the numbers of regular kindergarten teachers that held master's degrees. A comparison of the total sample to the national population indicated differences in the sample for characteristics of gender, years of teaching above 20 years, teachers with master's degrees, and teachers between the ages of 30 and 39. An adult-to-student ratio was developed for the responses and the lower ratio for developmental kindergarten programs was noted.

To answer the first research question regarding a description of the two programs, mean responses were reported for each group. A narrative description was derived from these mean responses to describe

the orientation, curriculum, materials, and activities for each program.

In order to answer the second research question, the data and descriptions were analyzed for similarities and differences. Responses on the second section of the survey noted a developmental emphasis for both regular and developmental programs. While some degree of difference in emphasis was noted, mean responses of regular and developmental kindergarten teachers indicated a similar emphasis for developmental and academic orientation questions. The responses for the third section of the survey indicated a similar emphasis in curriculum, activity, and material components. Differences in degree of emphasis was noted between the two groups in 3 out of 18 question responses. Responses on the fourth section of the survey indicated similar profiles in terms of amount of time specific activities were used. Differences in rounded times an activity was used was noted in 6 out of 28 cases.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to assess and describe programmatic and curricular differences between developmental and regular kindergartens. The research questions were twofold: (1) How do teachers describe the curricular and programmatic components of either their developmental or regular kindergarten programs, and (2) are there any differences or similarities in these descriptions? This chapter has four sections: (1) a summary of the findings are presented, (2) conclusions and a discussion are presented, (3) recommendations for further research are presented, and (4) a summary of the study is presented.

Summary of Findings

The first research question was to determine how the teachers describe regular and developmental kindergarten programs. The responses on the survey paint a picture of a "typical" regular and developmental kindergarten program. In order to ground the following description to the data, mean responses will be provided for the regular kindergarten group (RK) and developmental kindergarten group (DK). The reader is reminded that for the first two sections of the survey a 7-point scale was used. Therefore, 4 is considered the neutral point. A mean response greater than 4 is interpreted as a stronger emphasis, and a response less than 4 is interpreted as a weaker emphasis. For

example, the survey response indicated that both regular kindergarten teachers (RK = 3.48) and developmental kindergarten teachers (DK = 2.88) placed a weaker emphasis on a pupil role where the pupil sits and follows instructions.

If one were to go to observe either a developmental or regular kindergarten program, he or she would be greeted by a female teacher (RK = 100%, DK = 100%) who most likely would be experienced (>10 years RK = 78.9%, DK = 78.0%). If it was a regular kindergarten class, this teacher would probably hold a master's degree (64.3% compared to 44%). If it was a developmental kindergarten program, this teacher would be more likely to hold an elementary certificate with an early childhood endorsement than her regular kindergarten colleague (40% compared to 25%). In a majority of cases, either the regular or developmental kindergarten teacher would be over 40 years of age (RK = 75%, DK = 64%). Compared to the rest of the teachers nationwide, these teachers are entirely female, have greater years of experience, and have a higher percentage that hold master's degrees.

When one walked into a regular or developmental kindergarten class, he or she would notice that there is a greater probability that the developmental class has an aide (RK = 7% compared to DK = 25%) and that the class size is smaller for the developmental kindergarten classroom (DK = 17.7, RK = 21.2). The children would look similar since they are all of similar age--5 by December 1 of that year.

If one were to question the teachers in the teachers' lounge about their program, the survey responses indicate several characteristics about the basic philosophical orientations that the teachers would

express. Both the developmental and regular kindergarten teachers would state that their primary purpose was the social, emotional, intellectual, and physical development of the child (RK = 6.2, DK = 6.6). However, they would also indicate that their students should achieve specific learning goals (RK = 5.35, DK = 4.72). They both would state that their primary role is to facilitate learning (RK = 6.03, DK = 6.33), but at times they do determine, initiate, and provide direct instruction (RK = 5.0, DK = 4.13). When asked about the pupil role, they would indicate that the primary role of the pupil is to initiate activities and exploration (RK = 5.07, DK = 6.0). However, consistent with their goals of achievement and the times they do provide direct instruction, there is a weaker emphasis on pupils sitting and following instruction (RK = 3.48, DK = 2.88). They would explain that this is consistent with their expectations for students. While they place somewhat of an emphasis on the learning of specific concepts in sequential lessons (RK = 4.74, DK = 4.12), they place a somewhat greater emphasis on individualized expectations in the areas of language, social/emotional, physical, and cognitive objectives (RK = 4.96, DK = 5.76).

The regular and developmental kindergarten teachers would point out that they emphasize the use of manipulatives in their classes (RK = 4.71, DK = 4.12) and place less of an emphasis on paper and pencil or commercially prepared materials (RK = 2.35, DK = 1.72). Both regular developmental kindergarten teachers would indicate that they organize their curriculum with a stronger emphasis on open-ended materials and experiences that are adjusted to an individual student's needs (RK = 5.0, DK = 5.92). Consistent with their emphasis on the achievement of

specific learning goals, they place a weaker emphasis on formal instruction in reading and the traditional subject areas (RK = 3.79, DK = 2.92).

In regards to responses on curriculum components, all mean responses were above 4. Therefore, to describe regular and developmental kindergarten programs, one can look to the emphasis on time spent on activities as a means to indicate their priorities for allocated time. Regular kindergarten teachers place the greatest emphasis on communication and language arts activities (RK = 5.71). The following activities are ranked in terms of emphasis in descending order: mathematics concepts and skills (RK = 5.37), social/emotional activities (RK = 5.18), fine arts/music/aesthetic-creative activities (RK = 5.15), fine or gross motor activities (RK = 5.11), intellectual/cognitive activities (RK = 5.0), social studies/social living concepts and skills (RK = 4.39), health/safety activities (RK = 4.14), and science concepts and skills (RK = 4.07).

For developmental kindergarten teachers, they responded that they place their greatest emphasis in terms of time on social/emotional activities (DK = 6.01). Their responses were also all above 4 and are ranked in descending order as follows: communication/language arts activities (DK = 5.76), fine or gross motor activities (DK = 5.36), mathematics concepts and skills (DK = 5.32), fine arts/music/aesthetic-creative activities (DK = 5.32), intellectual/cognitive activities (DK = 5.0), social studies/social living concepts and skills (DK = 4.64), health/safety activities (DK = 4.56), and science concepts and skills (DK = 4.07).

Thus, if one were to look at lesson plans or observe in the classrooms of these teachers, he or she would notice an emphasis on communication/language arts activities, mathematics activities, fine arts/creative activities, and social/emotional activities. The developmental classroom should show more of an emphasis on social/emotional activities and fine or gross motor activities than the regular kindergarten classroom. However, as indicated on the response on orientation, one would observe a mixture of allocated time on both academic and developmental activities.

In regards to how the activities are structured, the response indicates that when one goes into a developmental kindergarten classroom, he or she should see a stronger emphasis on individualized, child initiated activities (DK = 5.4, RK = 4.54) and less of an emphasis on large group, teacher directed activities (DK = 3.4, RK = 4.04) than in the regular kindergarten classroom. There would be similar amounts of emphasis in terms of time on play (DK = 5.12, RK = 4.92) and small group, teacher directed activities (DK = 4.68, RK = 4.3).

If one were to go into the classrooms of developmental and regular kindergarten teachers, one should notice a stronger emphasis on teacher prepared materials (RK = 5.0, DK = 4.96), concrete manipulatives (RK = 5.44, DK = 6.16), and art and music materials (RK = 5.11, DK = 5.36). Note that the response to concrete materials is similar to the orientation response about materials, but in the orientation response the regular kindergarten teachers indicated a stronger emphasis than the developmental kindergarten teachers. One should observe in the classrooms of both programs less of an emphasis on paper and pencil

and commercially prepared materials (RK = 2.56, DK = 1.96) and student use of books (RK = 3.54, DK = 3.68).

If one were able to stay all week in the developmental or regular classroom, the mean responses indicated that in both regular and developmental classes, he or she should observe every day of the week the teacher reading to children (RK = 4.92, DK = 4.80), use of table toys (RK = 4.64, DK = 4.53), and counting (RK = 4.84, DK = 4.68). Four out of the 5 days one should see students engaged in house/role playing (RK = 4.33, DK = 4.48), block building (RK = 4.52, DK = 4.24), singing and rhythm activities (RK = 4.30, DK = 4.48), painting and drawing (RK = 3.89, DK = 4.48), fine motor activities (RK = 3.89, DK = 4.04), and comparing and sorting objects and numbers (RK = 4.08, DK = 3.88). Three times during the week one should see both developmental and regular kindergarten students matching sounds to letters (RK = 2.74, DK = 2.87), printing first and last names (RK = 3.46, DK = 2.96), sand/water play (RK = 3.0, DK = 3.5), involved in large muscle activities (RK = 3.12, DK = 3.44), identifying upper case letters (RK = 3.00, DK = 3.08), playing number games (RK = 3.11, DK = 2.96), and participating in computer activities (RK = 3.18, DK = 2.96). Twice a week, the responses indicate that one should observe both regular and developmental kindergarten students engaged in science center activities (RK = 2.46, DK = 2.56), paper and pencil activities (RK = 2.19, DK = 2.0), printing simple words in lower case (RK = 1.89, DK = 1.56), and measuring activities (RK = 1.71, DK = 2.12). Once a week the responses indicate that regular and developmental students would be doing wood working (RK = 0.78, DK = 1.25) and

cooking activities (RK = 0.74, DK = 1.12).

In his or her observation, one would note that the developmental kindergarten classroom on the average spent more time on teacher directed instruction with small groups (DK = 4.0, RK = 3.07), listening center activities (DK = 4.04, RK = 3.23), and children looking at books (DK = 4.56, RK = 4.34). The responses indicate that regular kindergarten teachers would spend more time with simple games (RK = 3.72, DK = 3.36), dramatic play (RK = 3.68, DK = 3.40), and reading instruction (RK = 3.27, DK = 2.29).

To determine if there were any similarities or differences was the objective of the second research question. In regards to the response on orientation, developmental kindergarten teachers had responses that were stronger for developmental orientations and weaker for academic orientations. In responses on program components and activities the developmental kindergarten program should have more of an emphasis on social/emotional activities, activities that are individualized, use of manipulatives, and less of an emphasis on reading instruction and large group activities. Other differences in emphasis for components and activities were noted. In addition, there is a difference in class size between regular and developmental kindergarten programs. Developmental kindergartens more often have aides which reduce the adult-to-student ratio.

However, throughout the survey, even though there were differences in emphasis, one is struck by the similarities in terms of the direction of the orientation responses, similar emphases and direction placed on curriculum, material, and activity components. In addition, when

asked about specific activities, one is struck by the fact that similar activities are used and in most cases the same number of times per week.

Conclusions and Discussion

There are several conclusions that can be drawn from the description of regular and developmental kindergarten programs from the data. First, developmental kindergarten programs can be described as different in several ways. Students are placed in developmental kindergarten programs based upon data from screening instruments that indicate that they are "developmentally young." However, the literature review indicates that the use of these screening instruments is suspect. Developmental kindergarten programs have a greater chance of having an aide which reduces the adult-to-student class size ratio. Teachers of developmental kindergarten programs often hold stronger developmental orientations. Responses seem to indicate that in terms of components and activities, there is a greater emphasis on social/emotional curriculum and time spent on individualized, child initiated activities.

The second conclusion to be drawn from the descriptive data is that both developmental and regular kindergarten programs have a mixture of developmental and academic orientations, components, and activities. There are several examples of this. Both groups placed a stronger emphasis on the achievement of specific learning goals while at the same time emphasizing emotional, intellectual, and physical growth. Both groups emphasized time spent on social/emotional activities while also emphasizing time spent on mathematics concepts and skills. Both

groups use such activities as printing first and last names and role playing the same number of times per week.

In relationship to the literature, these findings confirm the analysis conducted in Chapter II of all available state department of education kindergarten curriculum documents (Adams, 1988; Alaska SDE, 1985; Arkansas SDE, 1987; Bartolini & Wasem, 1985; Corley et al., 1982; Duncan, 1987; Education Service Center, 1984; Georgia SDE, 1986; Maine SDE, 1988; Minnesota SDE, 1986; Mississippi SDE, 1984; Oklahoma SDE, 1985; Phillips, 1987; Roberts, 1989; South Dakota SDE, 1986). Both groups had higher mean responses on the developmental orientation questions which mirrored the developmental slant found in the state documents. There are also similarities to the state documents in the mixture of both a developmental and academic emphasis. This is contrary to the survey literature cited where a majority of respondents reported an academic focus (Educational Research Service, 1986; Hitz & Wright, 1988; Bartolini & Wasem, 1985; Thomas & Peterson, 1987). Although the developmental sample had in many cases a greater developmental emphasis, the direction of responses for both groups is not similar to the clear delineation and exclusion of academic orientations recommended by the National Association for the Education of Young Children (1986) nor the ASCD's Early Childhood Education Policy Panel (1988).

The third conclusion to be drawn from the data is that developmental and regular kindergarten programs are more similar than different. Every question mean response was in the same direction. Both groups responded with a more developmental orientation. Although not to the

same degree, both programs emphasized or de-emphasized the same program components. In all but six cases, both developmental and regular kindergarten program responses indicated the use of similar activities for the same times per week.

In relationship to the literature, this is similar to Morado's (1987) survey of developmental and regular kindergarten teachers. In her survey developmental kindergarten teachers rated 18 out of the 27 activities as very important as compared to 23 out of 27 for regular kindergarten teachers. She reported that there seemed to be little difference in the activities reported by these two groups.

Recommendations

An inherent limitation in a descriptive study is the lack of an ability to describe the degree or quality of differences in responses (Kerlinger, 1986). Additional statistical analyses are recommended to draw further conclusions.

This study indicates that there are more similarities than there are differences between developmental and regular kindergarten programs. This brings into question outcomes research for these two programs. Researchers need to examine the two programs and make a clear case that developmental kindergarten programs are an inherently different independent variable, not just a study of the outcomes of a homogeneously grouped sample. In addition, since this study indicates more similarities than differences which seems to support those who claim that developmental kindergarten programs are merely retentions and homogeneous grouping, further evaluation needs to be carried out by

developmental kindergarten advocates to determine differences in programming and benefit.

The fact that developmental kindergarten programs were started and some abandoned with few evaluative studies found in the literature indicates the need for evaluation to be an inherent part of any intervention program to avoid a misuse of investment in time and money, not to mention the possible risks to students.

The use of such a survey as contained in this study for orientations, program components, and activities proved useful in assessing and describing programming characteristics, similarities, and differences. Program developers and administrators may find such a technique useful not only to evaluate the implementation of new programs, but also to assess the alignment of theory, curriculum, and implementation and to serve as a needs assessment for professional development.

Summary

In conclusion, this descriptive study developed an instrument to measure the demographic characteristics of kindergarten teachers, their orientations, their program components, and their use of activities. A description of the programs from teacher responses was narrated. Differences were noted for developmental kindergarten programs: teacher philosophical orientation, greater emphasis on small group activities and less of an emphasis on large group activities, and class size. Both developmental and regular kindergarten teacher responses indicated a mixture of developmental and academic orientations, components, and activities. In most cases similarities were found for both developmental

and regular kindergarten programs. Recommendations were made for further study.

APPENDICES

Appendix A
Human Subjects Institutional Review Board Letter

Human Subjects Institutional Review Board



Kalamazoo, Michigan 49008-3899

WESTERN MICHIGAN UNIVERSITY

Date: January 29, 1993

To: Stephen Anderson

From: M. Michele Burnette, Chair *M. Michele Burnette*

Re: HSIRB Project Number 93-01-02

This letter will serve as confirmation that your research protocol, "A descriptive study of programmatic and curricular components of regular and developmental kindergartens" has been approved under the exempt category of review by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: January 29, 1994

xc: Thompson, EL

Appendix B
Letter to Sample and Kindergarten Survey

AMERMAN ELEMENTARY SCHOOL
847 N. Center St.
Northville, MI 48167
Phone: 344-8405

March 3, 1993

.Data a:ecteach.doc/.name/
.building/
.address/
.city/,.state/ .zip/

Dear .salute/:

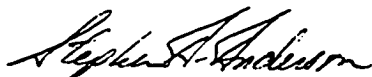
I am conducting a study as part of my doctoral program at Western Michigan University to determine the differences between regular and developmental kindergartens. By describing these differences, I believe it will be helpful to make decisions regarding early childhood education. You are under no obligation to participate in this study.

I would appreciate it if you would take the time to fill out the enclosed survey and return it to me by March 15 in the enclosed self-addressed stamped envelope. Your survey results will remain anonymous and, therefore, responses will only be reported for total groups, not individual teachers, buildings, or school districts. I will maintain the only copy of these surveys and will maintain their security.

The enclosed survey contains questions about the program you teach right now. A developmental, young 5's, or begindergarten program is defined as one that accepts students who by age would normally qualify for kindergarten, but because of some screening device are placed in the program because they are considered "developmentally young." It asks you to rate the time you spend on different components of your program. I am asking you for your responses on this survey because of your experience in kindergarten programming. The survey and study has been reviewed by teachers and directors of early childhood education in the county, superintendents in your county, and by professors at Western Michigan University. If you are interested in the results of this survey, please contact me at (313) 344-8405 or write a note to me when you return your survey.

As an educator, I know your time is important to you. That's why I'm very appreciative of the time you are taking with this survey. I am enclosing \$1- please have a pop or cup of coffee on me. Thank you for your cooperation.

Sincerely,



Stephen A. Anderson
Principal

3. Teacher Role

The teacher plans and organizes the environment, facilitates learning.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

The teacher determines and initiates activities, provides direct instruction for specific skills

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

4. Pupil Role

The pupil sits and follows instructions.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

The pupil initiates activities and exploration.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

5. Activities

Same abstract concepts taught to all children. Emphasis is on large group instruction. Much paper and pencil work.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

Work and play individually, small groups, child initiated exploration, informal atmosphere. Manipulation of concrete objects in natural/play situations.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

6. Materials

Strong use of paper and pencil to copy abstract symbols. Commercially prepared materials.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

Manipulation of concrete objects. Paper and pencil used sparingly and for child's creative purposes.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

7. Expectations for Students

Individualized in areas of language, social/emotional, physical, and cognitive objectives.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

Children are expected to learn some academic symbols/concepts in sequential lessons.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

8. Curriculum

Open-ended materials and experiences adjusted to individual student's developmental needs. Developmental objectives in the areas of physical, emotional, social, and intellectual development.

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

Formal reading readiness, phonics, and/or reading instruction. Additional objectives in traditional subject areas (e.g. social studies, science, reading, math).

Strong
Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1 : Weak
Emphasis

For questions 9-26 please estimate the degree your program emphasizes the following curricular components, activities, and materials. To the right of the componen, circle the number that best represents your program's emphasis in terms of time used for that component.

Curriculum Components

	Strong Emphasis: 7	: 6	: 5	: 4	: 3	: 2	: 1	Weak :Emphasis
9. Time spent on fine or gross motor activities.	7	6	5	4	3	2	1	
10. Time spent on social/emotional activities	7	6	5	4	3	2	1	
11. Time spent on intellectual/cognitive activities	7	6	5	4	3	2	1	
12. Time spent on communication/language arts activities.	7	6	5	4	3	2	1	
13. Time spent on mathematics concepts and skills.	7	6	5	4	3	2	1	
14. Time spent on social studies/social living concepts and skills.	7	6	5	4	3	2	1	
15. Time spent on science concepts and skills.	7	6	5	4	3	2	1	
16. Time spent on health/safety activities, concepts, and skills.	7	6	5	4	3	2	1	

	Strong Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1							Weak :Emphasis
17. Time spent on fine arts/ music/ aesthetic-creative activities.	7	6	5	4	3	2	1	

Activity Components

	Strong Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1							Weak :Emphasis
18. Time spent on individualized, child initiated activities.	7	6	5	4	3	2	1	
19. Percent of time spent on large group, teacher director activities.	7	6	5	4	3	2	1	
20. Time spent on play.	7	6	5	4	3	2	1	
21. Time spent on small group, teacher directed activities.	7	6	5	4	3	2	1	

Materials Components

	Strong Emphasis: 7 : 6 : 5 : 4 : 3 : 2 : 1							Weak :Emphasis
22. Time your students use paper and pencil materials or commercially prepared materials such as dittos or workbooks	7	6	5	4	3	2	1	

	Strong Emphasis: 7	: 6	: 5	: 4	: 3	: 2	: 1 Weak :Emphasis
23. Time your students use teacher prepared materials and activities in centers.	7	6	5	4	3	2	1
24. Time your students use concrete manipulatives.	7	6	5	4	3	2	1
25. Time your students use books.	7	6	5	4	3	2	1
26. Time your students use art and music materials.	7	6	5	4	3	2	1

Activities

Below are a list of activities. For questions 27-54 please place an "X" in the column that best describes how often the activity is used or performed by your class.

	5 times a week	4 times a week	3 times a week	2 times a week	Once a week	Never
27. Matching sounds to letters						
28. Block building						
29. Printing first and last names						
30. Teacher reading to children						
31. House/role playing						
32. Teacher directed instruction with small groups						

	5 times a week	4 times a week	3 times a week	2 times a week	Once a week	Never
33. Sand/water play _____						
34. Wood working _____						
35. Painting and drawing _____						
36. Cooking activities _____						
37. Science center activities _____						
38. Listening center activities _____						
39. Table toys (e.g. legos, puzzles, peg boards). _____						
40. Simple games (e.g. board games, concentration). _____						
41. Singing and rythm activities _____						
42. Children looking at reading books _____						
43. Large muscle activites (e.g. gallop/skip) _____						
44. Fine motor activities (e.g. cut, paste) _____						
45. Counting _____						
46. Comparing and sorting objects and numbers _____						

	5 times a week	4 times a week	3 times a week	2 times a week	Once a week	Never
47. Paper and pencil activities (e.g. tracing, dot-to-dot) _____						
48. Printing simple words- lower case _____						
49. Identifying upper case letters _____						
50. Playing number games _____						
51. Measuring activities _____						
52. Computer activities _____						
53. Dramatic play _____						
54. Reading instruction _____						

THANK YOU FOR YOUR HELP!

When you are finished with the survey please mail it in the envelope provided.

Appendix C

Ranked Responses for Screening Instruments for Developmental Kindergarten and Test Reviews of Readiness Kindergarten Screening Instru- ments in Mental Measurements Yearbook

Table 8
 Ranked Responses for Screening Instruments
 for Developmental Kindergartens

Instrument	Frequency of districts reporting use
Gesell	48
ABC	19
DIAL	16
Brigance Diagnostic	11
Locally developed objective reference test	9
Lesiak	6
Caldwell	5
Beery	3
Deu-Task of K-R	3
Anton Brenner, Brenner Gestalt	3
Boehm Slater	2
MAT	2
Peabody	2
CPI	1
Daberon	1
Dallas	1
Elliot-Pearson	1
Frostig	1
Haptic Perception	1
MAP	1
Miller Preschool Assessment	1
Minnesota	1
Zimmerman	1

Table 9

**Test Reviews of Readiness Kindergarten Screening
Instruments in Mental Measurement Yearbook**

Name of test	Validity			Reliability	Norms	Comment
	Content	Predictive	Criterion			
Gesell	+	.64?	22%	.84?	?	21% or greater error rate
ABC	U	.70?	.78	0	?	37% false negatives
DIAL	+	0	.56(IQ)	?	0	
Brigance	0	0	0	0	0	Criterion- referenced
Locally developed	?	?	?	?	?	
Lesiak	U	U	U	U	U	No review
Caldwell	U	U	U	U	U	No review
Beery	U	U	U	U	U	No review
Deu-Task	+	0	.20-.62	.90	?	
Brenner	0	0	.66-.75	.54-.92	?	
Boehm	+	0	0	.68-.90	?	
MAT	+	0	+IQ	.75-.90	+	
Peabody	+	0	.16-.78	.52-.91	+	
CPI	0	0	.2-.5	0	?	For ages 13 and over
Daberon	U	U	U	U	U	No review
Dallas	U	U	U	U	U	No review

Table 9--Continued

Name of test	Validity			Reliability	Norms	Comment
	Content	Predictive	Criterion			
Elliot-Pearson	U	U	U	U	U	No review
Frostig	+	0	0	.60	?	Judged unacceptable
Haptic	U	U	U	U	U	No review
MAP	+	0	.27-.31	.79-.98	+	
Minnesota	0	0	0	.79	+	
Zimmerman	U	U	U	U	U	No review

Note. + = present in reviews; ? = in question or doubtful; 0 = not present by test author or reviewers; U = unknown.

Appendix D
State Department of Education Recommendations
for Programmatic and Curricular Components
for Kindergarten Programs

Table 10
State Department of Education Recommendations for Programmatic and
Curricular Components for Regular Kindergarten Programs

Curricular components	State															Organi- zation
	PA	IA	ME	CT	TX	OR	AR	SC	OK	AK	SD	GA	IL	MS	MN	NAEYC
Fine or gross motor/P.E.	X	X	X		X	X	X	X		X	X	X	X	X	X	X
Social/emotional	X	X	X		X	X				X		X	X	X	X	X
Intellectual/cognitive	X	X	X		X	X		X		X		X	X	X	X	X
Communication arts/ language development	X	X	X		X	X	X	X		X	X	X	X	X	X	X
Mathematics concepts and skills	X									X		X		X		
Social studies/social living	X						X				X	X		X		
Science	X						X			X	X	X		X		
Health/safety	X						X			X	X	X		X		
Fine arts/music/ aesthetic-creative development	X		X		X		X			X	X	X		X		X

Table 10--Continued

Programmatic component	State														Organization	
	PA	IA	ME	CT	TX	OR	AR	SC	OK	AK	SD	GA	IL	MS	MN	NAEYC
Individualization	X	X	X	X		X								X	X	X
Interactive activities	X	X	X	X										X	X	X
Facilitative role for teacher	X	X	X			X								X		X
Manipulation/exploration activities, time, use of concrete activities	X	X	X			X									X	X
Play is learning	X		X	X		X								X	X	X
Class size, 2 per 20	X		X			X									X	X
Developmentally appropriate activities	X	X	X			X			X			X	X	X		X
Direct instruction											X					
Thematic/integrated approach to units	X	X		X		X						X		X	X	
Child initiated activities emphasis	X		X	X		X									X	X

Table 10--Continued

Programmatic component	State															Organi- zation
	PA	IA	ME	CT	TX	OR	AR	SC	OK	AK	SD	GA	IL	MS	MN	NAEYC
Ongoing assessment (not for placement)		X		X		X										X
Parent involvement	X		X	X									X		X	X
Use of centers	X		X	X		X		X	X			X		X		X
Early elem. teacher certificate	X	X	X													
Balance of directed, small group, individual activities		X									X				X	

Note. X = component recommended in state or organization manual. NAEYC = National Association for the Education of Young Children.

Appendix E
Test for Homogeneity of Sample Responses

Table 11
Test for Homogeneity of Sample Responses

Question	Developmental kindergarten variance	Regular kindergarten variance	<u>F</u> ratio	<u>F</u> _{cv}
Orientation questions				
2a	1.40	1.23	0.88	1.96
2b	0.48	1.10	2.29*	1.96
3a	1.06	0.89	0.85	1.96
3b	2.11	2.57	1.22	1.96
4a	0.99	2.69	2.73*	1.96
4b	0.96	1.57	1.63	1.96
5a	0.82	2.41	2.93*	1.96
5b	0.55	1.49	2.71*	1.96
6a	0.84	1.80	2.14*	1.96
6b	1.17	1.69	1.44	1.96
7a	1.40	2.61	2.28*	1.96
7b	1.55	1.85	1.19	1.96
8a	1.11	2.43	2.18*	1.96
8b	2.31	3.31	1.43	1.96
Curriculum components				
9	1.11	1.45	1.31	1.96
10	0.72	2.08	2.88*	1.96
11	1.28	1.36	1.06	1.96

Table 11--Continued

Question	Developmental kindergarten variance	Regular kindergarten variance	<u>F</u> ratio	<u>Fcv</u>
Curriculum components				
12	1.62	1.35	0.83	1.96
13	0.78	0.97	1.25	1.96
14	1.43	2.24	1.57	1.96
15	1.29	1.50	1.50	1.96
16	1.29	1.77	1.37	1.96
17	0.94	1.68	1.79	1.96
18	1.28	2.25	1.76	1.96
19	1.20	1.73	1.44	1.96
20	1.39	1.99	1.44	1.96
21	1.50	1.99	1.33	1.96
22	0.99	1.43	1.43	1.96
23	1.56	1.48	0.95	1.96
24	0.45	1.21	2.66*	1.96
25	3.50	3.25	0.93	1.96
26	1.11	1.73	1.56	1.96
Activity components				
27	3.59	2.12	0.59	1.96
28	1.14	0.40	0.35	1.96
29	4.19	3.17	0.76	1.96

Table 11--Continued

Question	Developmental kindergarten variance	Regular kindergarten variance	<u>F</u> ratio	<u>Fcv</u>
Activity components				
30	0.96	0.14	0.15	1.96
31	0.73	0.96	1.32	1.96
32	1.36	2.07	1.52	1.96
33	2.67	3.85	1.44	1.96
34	2.94	2.47	0.84	1.96
35	0.57	1.87	3.29*	1.96
36	0.51	1.21	2.40*	1.96
37	2.41	2.40	1.00	1.96
38	1.48	2.87	1.94	1.96
39	0.55	0.63	1.15	1.96
40	2.15	1.96	0.91	1.96
41	2.15	2.40	1.00	1.96
42	0.65	1.46	2.25*	1.96
43	2.33	1.64	0.71	1.96
44	0.92	1.03	1.12	1.96
45	0.62	0.21	0.35	1.96
46	1.31	0.99	0.76	1.96
47	2.00	2.23	1.11	1.96
48	3.13	2.10	0.67	1.96
49	3.11	3.21	1.03	1.96

Table 11--Continued

Question	Developmental kindergarten variance	Regular kindergarten variance	<u>F</u> ratio	<u>Fcv</u>
Activity components				
50	1.56	1.51	0.97	1.96
51	1.63	1.42	0.87	1.96
52	5.03	3.58	0.71	1.96
53	2.48	2.22	0.89	1.96
54	4.37	3.27	0.75	1.96

* $p < .05$.

Appendix F
Reliability Coefficient for Survey

Table 12
Reliability Coefficient for Survey

Item	Alpha if item deleted	Item	Alpha if item deleted
2a	.7719	16	.7616
2b	.7680	17	.7691
3a	.7717	18	.7555
3b	.7771	19	.7722
4a	.7809	20	.7575
4b	.7654	21	.7605
5a	.7888	22	.7826
5b	.7643	23	.7589
6a	.7771	24	.7580
6b	.7665	25	.7673
7a	.7615	26	.7677
7b	.7827	27	.7783
8a	.7654	28	.7708
8b	.7873	29	.7732
9	.7631	30	.7729
10	.7605	31	.7672
11	.7682	32	.7614
12	.7619	33	.7730
13	.7649	34	.7703
14	.7581	35	.7663
15	.7611	36	.7695

Table 12--Continued

Item	Alpha if item deleted	Item	Alpha if item deleted
37	.7658	48	.7748
38	.7632	49	.7741
39	.7671	50	.7662
40	.7666	51	.7663
41	.7754	52	.7849
42	.7703	53	.7640
43	.7641	54	.7756
44	.7666	Coefficient alpha	.7772
45	.7697		
46	.7684		
47	.7769		

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