An analysis of a developmental kindergarten and pre-first program and their effects on academic and behavior outcomes

Amanda R. Reenders

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An Analysis of a Developmental Kindergarten and Pre-First Program
And Their Effects on Academic and Behavior Outcomes
by
Amanda R. Reenders

Dissertation

Submitted to the Department of Leadership and Counseling
Eastern Michigan University
in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

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Ypsilanti, MI
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Many people have helped turn my goal into reality, and for that I am most grateful. I would like to thank Dr. Charles Achilles for his guidance and wisdom. It was truly a pleasure to work under the direction of someone with such a wealth of knowledge and experiences. I would also like to thank the other members of my committee: Dr. Julie Chlebo, Dr. Sue Grossman, and Dr. William Price. Their comments and assistance were very much appreciated. Last, I am indebted to my family for their constant understanding and encouragement.
STRUCTURED ABSTRACT

**Background:** Political influences, accountability measures, and parental demands continue to increase the academic focus in the early grades. Students are being identified as un-ready for kindergarten and first grade. Many school districts have implemented transition programs as a way to assist these at-risk students.

**Purpose:** To assess the effectiveness of Developmental Kindergarten (DK) and Pre-First (PF) placements based on long-term academic and behavior outcomes.

**Setting:** Subjects were enrolled in one suburban public elementary school.

**Subjects:** 97 students who were continuously enrolled from 2000-2005. Students were categorized into one of three groups: Eligible for a transition program and participated (TP), Eligible for a transition program but did not participate (TP Eligible), and not eligible for a transition program (Traditional).

**Intervention:** Eligible students were invited to participate in a year-long transition program. Transition program participants were removed from their same-age peers and given an alternative curriculum. Placement for DK was based on age (students turned 5 years old in July-November) and parent judgment. Near the end of kindergarten, teachers ranked students based on reading readiness. The lowest students from each class were given the Reading Recovery Observation Survey to determine the 15 students with the lowest scores who would be offered PF placements.

**Research Design:** A nonexperimental, program evaluation that used post-hoc data and same-age comparisons.

**Data Collection and Analysis:** The following academic measures were used: Iowa Test of Basic Skills reading and math (grades 2-3) and Rigby Reading Comprehensive Reading Assessment (grades 1-3), retention-in-grade, and participation in special education and remedial reading. The following measures were used to evaluate behavior outcomes: Discipline referrals, conduct grades, social work participation, Revised Behavior Problem Checklist, and Behavior Problem Indicator. Demographic information included preschool/day-care participation, parent education levels, gender, and age. Attendance was also examined. Analysis of variance was used to analyze parametric data. Chi-square was used for nonparametric data. Effect sizes for academic measures were also computed.

**Findings:** No significant academic findings were found. Transition Program students attended significantly more school than did TP Eligible students. Transition program students earned significantly lower conduct grades for following directions than did the other groups. The TP Eligible fathers had significantly more education than did the fathers of TP students. Significantly more males participated in the transition programs than in the other groups. In rankings of academic measures, the TP students were last on 6 of 7 measures, the TP Eligible group was last one time, and the Traditional students were first 5 of 7 times.
Behavior rankings were as follows: TP students were last every time, TP Eligible students were first 2 of 6, and Traditional were first 4 of 6.

Conclusions: No benefits were found for students who participated in a transition program. Transition Program and TP Eligible students were able to overcome at-risk characteristics and achieve academic and behavior outcomes that were similar to their Traditional peers. The TP Eligible students were able to achieve these outcomes without participating in a year-long intervention program (DK or PF).
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A child's readiness to enter formal schooling has been of growing interest to educators and politicians since the 1940s. Two approaches to readiness are commonly used: chronological age and developmental age (Freberg, 1991). These readiness approaches depend on the situation and perspective of those using the term (May & Kundert, 1997). The concepts of chronological age and developmental age are evaluated differently between states and even between individual school districts (especially developmental age).

Concern for disadvantaged students and a growing demand for accountability in education have increased the emphasis on the screening of young children (Gredler, 1997). School personnel use screening instruments in an attempt to ensure that students are ready for the school experience. Some researchers have argued that an emphasis on child readiness negates the school's responsibility to educate all students who are of legal age to enter school (Smith, 1999; Bredekamp, 1990).

The use of a screening instrument to assess readiness is related to the maturation approach. Maturation follows a medical, biological view that is commonly associated with the Gesell Institute of Human Development (May & Kundert, 1997). This approach emphasizes time to develop and mature as a decisive factor in the readiness and success of a child (Gredler, 1997).

Children must progress through certain developmental prerequisites in order to be successful in school. These developmental prerequisites cannot be rushed. Rather, future successes depend on providing children the “gift of time” that is needed to mature (May & Welch, 1984). “This theory is in opposition to the concept of early intervention, since it does not prescribe a program based on the child's specific need, but assumes that waiting a year in
a less demanding environment will make the child ready” (May & Welch, 1984, p. 382).

The interactionist approach to readiness is dependent on and stimulated by the learning environment. Thus, school success does not depend on the biology of the child; behavior and achievement can be guided and enhanced through interactions at school (May & Kundert, 1997).

Readiness can also be defined using a social constructivist model. Social constructivism includes social and cultural interactions; a child's environment helps to define readiness. Therefore, readiness may vary in different settings (Meisels, 1999). External evidence of learning signifies readiness in the empiricist/environmental approach. Specific skills are needed for school success and these skills must be taught (Meisels, 1999).

Developmental Kindergarten (DK) programs are generally linked to the maturation approach. Children are placed in these programs according to developmental stages, not chronological age (Slavin, 1994). This approach to DK differs from the approach used in the district in this study, where educators employed chronological age as the most influential factor in the placement decision. For the first 10 years of the DK program (1987-1997), district personnel used a readiness screening instrument. In 1997, screening of the district's students prior to kindergarten was discontinued. School personnel questioned the validity of screening young children, did not want a testing situation to be a child's first encounter with school, and were concerned that parents often ignored placement recommendations. The school personnel's concern about using a screening instrument as an early identification tool for kindergarten has also been echoed by many researchers (Gredler, 1997; Shepard & Smith, 1988; Shepard, 1997).

An examination of DK and Pre-First (PF) programs was warranted because of the costs
incurred, the need to monitor student success, and the existing controversy of students being old-for-grade (these students could be in the grade above their current grade, based on age) and retention practices. Students who were eligible for DK had birthdates in the five months (July-November) preceding the state's age requirement for school entrance (five years old by December 1). Students with July-November birthdates were identified as “young” by the school staff and were therefore deemed more likely to experience school difficulties due to developmental immaturity and a lack of kindergarten readiness.

Parents had the final authority in placement decisions. The conditions are summarized in Table 1. A parent's decision about a child's participation in a transition program may indicate differences in parental involvement and childrearing practices. For example, the attendance structure of the programs may have impacted child-care issues and therefore influenced a parent's placement decision. Developmental kindergarten was an all day, every-other-day program and PF was an all day, every day program. It was important to try to identify a) differences, if any, between parents who accepted the recommendations and those who refused; and b) any student outcomes. Parent differences and social capital (e.g., social class, education, etc.) may influence a child's academic and/or social achievement.

Statement of the Problem

In 2004, approximately 98% of all children in the United States were attending a kindergarten program (DeCesare, 2004). However, the kindergarten experience (academic or developmental focus, length of day, setting, etc.) is far from uniform. The increasing universality of kindergarten attendance, political accountability pressures, and demands from middle-class parents have created an academic focus in kindergarten that is particularly detrimental to students who are at risk of failure (Shepard & Smith, 1988).
Table 1

*Factors Used in District A for Placement of Developmental Kindergarten (DK) and Pre-First (PF) Students 2000-2005*

<table>
<thead>
<tr>
<th>Condition</th>
<th>Criteria</th>
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<tr>
<td>1. Developmentally Immature</td>
<td>Age (Student’s fifth birthday is July-November) and Parent Judgment</td>
<td>DK➔ K➔ 1&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>K➔ PF➔ 1&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Education and political leaders have reacted to academic demands on young children by increasing the age of kindergarten entry, instituting readiness screenings, retaining kindergarten students, and implementing transition programs. These actions are intended to alleviate the academic pressures felt by teachers and students by removing students who are younger or unready for the curriculum (Shepard & Smith, 1988).

Educator attention on the early grades is appropriate. Early school success does not guarantee future success, but failure in the early grades usually assures failure in later schooling (Slavin, 1994). Therefore, education leaders must be concerned about the success of students in the early grades and be knowledgeable about programs and interventions that are likely to promote student success. Slavin (1994) stated that “The knowledge that school failure is preventable could (and should) fundamentally change the political calculus surrounding the education of students at risk of school failure” (p. 5).
Purpose of the Study

The purpose of this study was to explore the long-term academic and behavior outcomes of transition programs [Developmental Kindergarten (DK) and Pre-First (PF)] in a middle-class, suburban school district. Students who participate in a transition program become old-for-grade and extend the length of their school careers. It was important to examine the long-term effects that the DK and PF programs had on students who had been removed from their same-age peers and given an alternative curriculum.

Significance of the Study

Few quality controlled, peer-reviewed studies exist in which researchers have examined the outcomes of transition programs, particularly DK programs. More studies in this area are needed to expand the body of knowledge about transition programs, child readiness, and early interventions. Such information should be used to assist education leaders in responsible decision-making. Unfortunately, educators often implement new programs without evaluating either short-term or long-term outcomes (Gredler, 1984). In the case of short-term decisions, educators may follow a fad or be influenced by sales pressures. Yet after a program is implemented, such programs seldom undergo independent evaluation. Careful analysis of long-term outcomes is replaced by good intentions, short-term benefits, and personal opinions. As academic demands in kindergarten and first grade continue to escalate, education leaders should institute programs and spend funds to benefit students.

Research Questions

1. What, if any, were the differences in academic outcomes for students who qualified for placement in a transition program (DK or PF) and participated in the program and students who qualified for placement in a transition program but chose to remain in the traditional
grade-level sequence?

2. What, if any, were the differences in academic outcomes for students who qualified for placement in a transition program and attended the program and students who did not qualify and participated in traditional grade progression?

3. What was the relationship, if any, of the DK and PF programs on rates of retention, special education, remedial reading services, school social work services, conduct, and attendance?

4. What, if any, were the differences in behavior outcomes for students in each of the groups?

Research Method and Design

The research questions were focused on examining a local problem in a local setting (Leedy & Ellis-Ormrod, 2005). The design was identified as longitudinal, explanatory research according to Johnson's (2001) classification of nonexperimental quantitative research. This classification is based on two dimensions: research objective and time. The objective for this study was to explain the influence of transition programs within this district (explanatory) with data collected at multiple time points (longitudinal).

This research also had some elements of pre-experimental, static-group comparison and ex post facto design. Random assignment was not possible. Experimental and control groups were identified after treatment (DK or PF) and examined to determine if and in what ways the performance of the groups differed (Campbell & Stanley, 1963; Leedy & Ellis-Ormrod, 2005).

Student placement was based on district eligibility guidelines and procedures. DK and K placement were not based on a screening instrument. Therefore, no pretest information was available to determine if the groups were similar before the treatment. Groups were matched post hoc on basic demographic information (preschool/day-care experience, education levels
of the mother and father, gender, and age) to identify differences unrelated to program eligibility that may have existed before the treatment.

**District**

This study was conducted in a suburban district with a land area of 34 square miles. In 2000-2001 (the year the identified students entered school), student enrollment for the district was 1,834. The district's ethnicity has been predominantly Caucasian (95%). The socioeconomic status based on free and reduced lunch aid has remained consistent over the last five years, with approximately 20% of students receiving free and reduced lunch aid.

Until 2004-2005, there was only one elementary building in the district with approximately 950 students (DK-5). This district has operated a DK program for more than 15 years. There were two sections of DK (2 full days and one half day per week). Each DK section had the same teacher. The PF program was in its first year of implementation in 2001-2002 (the year after the identified students started school). There was one section of PF (all day, every day).

**Delimitations and Limitations**

The definition of academic and behavior outcomes, the location of the study, the years of data collected, and the students included in the study were delimitations. Academic outcomes were delimited to the Iowa Test of Basic Skills (ITBS) and the Rigby Comprehensive Reading Assessment (Rigby). Student scores from the reading and math subtests of the ITBS were collected. The ITBS scores were available only for grades 2 and 3. Kindergarten, PF, and 1st grade students did not take the ITBS. End of the year reading levels from the Rigby were collected for grades K-3. The Rigby identifies student reading levels based on fluency and comprehension. The academic areas of math and reading were chosen
because of their strong connection to future academic successes.

It was possible to collect academic outcome data from sources (report cards, classroom tests) other than ITBS and Rigby. However, there were six to seven classrooms for each of the traditional grade levels (K, 1, 2, 3, 4). Therefore, ITBS and Rigby provided the most reliable source of academic data between classrooms and reduced reliance on teacher subjectivity.

The definition of behavior outcomes was also delimited by the researcher. Behavior outcomes is a broad term that could encompass many different measures. Behavior outcomes in this study were delimited to the following measures: Revised Behavior Problem Checklist (RBPC), conduct grades on report cards, discipline referral records, and school social work services. With the exception of the RBPC, these measures were selected for ease of accessibility, consistency of school records (these records were collected for all students if applicable), and variety of adult input (classroom teachers decide conduct grades, discipline referrals are made by school personnel [not just classroom teachers], and social work referrals are made by any adult in the child's life).

The RBPC was chosen as a standardized instrument of measurement that provided current data related to student behaviors. The RBPC accesses behavior problems according to conduct disorder, socialized aggression, attention problem-immaturity, anxiety-withdrawal, psychotic behavior, and motor tension-excess. This instrument attempts to identify typical behavior problems displayed by elementary students as well as more unusual and severe behaviors.

The study was delimited to this single district because the researcher's relationship with the district increased the probability of adult cooperation and access to records. In making
this choice, the researcher also delimited the characteristics of the identified students. The students were predominantly middle-class and Caucasian.

Another delimitation of this study was the number of years of data that were collected. Data from academic outcomes were collected through 3rd grade. Behavior outcomes were followed through grade 3. These delimitations were based on available data.

Small \( n \) for several groups made it statistically inappropriate to examine DK and PF as separate transition programs. The inclusion of both transition programs, combined with the limitation of the short existence of the PF program, led to the identification of the cohort (students who entered kindergarten one year prior to the start of the PF program). Students were in fourth grade during the year of data collection (2004-2005) if they did not participate in a transition program. If a student participated in a transition program he/she was in third grade.

The desire to collect longitudinal data and an interest in the effects of transition programs led to the decision to exclude any students who were not continuously enrolled in the district when the cohort began schooling (2000-2001). Students who entered school after this date or did not remain within district until the time of the study had schooling experiences that varied from the cohort and were therefore excluded. Two students who did not speak English as their primary language were also excluded.

Limitations were related to the action research approach of this study. Action research is confined to a local problem in a local setting (Leedy & Ellis-Ormrod, 2005). The researcher's ability to collect data was also controlled by the setting. For example, 1st grade reading test scores cannot be analyzed if a reading test was not administered in 1st grade or district officials did not maintain a record of these scores. Therefore, decisions about data
collection and analyses were based on available data.

The behavior outcomes of this study were limited by several factors. The post hoc nature of this study did not make it possible to administer the Revised Behavior Problem Checklist (RBPC) each year of schooling for the identified students. Relying on teachers' memories to rate specific behavior statements would have created reliability concerns. Therefore, the RBPC was completed only by teachers who had direct contact with the students during the year of data collection (2004-2005).

The ability to have a RBPC completed for each student in the population was limited by teacher willingness to complete the checklists and parent willingness to provide permission for this information to be collected about their child. The collection of demographic information that was not available in student records (preschool/day-care experience and education levels of the mother and father) was limited by the parents who chose to complete and return a parent survey. Preschool participation was recorded in some student files.

Data related to behavior outcomes were also limited by the district's policy of purging all records of discipline referrals to an administrator. Discipline records were available for all identified students for grades 1 and 2. Records for DK, K, and PF no longer existed. Discipline referrals for grade 3 also were not included in this study because records were not available for all students until several months after data were collected.

The selection of subjects was also a limitation. Selection was based on district procedures and eligibility requirements for transition programs. A student was eligible for DK if he/she turned five years old between July and November of the entering school year. No screening instrument was used to determine program eligibility. Consultation with a teacher was available at the parent's request. The final placement decision was made solely
by the parent. It was not possible to identify any academic or behavioral conditions that existed before students participated in DK. Therefore, matched comparisons of the groups before DK treatment were limited to student demographic information.

Participation in an extra-year program made DK students old-for-grade. Therefore, DK students were not eligible for the PF program which would further increase the chronological age gap between DK students and same-grade peers. Students who teachers believed were “headed” for special education placements in the future were also not eligible for PF. Teacher judgment was used to rank K students based on reading readiness. Teachers used these rankings to identify K students who were at risk for first-grade failure. These at-risk kindergarten students (not former DK students) were deemed eligible for PF by their kindergarten teachers. However, the number of eligible PF students exceeded the class-size limit of 15. Therefore, academic testing (Reading Recovery Observation Survey), which focused on the student's current reading skills, was used to further limit eligibility. An invitation for students to participate in the PF program was extended to parents based on the lowest student scores.

Only referred students had kindergarten posttest (Reading Recovery Observation Survey) information available. Kindergarten posttest comparisons between students recommended for PF and the rest of the cohort (DK and K) were not possible. Parents made the final decision about PF placement. However, school personnel provided input and recommendations based on the student's age, academic information, and behavior observations (personal teacher observations, not documented).

At the time the identified cohort entered school (2000-2001) and participated in the transition programs there was only one elementary school in the district. The existence of
one elementary building limited the use of another elementary building (in the district) as a comparison condition.

**Definition of Terms**

**Academic Outcomes**- Reading and mathematics test scores, retention in grade, involvement in remedial reading, participation in special education.

**At-Risk**- Students who have the potential to experience difficulties in school because of developmental immaturity, difficult family circumstances, or learning problems.

**Attendance**- The number of days that a student attended school during the academic year.

**Behavior Outcomes**- Conduct grades on report cards, participation in school social work services, RBPC results, and discipline referrals to an administrator.

**Developmental Kindergarten (DK)**- A program designed to provide a developmentally appropriate curriculum for students considered in need of an extra year of development prior to kindergarten.

**Developmentally Immature**- A student who is of legal age to enter kindergarten, but is not perceived by teachers and/or parents to possess the emotional and social skills needed for success in the school environment.

**Eligibility for Developmental Kindergarten (DK)**- Students with birthdates in the five months preceding the December 1 cut-off date were eligible for the developmental kindergarten program.

**Eligibility for Pre-First (PF)**- Students were identified by their kindergarten teachers as being at risk for difficulties in 1st grade. The reading skills of at-risk students were assessed, and students with the lowest test scores (class-size limit of 15) were offered a PF placement.

Students who participated in DK or had their seventh birthday before February of the year of
the transition program participation were ineligible. For the purposes of this study, a student identified by his/her kindergarten teacher was deemed eligible for PF.

**Group-** Students that share the same program eligibility and program placement (i.e., DK or PF eligible and placed [TP]; eligible for DK and/or PF, not placed [TP Eligible]; and traditional enrollment path, no transition eligibility [Traditional]).

**Iowa Test of Basic Skills (ITBS)-** A standardized test that measures student achievement levels in various subjects.

**Old-For-Grade-** Students who could be in the grade above their current grade, based on age.

**Pre-First (PF)-** Identified students are taught in a separate classroom (between kindergarten and first grade) with a specific curriculum that was designed to prepare them for first grade.

**Redshirting-** The practice of delaying a student’s entry into formal schooling. This delay occurs even though the child is eligible for kindergarten based on age.

**Remedial Reading-** Reading intervention programs that are provided to assist students that have been identified as at-risk. Remedial reading at this school included Title I services and Reading Recovery.

**Retention In Grade-** The process of keeping a student in the same grade for an additional year. The child repeats the same curriculum.

**Revised Behavior Problem Checklist (RBPC)-** A standardized instrument that accesses behavior problems according to six sub-scales: conduct disorder, socialized aggression, attention problem-immaturity, anxiety-withdrawal, psychotic behavior, and motor tension-excess.

**Rigby Comprehension Reading Assessment (Rigby)-** A standardized instrument that provides student reading levels based on reading fluency and comprehension.
Special Education- Students who have qualified to receive special education services within the classroom or outside of the regular classroom setting. For the purposes of this study, a student was identified as special education if s/he had academic goals listed on his/her Individualized Education Plan (IEP). Therefore, students who received only speech and/or occupational therapy were not identified as special education students.

School Behavior- A student's ability to interact in the school setting in a manner that is deemed socially acceptable by the school staff. Appropriate student behavior should enable a student to participate in all learning experiences.

School Social Work Services- Services provided to the student by the school social worker. Social work services were recorded only if the social/emotional issues were not associated with an identifiable event (divorce, death in family, etc.) in the child's life.

Transition Program- A program designed for students who are deemed unready for the next grade level (DK and PF). Students are removed from their peers and given a specific curriculum designed to prepare them for the next grade level.

Data Sources

The majority of the data were collected from existing school files (student records and the school's database system). The only information that was not collected from school files were the parent survey and the RBPC. A voluntary parent survey (see Appendix A) was used to gather information about participation in preschool and/or day-care and education levels of the mother and father. This basic survey demonstrates face validity. The survey was given to parents during parent-teacher conferences in November 2004. At that time, parents were also given a form to permit the teacher to complete the RBPC about their child.

The RBPC, Iowa Test of Basic Skills (ITBS), and Rigby Comprehensive Reading
Assessment (Rigby) are published, standardized instruments that were also used as a source of data. Standardized instruments allow comparisons of data from various settings and provide objectivity (Gay, 1996). The RBPC by Quay and Peterson (1996), consists of 89 items with weighted scores (0 = no problem, not observed; 1 = mild problem; 2 = severe problem). The RBPC has six subscales related to behavior outcomes: conduct disorder, socialized aggression, attention problems-immaturity, anxiety-withdrawal, psychotic behavior, and motor tension-excess.

The mean internal reliabilities for the six subscales range from .70 to .95. Teacher interrater reliabilities (agreements) range from .52 to .85. Construct validity of the RBPC has been established with at least six different samples of children. Norms are provided by gender and grade, based on a sample of 972 unselected public school children in rural and suburban schools.

All RBPC ratings occurred during the same school year (2004-2005). Students who participated in a transition program (DK or PF) were rated during third grade by their third-grade teachers. Traditional students who did not experience an extra year placement were rated by their fourth-grade teachers.

Form A of the ITBS has a reliability rate of .928 for reading and .870 for mathematics. The validity of ITBS is influenced by the student population, content standards, and instructional practices of the district. The district in this study has determined that ITBS is a valid assessment of the district's curriculum.

The Rigby provides 30 levels of unfamiliar texts for grades K-5. These texts have been field-tested with students to ensure the suitability and readability of the texts for a particular level. The Rigby is standardized in its administration and scoring. Thus, teacher subjectivity
is decreased.

Data Analysis

Behavior data were compiled from each of the behavior sources (RBPC, conduct grades, discipline referrals, and social work referrals) according to the following student groups: eligible for a transition program and participated (TP), eligible for a transition program and did not participate (TP Eligible), and not eligible for a transition program (Traditional). The measurements used and criteria for behavior problem identification are summarized in Table 2.

Table 2

Measurements and Criteria Used For Identification of Overall Behavior Problem

<table>
<thead>
<tr>
<th>Behavior Measurement</th>
<th>Indicator of Behavior Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revised Behavior Problem Checklist</td>
<td>A score in at least one subscale that is 1 standard deviation or more above the mean.</td>
</tr>
<tr>
<td>Report Card Conduct Grades</td>
<td>A semester grade of &quot;needs improvement&quot; in one or more conduct areas.</td>
</tr>
<tr>
<td>Discipline Referrals to an Administrator</td>
<td>One referral or more during a school year.</td>
</tr>
<tr>
<td>School Social Work Services</td>
<td>Participation in school social work services, for any length of time during a school year.</td>
</tr>
</tbody>
</table>

A student who does not have any indication of behavior problems will be categorized as having displayed appropriate behavior. A student with 1-2 behavior problem indicators will be classified as a mild to moderate behavior concern. Three or more behavior indicators will demonstrate that the student was a serious behavior concern.
Academic data were placed in rank order to organize the enrollment groups. The mean, standard deviation, significance levels, and effect sizes were computed for the academic achievement of each group. The basis for comparison was same-age peers.

ANOVA was used to analyze parametric data gathered from the ITBS, Rigby, Discipline Referrals, RBPC, age, and attendance. Chi-square tests were used to analyze frequency measures such as conduct grades, behavior problem identification, education levels of the parents, preschool/day-care experience, school social work services, gender, remedial reading services, and retention rates.

Organization of the Rest of This Study

Chapter Two contains a review of relevant research and literature. The review examines issues related to formal school entrance. The relationships between responses to student failure, school-age interventions, and transition programs is explained. Chapter Three provides detailed information related to research design and methodology. Data are described and analyzed in Chapter Four. Conclusions based on data analysis, recommendations for education practice, and suggestions for further research are given in Chapter Five.
Chapter Two: Review of Related Literature and Research

The purpose of this study was to examine the long-term academic and behavior outcomes that Developmental Kindergarten (DK) and Pre-First (PF) programs have on at-risk students who have been removed from their same-age peers and given an alternative curriculum. The findings of this study should assist education leaders in responsible decision-making.

Eccles and Roeser (as cited in Eccles, 2004) stated that the interactions within school settings are multi-leveled and interconnected. The relationship between these different levels may advance or hinder student success either directly or indirectly. Based on this framework, this review of literature and research addressed some of the relationships that exist between the student, classroom, and school. These complex interactions influence all students and the success of intervention programs for at-risk students.

Kindergarten Attendance

Kindergarten programs in the United States began in the mid-1800s. At that time, kindergarten existed in two forms: publicly financed for low-income children and privately run tuition-based programs (Galley, 2002). Initially, teachers taught kindergarten in the morning and visited students' homes in the afternoon. In the early 1900s, there was a movement to offer more kindergarten programs in the United States. The intention of this movement was not to make kindergarten attendance mandatory, but rather to mandate that districts offered kindergarten programs as a choice (Galley, 2002). During World War II kindergarten was shortened to a half-day program due to a shortage of teachers, limited building space, and a growing birth rate (Oelerich as cited in Karweit, 1994).

In 2002, K attendance was required in only 13 states (Galley, 2002). As of 2004, the
United States still did not have uniform policies about K attendance and implementation (DeCesare, 2004). School districts in at least 41 states offered K programs. Fifteen of the 41 states required that half-day programs be available and 9 states required that full-day programs be offered. In nine states there is no mandate to offer any K program, so the decision is left to district leaders (Council of Chief State School Officers as cited in Finn & Pannozzo, 2004).

Despite this lack of compulsory attendance, some kindergarten attendance in the United States is almost universal, but such attendance may not be all day, every day. In 2004, approximately 98% of all five-year-olds in the United States were enrolled in a kindergarten program (DeCesare, 2004). When kindergarten attendance is common practice in a district, expectations for all students are likely to rise. For example, first grade teachers will begin to assume and expect beginning students to exhibit academic skills that were previously taught in first grade (Shepard & Smith, 1988). As a result, more and more children are being labeled by teachers as unready for kindergarten and first grade (May & Kundert, 1993).

The increasing universality of kindergarten attendance has not led to a uniform kindergarten experience. Kindergarten programs vary in focus (academic or developmental), length of day, requirements for entrance, and so on. (Karweit, 1994). Educators who are concerned with enhancing the lives of children must also be concerned with the short-term and long-term outcomes that these program differences produce.

**Student-Level Effects**

Students enter formal schooling with various backgrounds and experiences. The development (i.e., physical, emotional, social, cognitive) of children is individualized and unique. For example, one kindergarten child may separate quickly from his mother and
Transition Programs 20

engage in play with his classmates. In contrast, a child of the same chronological age may cling to his mother, cry, and beg to go home. Students who exhibit behaviors that differ from behaviors commonly associated with other students of the same chronological age are often categorized as at-risk.

Sameroff and Chandler (as cited in Jimerson, Anderson, & Whipple, 2002) proposed that educators use a transactional model when considering the interplay between individuals and their environments. These interactions impact subsequent interactions in an ongoing manner. Thus, a child's developmental history and experiences are vitally important to understanding the impact of education on the child. "Rather than suggesting that grade retention inevitably leads to highly associated outcomes in a direct and causal manner, the transactional perspective reminds us to consider the complex interplay of individual and experiential influences across time" (Jimerson, 1999, p. 248).

The experiences a child gains from participation in an intervention program may impact subsequent interactions and outcomes. One challenge is to implement early intervention programs that address the complex interactions that exist between student characteristics, the classroom setting, and the school environment.

Experiences Prior to Kindergarten

Student characteristics are influenced by experiences and opportunities that children encounter from birth to kindergarten. These experiences can vary greatly and be affected by numerous factors such as race, socioeconomic status (SES), and parenting skills. Research indicates that children's experiences prior to formal schooling can influence readiness for school and future school success (e.g., Hart & Risley, 2003; Ramey & Ramey, 2004).

Hart and Risley (2003) noted that early intervention programs often produce temporary
benefits. In an effort to explain why vocabulary gains obtained in preschool did not persist until kindergarten, Hart and Risley observed 42 families for 1 hour per month over 2 1/2 years (beginning when children were 7-9 months old). By 34-36 months, the children had vocabularies that were very similar to the averages of their parents' vocabularies. Results were also related to SES. Children from families on welfare had the smallest vocabularies and added words more slowly than did children from professional families.

We learned from the longitudinal data that the problem of skill differences among children at the time of school entry is bigger, more intractable, and more important than we had thought. So much is happening to children during their first three years at home, at a time when they are especially malleable and uniquely dependent on the family for virtually all their experience, that by age 3, an intervention must address not just a lack of knowledge or skill, but an entire general approach to experience (Hart & Risley, 2003, p. 5).

Ramey and Ramey (2004) also found that a child's experiences prior to kindergarten can influence future successes. Children who enter school developmentally delayed advance about 9 months developmentally in their cognitive and language skills during a school year. This gain is not sufficient to allow these students to completely "catch up" to their non-delayed peers. The summer months (when school is not in session) serve to further increase learning differences between high-risk students and students who are not at-risk.

The Abecedarian Study was a randomized, controlled study that examined the usefulness of early childhood education for high-risk (low SES, low maternal levels of education, single parent homes, etc.) children. Children in the treatment group participated in an early childhood center program (5 days a week, 50 weeks per year) from 6 months of age until
kindergarten entry. Benefits from 18 months of age until 21 years of age favored the
treatment group over the control group: higher IQ, higher achievement in reading and math,
more years of education, decreased special education and retention rates. The results of the
Abecedarian Study have been replicated in at least nine other studies (Ramey & Ramey,
2004).

The researchers of the High/Scope Perry Preschool study also examined the experiences
of children prior to kindergarten. This study began in the 1960s and involved 123 at-risk (low
parental education and low socioeconomic background) African American children. Students
were randomly assigned to a control or treatment group. The treatment consisted of the
following: a center-based program for 2.5 hours per day, five days per week with a child to
teacher ratio of 5:1; home visits; and parent meetings (Belfield, Nores, Barnett, &
Schweinhart, 2006).

In comparison to students who did not experience the program, the High/Scope
preschoolers were better prepared for school, produced greater achievement tests scores in
middle and high school, were more likely to graduate from high school and own a home, and
less likely to be on welfare and be arrested (Schweinhart & Weikart, 1999). At the age of 40,
former High/Scope students were more likely to be employed, receive higher job earnings,
and have lower crime rates than did students who did not participate in the program (Belfield,
Nores, Barnett, & Schweinhart, 2006).

Readiness for School

The increasing universality of kindergarten attendance, political accountability pressures,
and demands from middle-class parents have created an academic focus in kindergarten that
is particularly detrimental to students who are at risk of failure (Shepard & Smith, 1988).
Concern for disadvantaged students and a growing demand for accountability in education have increased the emphasis on the screening of young children (Gredler, 1997). School personnel use screening instruments in an attempt to ensure that students are ready for the school experience. Students may be labeled as at-risk of failure based on screening instruments (administered prior to kindergarten) before they have even had an opportunity to encounter the curriculum or school environment. Some researchers have argued that an emphasis on child readiness negates the school's responsibility to educate all students who are of legal age to enter school (Smith, 1999; Shepard, 1990; Bredekamp, 1990).

Two benchmarks for readiness are commonly used: chronological age and developmental age (Freberg, 1991). These readiness benchmarks are dependent on the situation and perspective of those using the term (May & Kundert, 1997). The concepts of chronological age and developmental age are evaluated differently between states and even between individual school districts (especially developmental age).

The use of a screening instrument to assess readiness is related to the maturation approach. Maturation follows a medical, biological view that is commonly associated with the Gesell Institute of Human Development (May & Kundert, 1997). This approach emphasizes time to develop and mature as a decisive factor in the readiness and success of a child (Gredler, 1997). Children must progress through certain developmental prerequisites in order to be successful in school. These developmental prerequisites cannot be rushed. Rather, future successes depend on providing children the “gift of time” that is needed to mature (May & Welch, 1984). “This theory is in opposition to the concept of early intervention, since it does not prescribe a program based on the child's specific need; but assumes that waiting a year in a less demanding environment will make the child ready”
The interactionist approach to readiness is dependent on and stimulated by the learning environment. School success does not depend on the biology of the child; behavior and achievement can be guided and enhanced through interactions at school (May & Kundert, 1997).

Readiness can also be defined using a social constructivist model. Social constructivism includes social and cultural interactions; a child's environment helps to define readiness. Therefore, readiness may vary in different settings (Meisels, 1999). External evidence of learning signifies readiness in the empiricist/environmental approach. Specific skills are needed for school success, and these skills must be taught (Meisels, 1999). Educators' beliefs about readiness and child development will influence the school structure and the students' experiences: school entrance requirements, student expectations, individualized learning needs, and interventions.

At-Risk Students

Historically, the concept of risk has been associated with the medical profession. Risk implies that not only is a negative outcome likely, but also that the negative outcome can be prevented. Educators have adopted this medical concept of risk and have applied it to the identification of students who have the potential to experience school failure (Rak & Patterson, 1996; Swadener & Lubeck, 1995). Richardson et al. (1989) cautioned that a medical model for at-risk students results in identification and treatment that...

... limits educators' way of thinking about these phenomena. Since the problem is believed to be inherent in the student, then the search for the cause is limited to the characteristics of the students themselves. Characteristics of our society and school
are left unexamined. (p. 6)

The concept of at-risk affects students from the onset of their schooling. Students are exposed to policies, practices, and interventions that are directly related to how school district leaders and teachers have defined the concept of at-risk. Therefore, it is important to examine the underlying assumptions of this term and identify how these assumptions are impacting children.

For example, if risk factors are conceptualized primarily as individual attributes which may lead to learning difficulties, earlier and “more effective” screening tools are often advocated, as are inoculation style early intervention programs designed to minimize later educational problems. This type of definition often embodies a deficit model, which ascribes deficiencies to the individual and family. The emphasis within this framework, then, is upon getting the child “ready” for school, rather than getting the school “ready” to serve increasingly diverse children. In contrast, if risk factors are viewed as largely structural (e.g., environmental and societal), far different strategies are likely to be advocated for children and families. (Swadener & Lubeck, 1995, p. 18)

Despite interest in the topic of at-risk and the widespread use of the term, it is not a precise term and its meaning differs considerably in practice (May & Kundert, 1997; Slavin, 1989). By 1984, Honig had identified risk characteristics based on biological, demographic, and environmental factors. Biological risk factors include birth defects, low-birth weights, and other health related issues. At-risk students are also identified by demographic factors such as minority status and low socioeconomic status (SES). Environmental risk factors are defined as situations and circumstances that a child may experience that disrupt the care-
giving process between the child and parent: family disorganization, minimal parent education levels, violence and abuse.

School experiences may also cause disruptions that can lead to environmental risk factors. For example, being placed in a classroom in which the class-size varies from the child's previous class-size placement (especially from a small class to a larger class) is a disruption that produces measurable negative results (Blatchford, Bassett, Brown, Martin & Russell, 2004). This disruption affects the duration and intensity that is needed for long-term outcomes of small class-size (Achilles, 2005). Disruptions in the school environment can lead a child to be “at-risk” for academic difficulties.

Finn originally identified at-risk characteristics based on two categories (1993) and later expanded these to three categories (2006): status risk factors, behavioral risk factors, and academic risk factors. Status risk factors are demographic or historical in nature. These attributes are often used to identify large groups of people and are difficult or impossible to alter (they are not administratively mutable), such as race, socioeconomic status (SES), or language. Behavioral risk factors are characterized by a lack of engagement in the school's academic program. Behavioral risk factors are more easily altered by interventions than are status risk factors. Students need to learn to demonstrate behaviors that show participation in the school environment (e.g., attending school, paying attention to teachers, completing work) and therefore decrease behavioral risk factors. A student who is able to sustain participation in the academic aspects of school is more likely to experience school success than is a student who is disengaged (Finn, 1993). Academic risk factors “are less-than-successful outcomes at one point in a school career that can interfere with chances of success at later stages” (Finn, 2006, p. 1). Academic risk factors may include outcomes such as poor
grades, low test grades, and dropping out of school.

Richardson, Casanova, and Guilfoyle (1989) stated that dynamic changes and interactions should be used to define and understand at-risk students. Identification of “at-risk” includes more than student characteristics and backgrounds. At-risk is a reciprocal relationship with the school environment. Each child brings unique characteristics (demographic characteristics, family influences, prior learning experiences, etc.) to the classroom and school setting. The interaction of these characteristics with peers, teachers, materials, and other school factors may place a child at risk for academic difficulties.

Using readiness screenings, school personnel attempt to identify these “at-risk” students. However, the reciprocal interaction between the child and the school environment is often not considered (May & Kundert, 1997). Johansson (as cited in Southard & May, 1996) noted that it is logical that school readiness depends on the demands that the school places on the child. Failure may not be solely because of a child's development. The same child may have succeeded in a different classroom with a different structure, different teaching methods, a different teacher, and different peers.

Causal relationships between risk factors and students' at-risk status are difficult to establish. Therefore, risk factors are often associated with student outcomes (Donmoyer & Kos, as cited in May & Kundert, 1997). Risk factors contribute to early outcomes of school failure that, over time, can lead to more advanced and detrimental forms of failure (Finn, 1993). For example, students identified as at-risk are likely to display learning problems, perform below grade level in academics, develop emotional or behavioral problems, and eventually drop out of school (McWhirter et al., as cited in May & Kundert, 1997). Therefore, it is imperative that educators learn to identify and change risk behaviors early in
a student's school career. The longer dysfunctional behaviors persist, the harder it is to change the behaviors and overcome the effects (Finn, 1993). In this study, at-risk was defined as students who have the potential to experience difficulties in school because of developmental immaturity or learning problems.

Classroom-Level Effects

The following is an examination of the research and literature related to the classroom environment. Teacher beliefs, developmentally appropriate practices (DAPs), and small class-sizes are characteristics within the classroom setting that are likely to impact students and influence intervention programs.

Influence of Teacher Beliefs

Teachers play important roles in the environment of a child. Beliefs and expectations that teachers have about children may have long-term effects on student success (Meisels, Steels, & Quinn-Leering as cited in Rimm-Kaufman, Pianta, & Cox, 2000). Shepard and Smith (1988) examined teacher beliefs and practices about kindergarten readiness and retention. They concluded that teachers' beliefs about developing readiness are related to their beliefs about the interaction between the child and environment. These beliefs dictated teachers' perceptions about the amount of control that they possessed to influence the child's development. Beliefs about readiness were also associated with the teachers' beliefs about retention.

Rimm-Kaufman, Pianta, and Cox (2000) surveyed a large sample (N = 3,595) of teachers about learning development and kindergarten transition practices. High rates of perceived problems were related to high minority school composition and high poverty levels. Nonminority teachers reported higher rates of adjustment problems among children
such as following directions, lack of preschool experience, immaturity, and disorganized home environment for the minority students than did minority teachers.

It is reasonable to conclude that beliefs about child development, perceptions of one's ability to influence this development, and beliefs related to school structures will influence practices displayed by teachers in their classrooms. Teachers in low-retaining schools based classroom practices on the perception that student learning was not fixed in developmental stages, thus student learning could be influenced. These teachers addressed individual student differences in more flexible and less permanent ways than did teachers in high-retaining schools. Thus, low-retaining teachers accepted the possibility that students may have individual curriculum needs and unpredictable patterns of learning growth (Shepard & Smith, 1988). The acceptance of diverse learning needs and varying rates of learning reflect a school setting that is ready to accept all children.

_Developmentally Appropriate Practices (DAPs)_

Educators may address the learning needs of young children and those identified as unready by implementing developmentally appropriate practices (DAPs) in the classroom. The National Association for the Education of Young Children (NAEYC) advocates for developmentally appropriate practices as a way to meet the educational needs of all children and thus address teacher and parent concerns of "unreadiness." Although the NAEYC has established guidelines to define DAP, the concept of DAP is broad and sometimes criticized for its failure to provide guidance about what should be taught (Spodek & Brown, 1993).

Developmentally appropriate practice must be based on three kinds of knowledge: learning and child development, individual children and families, and social and cultural contexts in which the child lives (Bredekamp & Copple, 1997). Teachers who implement
DAPs are aware of the continuum of learning in each curricular area and adapt instruction to meet the varying needs of all students. Therefore, curriculum is implemented at different paces to enable all children to eventually achieve competence. Children who struggle academically are given individualized support that is focused on the area(s) of difficulty (Bredekamp & Copple, 1997). Developmentally appropriate practices also reflect an understanding that the domains of development (physical, social, emotional, and cognitive) are interrelated. Failure to attend to all aspects of a child's development may lead to a lack of success in school (Bredekamp & Copple, 1997).

Eccles (2004) extended the concept of developmentally appropriate to incorporate the connection that exists between the development of the student and the development of the school environment. Students' success must be understood within the context of the schools which they attend. As students experience developmental growth, the instructional, organizational, and social processes within the school environment should also change and develop to meet the ongoing needs of students. Although this concept was designed to address adolescent issues, the need for school personnel to create developmentally appropriate settings is also critical to the success of young children.

Readiness for school depends to some degree on the demands that the school personnel place on the students (Southard & May, 1996). The DAPs represent an approach to readiness that requires educators to adapt to the needs of students, rather than creating programs and practices that require students to adapt to schools. Large numbers of children will continue to be identified as unready for the next grade or as having learning problems until school personnel begin to use diverse instructional strategies and allow students to take varying amounts of time to master the same material (May et al., as cited in Southard & May, 1996).
Class size

Developmentally appropriate practices and the implementation of low class sizes are practices within the school environment that can be used to improve student achievement. These practices do not require that at-risk students be identified before the practice is implemented. The intention is to provide anticipated benefits of small classes to all students, thereby decreasing student failure and improving student achievement levels of all students.

The STAR (Student/Teacher Achievement Ratio) study was a large-scale (more than 11,600 students), longitudinal, randomized experiment (Finn, Gerber, & Boyd-Zaharias, 2005). Students and teachers were randomly placed in small classes (13-17 students), regular-sized classes (22-25 students), or in regular-sized classes with a teacher and a full-time teacher aide. Students remained in the same size class for grades K-3. All students benefited from small class size on cognitive and non-cognitive measures. However, positive outcomes were the most significant for minority, low-income students in K-3. These students especially benefited in long-term outcomes (Word et al., 1990).

The STAR researchers established that participants in small classes experienced long-term positive academic outcomes. Students who attended small classes performed better academically on achievement measures in every grade (at least through grade 12) than did students in regular-sized classes or classes with a teacher and an aide (Finn, Gerber, & Boyd-Zaharias, 2005). The strength and duration of these outcomes were greater for students who started early and remained in a small class for more than 1 year. Students who participated in a small class for one year had a 1.2 month reading advantage over their randomly-assigned peers who participated in a regular-sized class. The advantage increased to 2.8 months after 2 years and 4.4 months after 3 years in a small class (Finn & Achilles, 1999). Participation in
small classes for 3-4 years in the early grades also increased the likelihood of low SES and/or minority children taking college-entrance exams (e.g., SAT, ACT), participating in advanced courses and graduating from high school (i.e., reducing grade retention and dropping out of school) (Finn, Gerber, & Boyd-Zaharias, 2005; Finn, Fox, McClellan, Achilles, & Boyd-Zaharias; Krueger & Whitmore, 2001).

The superintendent of the school district used in this study advocated for small class sizes, especially in the elementary grades. When compared to the STAR definition of small classes (13-17), attempts to create small classes in this district have been limited. Class sizes for five years (2000-2005) were calculated. The transition programs (DK and PF) had small class sizes. The five-year average for both programs was a class size of 14. The kindergarten program had small classes two of the five years (16 and 17 students). The kindergarten class size average from 2000-2005 was 18. Class sizes for grades 1-4 ranged between 20-25 students, thus not meeting the requirements of duration (at least 3 and preferably 4 years) and of intensity (all-day, every day in a small class) required for long-term effects of small classes (e.g., Achilles, 2005; Finn & Achilles, 1999; Finn, Gerber, & Boyd-Zaharias, 2005).

The DK and K classes had a teacher and a teacher aide. DK students had a teacher aide present in their classroom most of the day (4-6 hours per school day). Kindergarten classrooms had a teacher aide present for only 1-2 hours per day. Teacher aides were not present in any other regular education classrooms. The results of the STAR study indicated that overall, attending class with a full-time teacher aide may have negatively influenced academic performance in grades K-3 and had no significant effects in later grades (Finn, Gerber, Achilles, & Boyd-Zaharias, 2001). Therefore, if increased academic achievement is the goal, adding an aide to the classroom is not an effective alternative to lowering class size.
The presence of an aide in one of the transition programs (DK) and not in the other (PF) conceivably could have influenced student outcomes, but this concept was not addressed in the present study. (The hypothesized difference would be a negative influence on DK outcomes).

Ramey and Ramey (1998) proposed that to produce sustainable results, specific characteristics must be present in early intervention programs. Recommendations for effective implementation of small classes are based on the work of Ramey and Ramey: duration (through at least grade 3, preferably grade 4), intensity (all day, every day), and random assignment are critical to obtaining strong, enduring outcomes (Finn et al., 2005). Although the DK and PF programs in this district are an early intervention, several of the critical elements that are needed to achieve favorable results associated with small classes and effective early interventions are missing. Consistent small class size existed only in the intervention grades (DK and PF), not in subsequent grades. All day, every day intensity was implemented only in the PF program: DK was all-day, alternate day (K also followed this schedule).

Random assignment was also not a component of the transition programs in this study. The removal of older students from the DK classes and the inclusion of only students with the lowest reading scores (from the K classes) in the PF class created homogeneity within these intervention programs. The K classes were more heterogeneous than the transition program classes and were therefore more likely to engage in positive activities that result from random assignment: peer tutoring, problem-solving, student-to-student cooperation (Word et al., 1990).

The examination of academic and behavior outcomes in this study does not directly
address duration of small class size, scheduling differences (intensity), or the range of ability levels (or lack of). However, the possible impact of these factors on student achievement and parent placement decisions could be examined in a larger study.

Class size is a foundation for two commonly used interventions, Success For All (SFA) and Reading Recovery (RR). These interventions use small classes as part of their program. When a program uses multiple programs it is hard to determine the effects of each program component. Therefore, it is reasonable to wonder what gains associated with SFA and RR may be attributed to the effect of small class size (Achilles, 1999, p. 78).

**School-Level Effects**

Eccles (2004) defined school-level organizational features as school climate, sense of community, curricular tracking, start and dismissal times, and extracurricular activities. School-level effects in the framework for this review of literature and research include practices that occur throughout the school building that influence the eligibility and success of kindergarten students: redshirting and length (intensity) of K programs. The effects of school-level practices are often evident in classroom practices and therefore directly and indirectly influence students. Transition programs are also a school-level effect. Intended purposes, a summary of current research, and reasons for transition programs are presented later in this review.

**Redshirting**

In the 1980s, early childhood educators began to notice that an increasing number of parents were delaying their child's entry into kindergarten. This practice suggests that students must display readiness skills before entering school rather than acquiring these skills during kindergarten. The "gift of time" or delayed entry is the only way to acquire this
readiness before kindergarten entrance. Thus, the intention is that the student will experience more academic success than would have otherwise been achieved without delayed entry.

Students born close to the cut-off date for entrance are seen as especially good candidates for this practice known as redshirting or holding out. These students tend to be younger boys (Gay, 2002; Graue & DiPerna, 2000). This coincides with the common assumption that boys are more immature than girls at an early age and thus unready or less ready for school.

The reasons why parents voluntarily choose to participate in this practice may vary. Parents may delay the start of school for their student because of concerns related to readiness (Graue & DiPerna, 2000). Critics argue that parents’ claims to provide an extra year to mature may hide their true intention, which is to give their child an academic or athletic edge over his/her peers (Viadero, 1998). Parents may also be influenced by community perceptions of child development and the role of adults in fostering that development. The decision to redshirt a child may further be influenced by issues of childcare. The additional year of childcare involved in redshirting is a luxury that many families cannot afford. The number of students who experience redshirting can vary greatly between communities (Graue & DiPerna, 2000).

Educators may view redshirting as a cost effective way to reduce differences in readiness (Graue & DiPerna, 2000). However, it is important to evaluate if this anticipated reduction in readiness differences produces outcomes that benefit students. One would expect that students who have been redshirted will have fewer placements in special education and higher achievement than do their same-age peers who did not delay school entry. However, the probability of special education placement increases for boys who are old-for-grade,
regardless of whether they were retained or redshirted (Byrd et al., 1997; May & Kundert, 1995). Special education placements of redshirted students may increase because students are denied the opportunity to receive early diagnostic and intervention support (Graue & DiPerna, 2000). The achievement of redshirted students and same-age peers who entered school on time is similar (Cameron & Wilson, 1990; Graue & DiPerna, 2000). Any achievement gains exhibited by redshirted students disappeared by second grade (Meisels, 1992).

Achievement gains of redshirted students were likely not sustained because the practice of redshirting does not meet the three conditions that have been shown to be necessary for enduring effects: early intervention, intensity, and duration (Ramey & Ramey, 1989; Finn and Achilles, 1999; Finn et al., 2001). Redshirting may be used by some school personnel as an early intervention. However, redshirting provides no intensity or duration because no services are provided to students (e.g., instructional, remedial, or diagnostic services). Redshirting is simply a practice where students continue in the same environment (home, daycare, etc.), one more year until school entry. Student exposure to the same environment that he/she has encountered since birth may not provide the student with the experiences needed to advance his/her developmental skills (Hart & Risley, 2003).

Unintended consequences of an intervention should also be examined. Students who are redshirted are old-for-grade. Research indicates that old-for-grade students are more likely to drop out of school and experience more social difficulties in later schooling than are their grade-level peers who are not old-for-grade (Byrd et al., 1997; Grissom & Shepard, 1989).

Redshirting and transition programs are based on similar intentions: to increase the readiness and future successes of students who are identified as potential failures for
kindergarten or first grade. Intervention programs that provide children with the "gift of time" are in opposition to the concept of early intervention, since it does not prescribe a program based on the child's specific need (May & Welch, 1984).

**Duration and Intensity of Kindergarten Programs**

Student achievement has been shown to be a result of interactions between the classroom (including teacher expectations), the school environment, and student characteristics. Therefore, it is important to examine the benefits of various approaches to time spent in kindergarten: full-day every day, full-day on alternate days, and half-day every day. Early intervention programs are more likely to be effective when the program starts early in the child's development and continues with intensity. The intervention needs to include instruction and experiences that occur all day, every day (Ramey & Ramey, 1998). The STAR study adhered to the guidelines of timing, intensity, and duration. Students began small classes in kindergarten and continued in small classes every day, all day until grade 4.

It is important to examine if K students are being provided an intense program (all-day, every-day kindergarten) that will increase the likelihood of future school successes. In 2004, 60% of United States K students attended full-day programs (DeCesare, 2004). This is an increase since the 1980s, when only 30% of U.S. kindergarten students attended full-day kindergarten programs (Galley, 2002). Concerns about the quality of education and the need for childcare have led to a steady rise in full-day kindergarten attendance (Clark & Kirk, 2000; DeCesare, 2004).

Researchers have found consistent positive short-term academic benefits for all-day kindergarten programs in comparison to half-day kindergarten programs. These results were especially favorable for students from low-income or educationally disadvantaged
backgrounds (Clark & Kirk, 2000; DeCesare, 2004; Fails-Nelson, 2000; Karweit, 1992). Positive results for full-day kindergarten have also been found for students from an affluent district (Freda, 2005). When half-day and full-day programs are compared for long-term academic benefits, research results are mixed. (Finn & Pannozzo, 2004; Karweit, 1992).

Elicker (as cited in Railback & Brewster, 2002) conducted a two-year evaluation study of a Wisconsin full-day kindergarten program and examined existing research on full-day kindergarten. Elicker concluded that students who participated in full-day kindergarten consistently achieved more academic progress during the kindergarten year than did students who participated in half-day or alternate-day programs. Although the length of the school day may influence opportunities for learning, the actual use of time is of critical importance (Karweit, 1992). How are kindergarten teachers in full-day programs using this “additional” time? Meyer (as cited in Karweit, 1992) found that some half-day kindergarten programs provided more high-quality instructional time than did full-day programs.

Freda (2005) examined five classrooms in an affluent school district and concluded that teachers in full-day programs used more developmentally appropriate practices, created more activities that allowed students to construct knowledge, implemented more interventions and strategies to meet individual student needs, and provided a more balanced academic program than did the teachers in the half-day programs. More research is needed to determine if short-term findings in favor of full-day kindergarten programs (e.g., time on task) are also related to increased instructional opportunities or differences in the curriculum (Viadero, 2002).

This review of literature and research thus far has examined the interactions that exist between student, classroom, and school-level effects (See Figure 1). These relationships may promote or mitigate at-risk characteristics, influence the identification of at-risk students, and
affect the success of intervention programs. Understanding the interaction and effects of these relationships is critical to assisting students in obtaining long-term positive academic and behavior outcomes.

Influence of Education Reforms and High-Stakes Testing

The publication of *A Nation At-Risk* in 1983 prompted educators to examine the needs of at-risk children (Slavin, 1989). Task forces, school and district committees, state committees, and the media became involved in addressing this “crisis” in American education (Swadener, 1995). Since the 1990s, government accountability and standardized tests have become central components in the standards-based reform movement (Goldberg, 2005; Roderick & Nagaoka, 2005). As a result, many districts have ended social promotions (all students are promoted) and adopted retention-in-grade policies (Bali, Anagnostopoulos & Roberts, 2005).

Some retention policies are based on results from high-stakes tests: don't pass the test, don't pass to the next grade level. Roderick and Nagaoka (2005) examined the effects of retention based on high-stakes testing. Retained students continued to struggle during their retained year and were significantly more likely to be placed in special education than they were with the previous policy (retention not based on high-stakes testing). Little research exists at the present (up until May 2006) that examines the effects of retention based on high-stakes testing. Therefore, the short and long-term effects of high-stakes retention on student achievement, school engagement, and perceptions of self are unclear.

The manner in which politicians and district leaders respond to standards-based reform and legislation such as the No Child Left Behind Act of 2001, which was signed into law on January 8, 2002 (with its emphasis on testing, accountability, and measurable student
progress), will influence education as the products of these reforms and laws trickle down to the schools, the classrooms, and eventually the students.

Figure 1. Conceptual Model For the Influence of Student, Classroom, and School-Level Effects On At-Risk Student Outcomes

Sample of Interventions for At-Risk Students

At-risk interventions should be based on the assumption that at-risk children have the potential to acquire an adequate level of basic skills. Although the potential to obtain basic skills may be common, the effort needed to attain these skills varies greatly. Some children may learn basic skills through traditional classroom instruction without any other assistance. Other students may need tutoring and other special intervention services simply to attain a
basic level of competencies (Slavin, 1989).

The fact that students do fail to attain a basic level of skills is not a reflection of their ability to learn; rather, it is an indication that society is not able or willing to commit resources to the education of all students (Slavin, 1989). "The knowledge that school failure is preventable could (and should) fundamentally change the political calculus surrounding the education of students at risk of failure" (Slavin, 1994, p. 5). Educators must work diligently and purposefully to institute programs and interventions in the early grades that will promote future student success. Such programs instituted when children are young (instead of waiting until adolescence), fulfill concerns related to fairness and social justice.

A more compelling reason to help disadvantaged (at-risk) young children is based on economic efficiency. Earnings gains on returns to dollars invested in early intervention programs are as high as 15% to 17% (Heckman, 2006). A cost-benefit analysis of the High/Scope Perry Preschool program concluded that based on higher tax revenues, lower criminal justice costs, and lower welfare expenses for program participants, the benefits outweigh program costs; $12.90 is reaped in benefits for every $1 spent (Belfield, Nores, Barnett, & Schweinhart, 2006).

It is essential that educators evaluate intervention programs for effectiveness. Evaluating the impact of intervention programs through rigorous, scientific methods can be challenging. For example, ethical concerns arise if at-risk students are randomly assigned to an intervention program, while intervention is denied to a control group of at-risk students. Forcing a student to participate in an extra-year intervention, or denying such participation for the purpose of conducting a study, is extreme interference in the life of child and may prove harmful.
There is debate about how to compare intervention students who were removed from their peers (e.g., redshirting, retention-in-grade, transition program) with the students who were eligible for the intervention but did not participate. Roderick and Nagaoka (2005) argued that if the objective is to evaluate what the achievement would have been (had students not been retained), then same-age comparisons are appropriate. These compare the achievement of the treatment group against that of a control group of students who are the same age but a grade ahead. Same-grade comparisons evaluate whether it is beneficial to add an extra year of schooling: Do students learn more after completing two years of schooling (regular year of instruction plus extra year of instruction) or one year?

The researcher bias is that under all circumstances a child should learn more during two years of instruction as opposed to only one year. However, the concern with transition programs (as well as redshirting and retention-in-grade) is not that students showed progress during the extra year, but whether the progress was substantial enough to justify extending a student's school career and removing the student from his/her peers. What would the student's progress have been if he/she had not participated in the transition program, but had instead advanced to the next grade level? Based on this research objective, same-age comparisons were used in this study.

**Tutoring Projects**

The topic of tutoring (the ultimate class size of one) has received greater attention in recent years because of an increased focus on at-risk students. Tutoring programs for at-risk students can be provided from federal ChapterI/Title I funds. Reading success in the early grades is an essential foundation for success in later grades (Wasik & Slavin, 1994; Bloom, 1988). Some educators have been allotting funds to tutoring programs that target early
Common knowledge leads to the belief that tutoring should be an effective intervention. This belief can be based on Vygotsky's theory of cognitive development. Vygotsky stated that students are able to complete tasks when working with another person that they would be unable to complete when working alone. Vygotsky called this range between what the child can do alone and what the child can do with assistance "the zone of proximal development." Ideally all instruction should fall within the child's zone of proximal development. This instruction should be more challenging than the child's current level of abilities but not so challenging that the child is unable to complete the task (Wasik & Slavin, 1994).

Tutoring helps to ensure that a child is instructed at his/her zone of proximal development. Instruction is tailored to meet the child's abilities and individual learning needs. A tutor is also able to use the scaffolding strategy, which builds upon current student knowledge and abilities to develop new abilities (Wasik & Slavin, 1994). Although tutoring programs and their approaches may differ, the general role of the tutor remains consistent between programs: motivate and engage the child, assist the child in meeting the demands of the task, illustrate relevant components of the task, acknowledge discrepancies between the task and the child's current abilities, control the learner's frustration level, and model successful task completion (Wood, Bruner, & Ross as cited in Wasik & Slavin, 1994).

Anania and Burke (as cited in Bloom, 1984) investigated three forms of instruction: conventional, mastery learning, and tutoring. The conventional method uses tests only for the purpose of grading students. The subject matter is taught in a classroom with about 30 students per teacher. Mastery learning resembles conventional learning in pupil-teacher ratio and subject matter. However, mastery learning uses tests for feedback and corrective
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purposes. Students are given additional opportunities to learn and "master" the content. Tutoring utilizes mastery learning in a small-group setting of one to three students per teacher.

Anania and Burke randomly assigned students to one of these intervention methods. They concluded that tutoring produced the most favorable results. Students who participated in tutoring averaged 2 sigmas above the average student who was taught using conventional methods. This means that the average tutored student achieved scores above 98% of the students who learned under conventional conditions (Bloom, 1988). "The tutoring process demonstrates that most of the students do have the potential to reach this high level of learning" (Bloom, 1984, p. 6).

Bloom (1984) defined the "2 sigma problem": Can researchers and educators create learning conditions that will enable the majority of students under group instruction to attain the same results that are achieved under tutoring conditions? Bloom identified alterable educational variables that are most likely to contribute to the 2 sigma solution. These variables are associated with the learner, instructional material, home environment, and teaching method. Teacher expectations and beliefs may also be added to this list of variables (Rimm-Kaufman, Pianta, and Cox, 2000; Shepard & Smith, 1988). The combination of two or three variables will contribute more to learning than any one variable alone. Bloom stated that mastery learning was one variable that should be used in combination with other variables to achieve the 2 sigma effect size.

Mastery learning alone can produce an effect size of approximately 1 sigma (Bloom, 1984). When other variables are combined with mastery learning, results are at or close to 2 sigma. Mastery learning when combined with enhancement of the students' prerequisite
knowledge can produce achievement results of 1.6 sigma (Leyton as cited in Bloom, 1984). A 1.7 sigma was achieved by creating learning conditions that combined mastery learning with enhanced cues (explanations), student participation (e.g., engagement), and reinforcement (Tenenbaum as cited in Bloom, 1984). These learning conditions are characteristics of small classes. Levin (as cited in Bloom, 1984) produced a 2 sigma effect by creating learning conditions that focused on higher mental processes and mastery learning.

The effectiveness of one-on-one tutoring has been documented in research. However, such programs are costly and time-intensive. Educators need to develop effective ways to convey the positive results of tutoring to larger groups of students. The STAR study attempted to answer Bloom's 2 sigma problem by creating learning conditions (through small class size) that would approach results produced through tutoring and still be affordable. Intervention programs aimed at early childhood (early intervention) are of particular interest in this review of research and literature. Reading Recovery (RR), Success For All (SFA), and parent involvement programs are interventions related to tutoring that focus on young children.

**Reading Recovery**

Reading Recovery (RR) is a reading intervention program that was developed in New Zealand in 1976 by Marie Clay. From 1984-2004, more than 1 million American students in 49 states participated in this program (D'Agostino & Murphy, 2004). The goal of the program is to reduce the costs associated with educating students who have difficulty developing literacy skills, by helping students to develop literacy strategies that will allow them to function within an average range in their regular classrooms (D'Agostino & Murphy, 2004). Typically, students who score at or below the 20th percentile on the RR Observation
Survey of Early Literacy Achievement are eligible to participate in the program (Wasik & Slavin, 1994).

One-to-one instruction takes place daily and generally lasts for 12 to 20 weeks. A student is “discontinued” from the program when he/she is reading at an average level for his or her class. A student who has not reached an average reading level after 60 lessons is dismissed from the program and considered “not discontinued” (Wasik & Slavin, 1994). Each half-hour lesson is very structured and taught by a trained RR teacher. Reading Recovery instruction is not integrated with reading instruction from the regular classroom.

A RR lesson begins with the student reading a familiar book. The student then reads the book that was introduced the day before. While the student is reading, the teacher records any student errors. Magnetic letters are then used to work on letter identification. The student then writes a sentence or short story, cuts the writing into pieces, and reassembles it. The lesson concludes with the teacher assisting the student to read a new book (Wasik & Slavin, 1994). Despite the structured outline of each lesson, the program is designed to be different for each child, based on child-teacher interactions (Pinnell, 1989).

Reading Recovery studies in New Zealand focused exclusively on discontinued students, that is, those who successfully completed the program. United States research has examined both discontinued and not discontinued students (Wasik & Slavin, 1994). The debate regarding the effectiveness of RR has been fueled by the lack of rigor demonstrated in some studies of the program. Reading Recovery can be a difficult program to evaluate given its student selection and attrition policies, challenges of locating a comparison group, reliance on outcome measures that were designed for RR, and inherent problems related to measuring first-grade achievement levels (D'Agostino & Murphy, 2004).
Pinnell, Lyons, DeFord, Bryk, and Seltzer (1994) compared the effectiveness of RR to three other intervention models (a program similar to RR with partially trained teachers, a skills-based individual intervention, and group instruction by a RR teacher). Students who received RR instruction in the traditional one-to-one setting performed significantly better on all measures than any of the other intervention groups and the control group. The RR students maintained these results until at least the beginning of 2nd grade.

Positive results have been found in fifth and sixth grade for RR students. The RR students performed significantly higher on reading and comprehension tests than did students who did not require the intervention (these students had average or below average reading scores). The RR students on average scored more than one year ahead of the comparison group on reading and comprehension tests, even though the RR students initially scored lower than did the comparison group (Moore & Wade, 1998).

D'Agostino and Murphy (2004) conducted a meta-analysis of 36 RR studies. Discontinued and not discontinued students appeared to have larger pre-post differences on all six RR observation measures than low-achieving non-participating students. Discontinued students had larger pre-post differences than regular students, and in some cases so did not discontinued students. Discontinued students surpassed the achievement levels of regular students on three of these measures.

On measures not related to RR, the discontinued students scored significantly lower than regular students. Few studies in this analysis included long-term follow-up results. However, when the sustainability of RR effects was examined at the end of second grade, the results indicated that discontinued students performed at the same level as regular students, and not discontinued students surpassed low-achievers on standardized achievement tests. These
results seem to suggest that a lasting effect for reading skills was sustained to at least the end of second grade.

Researchers in Ohio conducted two longitudinal studies of RR. The results indicated that RR students substantially outperformed control students on almost all measures (Pinnell, Fried, & Estice, 1990). However, by third grade all of the not discontinued students (dismissed unsuccessfully from program after 60 lessons) had reading outcomes that were below the level of their class and substantially lower than the control group (Wasik & Slavin, 1994). Despite criticisms of the program, studies have found that RR has positive effects on reading achievement. “To date, the bulk of available evidence indicated that RR has had positive effects on participating students across outcomes designed for the program and external to it, and that results of more rigorously designed studies seemed to converge with this conclusion” (D'Agostino & Murphy, 2004, p. 35-36).

Success For All

Success For All (SFA) is a comprehensive reform program for elementary schools serving primarily at-risk children. The program was developed at Johns Hopkins University by Slavin and his colleagues. SFA emphasizes prevention, early intervention, language arts, professional development, parent involvement, and small groups of students. The goal of the program is to ensure that virtually every student will reach the third grade on time with adequate basic skills that can be built upon for subsequent grades.

The main elements of the program are one-to-one daily tutoring for struggling students; a school-wide SFA reading curriculum; regrouping across grades for homogeneous reading groups; reduced class-sizes in language arts; preschool and kindergarten programs that emphasize language development, readiness, and self-concept; assessment results (every
eight weeks) that are used to guide instruction; a family support team; and a program facilitator (Slavin, 2004).

Success For All has been evaluated in 7 schools (the poorest in their districts) by creators of SFA. The researchers concluded that on average, students who participated in SFA since first-grade (a maximum of 3 years program participation) were at or near grade-level, while their matched peers were far below grade-level. Effects were especially large for students in the lowest 25% of each class. Retention rates and special education placements were significantly reduced in SFA schools (Slavin et al., 1991).

A study conducted by researchers who were not affiliated with Johns Hopkins University attempted to replicate the studies conducted by Slavin and his colleagues. SFA was implemented in kindergarten through second-grade in an inner-city school. Outcomes were measured during the first year of program implementation. Kindergarten reading test results indicated that SFA students had significant advantages in 2 out of 3 tests (word identification and word attack) over non-participating SFA students (matched group in a neighboring school). The lowest-achieving 25% of SFA first graders scored significantly better than non-participating students on silent reading tests. Limited or no overall differences were found for the entire first and second-grade samples. SFA reading outcomes decreased as the grade-level increased. However, first and second graders had to adjust to a new program that differed from their previous instruction and they were only exposed to SFA for one year (Ross & Smith, 1994).

The effectiveness of SFA has been challenged by some researchers. This should come as no surprise, especially when most SFA studies were conducted by creators of the program. Pogrow (2000) has raised several concerns related to bias and methodological issues. Pogrow
noted that Slavin has critiqued competing programs using evaluative methods that favor SFA. Pogrow also stated that comparisons of SFA students after grade 3 (from the highest poverty schools) are reported in comparison to students in matched schools with no mention of actual achievement. In some cases the actual achievement of SFA students was several years below grade level.

The desire to impact students favorably and the costs of SFA implementation (between $261,060 and $646,500 per school) warrant that more evaluative studies be conducted (Pogrow, 2000). Studies of intervention programs that are quality controlled and peer-reviewed will add to the body of information that educators can use to make informed decisions that benefit students.

*Parent Involvement*

There is a growing consensuses in academic and policy-making arenas that parent involvement plays a key role in student success (Mattingly, Prislin, McKenzie, Rodriguez, & Kayzar, 2002). It is important to understand how, and to what extent, parent involvement impacts student achievement. "Unfortunately, the mountain of material about parent-school partnerships yields few if any empirical data about the impact of parental involvement on students' academic achievement" (Finn, 1998, p. 20). However, studies do indicate that parent involvement is correlated with higher academic achievement, improved student attendance, and positive student attitudes and behaviors (Epstein & Rodriguez-Jansom, 2004; Epstein & Sheldon, 2002; McWayne, Hampton, Fantuzzo, Cohen & Sekino, 2004).

Parent involvement at home is also consistently related to school performance: organizing and monitoring the child's time, helping with homework, discussing school matters with the child, and reading at home (especially for younger children). Studies of
student resilience indicated that these behaviors may contribute to the academic success of students who face adversity related to poverty, minority status, or native language (Finn as cited in Finn, 1998).

Many educators and creators of education reforms and intervention programs seem to believe that parental involvement is not only correlated with student achievement but actually influences that achievement (Mattingly et al., 2002). Mattingly et al. (2002) analyzed 41 studies in which researchers evaluated K-12 parent-involvement programs. The purpose was to assess conclusions that stated that such programs were an effective means of improving student successes. Mattingly et al. concluded that these evaluations had serious flaws related to design, method, and analyses, which invalidated their positive conclusions. “There is no substantial evidence to indicate a causal relationship between interventions designed to increase parent involvement and improvements in student learning” (Mattingly et al., 2002, p. 572).

White, Taylor, and Moss (1992) examined 172 research studies involving parents in early intervention (pre-kindergarten) programs. No evidence was found that parent involvement (as identified in the studies reviewed) produced more effective outcomes. This conclusion merits attention because it was the result of rigorous evaluative methods (Mattingly et al., 2002). Mattingly et al. cautioned that these results do not suggest that parent involvement programs are ineffective, rather that the evidence used to support such claims is not justified. Common sense leads to the conclusion that parents play an integral role in their children's lives. However, the extent and means by which this relationship impacts student outcomes has yet to be determined.

Parent involvement is a concept that is typically associated with children who attend
school. New evidence suggests that to evaluate the influence of parent involvement on student achievement, the involvement of the parent with the child prior to school entry should also be considered. The knowledge and experiences that children bring to school as a result of interactions with parents can influence long-term student achievement (Hart & Risley, 2003; Ramey & Ramey, 2004).

Transition Efforts

More and more children are being labeled by educators as unready for kindergarten and first grade (May & Kundert, 1993). Transition programs have been promoted as a way to help students gain the skills needed to successfully complete the curriculum. Curriculum changes have directly impacted young students. These changes have increased the difficulty of the curriculum content and have required younger children to demonstrate skills that were previously required of older children.

Students who are considered unsuccessful may face the possibility of being retained in grade. Grade retentions do not produce long-term academic success (Niklason, 1984; Hagborg, Masella, Palladino, & Shepardson, J., 1991; McCombs-Thomas et al., 1992; McCoy & Reynolds, 1999; Roderick & Nagaoka, 2005). Research continues to mount that not only is retention not beneficial, it is harmful (Niklason, 1984; Roderick, 1995; Owings & Magliaro, 1998; Hong & Raudenbush, 2005). In many districts, educators have attempted to reduce retentions by implementing transition programs. Transition programs such as DK and PF are provided (theoretically) to give children time to “catch up” to their grade-level peers (Southard & May, 1996). One assumption is that such programs shield a student from failure by offering the student an extra year to mature and develop (Mantzicopoulos, 2003).

It is difficult to determine the prevalence of transition programs in the United States
(Zill, Loomis, & West as cited in Mantzicopoulos, 2003) because national survey information generally combines rates of kindergarten retention and kindergarten transition programs. A survey by Love, Logue, Trudeau, and Thayer (as cited in Mantzicopoulos, 2003) found that 23% of the nation's schools had PF transition programs for kindergarten-aged students deemed unready for first grade.

**Intended Purpose of Transition Efforts**

The type of child expected to benefit from participation in a transition program can vary greatly between districts. Some programs are created to assist academically slow learners. Other programs are intended for academically able children who are socially immature. The intention and structure of the transition program does not appear to affect the outcomes. Shepard and Smith (1989) stated that transition programs are ineffective. Students are a year older than their grade peers but perform no better academically than transition eligible students who went directly to the next grade. Advantages that were discovered for transition students have disappeared by the end of third grade (Gredler, 1984; Shepard & Smith, 1989; Ferguson & Streib, 1996), but long-term studies are seldom done.

Advocates of transition programs have stated that DK and PF offer the developmentally appropriate environment needed for students who would otherwise struggle with the academic demands of the typical curriculum. Transition programs are supposed to prevent failure and encourage success (Brewer, 1990, Uphoff, 1990, Harris, 2003). Therefore, results of retention research that are generalized to transition programs may not be appropriate (Brewer, 1990, Uphoff, 1990). This ongoing debate—the prevalence of transition programs and the existence of studies with mixed results—substantiates the need for more research on the long-term effects of transition programs.
Summary of Some Current Research

Matthews (1996) reviewed studies that examined the academic (48 studies) and social/emotional/behavioral outcomes (19 studies) for students placed in transition or developmental classes. The most common finding was no achievement differences between students who participated in transition/developmental programs and at-risk students who did not participate in these programs. The majority of studies that reported differences favoring developmental students found only initial positive outcomes. Most studies related to the social/emotional/behavioral outcomes concluded no significant differences or differences favoring the control group(s).

Matthews (1996) examined short-term and long-term academic achievement and school adjustment outcomes of developmental kindergarten and pre-first students. No significant academic differences were found between the groups at grades one, four, and ten. Analyses of school adjustment outcomes (i.e., social development rating and attendance) also produced nonsignificant results. The developmental kindergarten and pre-first students had significantly higher high school dropout rates and were more likely to be placed in special education than were identified but not placed students and traditional students. The identified but not placed group was significantly more likely to be retained than were the other groups.

Mantzicopoulos (2003) studied the outcomes of a PF program. This study found that children in transition programs showed some academic and social-emotional advantages over children who were recommended for the program but did not participate. However, the large effect size for reading declined each year following first grade. At the end of third grade, the groups did not differ in reading achievement; PF students outperformed recommended but not placed children in mathematics until the end of third grade. Teacher ratings (academic
competence, self-control, cooperation, motivation, and overall classroom behavior) favored PF students over recommended but not placed students.

Southard and May (1996) found some initial positive results in first grade mathematics scores. Students who received an extra year of schooling (PF and retained) performed significantly better than did students who did not have this extra year of schooling. This advantage disappeared by the end of second grade. No other differences in favor of extra year programs were noted.

Ferguson and Streib (1996) reported that transition students had been referred four times more often for remedial reading services and two and one-half times more often for special education services than were a comparison group of students who went directly to first grade.

Research about the effects of DK programs is limited (as of 2004). Buntaine and Costenbader (1997) examined the academic achievement of students recommended for DK placement based on screening identification. No significant differences in second-grade and third-grade achievement scores were found between students identified as developmentally immature who had and had not attended the DK program. Similar findings were reported in controlled, peer-reviewed studies by Dennebaum and Kulberg (1994) and May and Welch (1984).

Ranson (2002) studied the academic effects of a DK program through grade eleven. Same-age and same-grade comparisons were used. Evidence suggested that DK can have some positive effects on participating students. DK students performed marginally better than did Kindergarten students in reading. However, these results were not statistically significant (p= .543). Mean GPA and MEAP (Michigan Educational Assessment Program) reading scores were higher for DK students than for their same-age peers who qualified for DK
placement but did not attend.

Ranson's findings contradict two commonly cited studies by May and Welch (1984) and by Banerji (as cited in Karweit & Wasik, 1994). May and Welch compared the achievement of 223 students. Students were categorized into three groups: regular kindergarteners, not recommended for placement; developmental kindergarten students; and students who were recommended for placement, but did not participate. At the end of third grade the developmentally placed students were the lowest achieving group.

Banerji studied the longitudinal effects of placement in developmental kindergarten. The achievement of 34 matched pairs of students was compared at the end of grades 1, 2, and 3 to younger students of the same grade and students of the same age. Positive effects for the developmental kindergarten students were found at the end of first grade. These effects were not sustained beyond first grade. Banerji concluded, as did the PF studies that developmental programs provide a temporary gain in achievement that quickly fades over time.

Results of these studies are closely comparable to results of a review conducted by Shepard (1989) of 16 controlled studies. Shepard also found that the predominant effect of an extra year of schooling is one of no difference. The extra-year students performed no better academically than their grade-level peers despite being a year older. This is true even when students were selected for the transition program based on immaturity, rather than academic risk. The intention or goal of the transition program appears to make no difference in student outcomes.

Reasons for Transition Efforts

Research does not indicate that students who participate in transition programs experience
any long-term positive benefits. Transition programs do not adhere to all conditions needed for long-term results as extracted from the supporting theoretic framework based on numerous studies: early intervention, duration, and intensity (Achilles, 2005). However, this lack of long-term benefits has not squelched the ongoing debate about transition programs. The implementation and support of these programs elicit a more emotional response from educators and parents than many other issues in public school education (Brewer, 1990).

Parents are concerned about their child's abilities and readiness for school (Pianta & La Paro, 2003). They are inundated with commercial programs and books that promise to assist them in teaching their child to read and do math at an early age. This mentality leads to the belief that an “average” or “normal” child is undesirable. Parents want their child to be a “superkid.” Parents often believe that early instruction will increase self-esteem and abilities and give their child an advantage over the competition (Elkind, 1987). A district that has instituted the philosophy that “earlier is better” may implement transition programs as a way to identify children before they fail in an academic-focused environment. Thus, students are protected from encountering a learning environment that is not suitable for their learning needs.

Preschool and K attendance may also influence educators in their decision to implement a transition program. When preschool or K attendance is common practice in a district, expectations for all students are likely to rise. Universal attendance promotes the perception that preschool and kindergarten, are part of public education rather than a nursery school. As a result, parents begin to expect worksheets and other tangible evidence of academic instruction. Evidence of academic instruction in the early grades becomes an indicator of a successful school (Elkind, 1987). Transition programs may provide a way to protect students who are not
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ready to encounter this academic rigor.

Kindergarten attendance increases teacher expectations of student performance. For example, first grade teachers will begin to assume and expect beginning students to exhibit academic skills that were previously taught in first grade (Shepard & Smith, 1988). Thus, more and more children are being labeled by teachers as unready for kindergarten and first grade (May & Kundert, 1993).

Students identified as unready for kindergarten and first grade face the possibility of being retained in grade. The negative effects of retention are undesirable, and social promotion is no longer a commonly accepted school practice (Brewer, 1990). Therefore, transition programs become a way to “advance” a student without socially promoting the student. Transition programs were developed to prevent failures and provide an environment where children may have the time needed to acquire maturity, improve work habits, and develop necessary skills for future school success (Harris, 2003).

This review of research and literature leads to a refinement of the theoretic framework presented in Figure 1. This theoretic framework has been expanded to include the components of interventions that are likely to produce measurable positive results. The interactions that a student experiences personally (student-level) and in the education setting (classroom-level and school-level) influence future student outcomes. Student experiences resulting from participation in an intervention program may produce the intended consequence of long-term positive results, create no effect (as if the child had not participated at all), or even worse the intervention may produce unintended negative consequences (inappropriate behavior, lack of motivation, poor academic growth, school drop-out, etc.) that may last for years. Although it is difficult to fully understand the
complexities of these interactions and relationships, a growing body of evidence supports that these interactions are likely to produce positive long-term benefits if the interventions implemented include the necessary components of intensity and duration.

An “at-risk” theoretic framework should also include the influence of community members on at-risk students (i.e., identification, interventions, funding, etc.). Community members include not only the local district residents but also politicians, lobbyists, and educators (outside of the district) who have the ability to directly and indirectly influence students, parents, and school personnel. The beliefs that community members and district leaders possess about at-risk students will continue to heavily influence intervention programs (or lack of). “It is a rare public policy initiative that promotes fairness and social justice and, at the same time, promotes productivity in the economy and in society at large. Investing in disadvantaged youth is such a policy” (Heckman, 2006, p. A14). As responsible educators, we must institute such worthwhile policies (interventions) based on quality research and measurable results. We can no longer “afford” to create and maintain intervention programs based on even the best of intentions.

Summary

A child's experience with school is filled with many characteristics that he/she cannot alter. Student-level effects include experiences prior to school entrance, readiness for school, and at-risk characteristics and identification. Classroom-level effects influence a child through teacher beliefs, DAPs, and class-size. School-level effects such as redshirting and length of K programs also influence this dynamic relationship between the child and his/her environment. The complexity of these relationships and interactions is also influenced by education reforms.
An understanding of these level-effects (student, classroom, and school) is critical to meeting the needs of at-risk students. Redshirting and transition programs have not produced effective student benefits. Reading Recovery, Success For All, and full-day kindergarten programs seem to produce some positive results. Small class sizes have been proven to produce significant short-term and long-term student benefits. Parent involvement programs are correlated with positive student achievement.

In this review the researcher tried to determine if it is possible to create a transition program that will produce positive student outcomes. Two transition programs (DK and PF) specifically designed to serve as an early intervention for at-risk students were examined. DK and PF programs in this district were studied to determine if students experienced any long-term academic and behavior outcomes as a result of program participation.

Although more quality research needs to be conducted about at-risk students and effective interventions, the present study has attempted to add to this growing body of research. One indicator of a profession is that a body of research guides its practice (Darling-Hammond & Goodwin, as cited in Owings & Magliaro, 1998). As this body of research about early interventions continues to grow, educators should use it to guide educational practices.

Chapter Two has presented a review of research and literature related to formal school entrance and the experiences encountered by young children. It has provided a basis for understanding how programs and interventions impact students and the challenges that educators face when creating effective programs. Chapter Three provides the research design and methodology used to examine the long-term effectiveness of two transition programs (DK and PF). Chapters Four and Five give the results of this research, provide conclusions,
and offer recommendations for education practice and future research.
Chapter Three: Research Design and Methodology

The purpose of this study was to examine the long-term academic and behavior effects (through grade 3) of students placed in a transition program (Developmental Kindergarten [DK] or Pre-First [PF]). Students in this study began their schooling in 2000. Data were collected in 2004. The cohort of students was divided into three groups: Participated in a transition program (TP students), eligible for a transition program but did not participate (TP Eligible students), and not eligible for a transition program (Traditional students).

Few quality controlled, peer-reviewed studies exist in which researchers have examined the outcomes of transition programs. An examination of DK and PF programs was necessary due to implementation costs of the programs, the need to provide effective at-risk programming, and the existing controversy between old-for-grade and retention practices. Information from quality studies should be used to guide educators in decision-making that will benefit students.

Design

This study had elements of a program evaluation, with a between-groups design that compared same-age peers. Unfortunately, due to small $n$ for several groups, it was not statistically appropriate to analyze DK and PF as separate programs. As a result, it was necessary to combine the seven possible enrollment paths (DK → K → First; Eligible DK, not placed → K → 1st; Eligible DK, not placed → K → PF → 1st; Eligible DK, not placed → K → Eligible for PF, not placed (NPF) → 1st; K → PF → 1st; K → Eligible for PF, not placed → 1st; K → 1st) into three enrollment paths: transition program eligible and participated (TP), eligible for transition program but did not participate (TP Eligible), and not eligible for transition program (Traditional).
Randomly placing students in transition programs that are designed to serve at-risk students (the length of the students' school career would be increased) would be unethical. Therefore, student groups were identified post hoc based on program eligibility and participation. The post hoc selection of students, impossibility of random assignment, and lack of variable manipulation indicated a research design that was nonexperimental (Johnson, 2001).

Johnson's (2001) classification of nonexperimental quantitative research was used to identify this study as longitudinal, explanatory research. This classification is based on two dimensions: research objective and time. The objective for this study was to use data collected at multiple time points (longitudinal) to explain the influence of transition programs within the district (explanatory).

This research design also had some elements of pre-experimental, static-group comparison and ex post facto design (Campbell & Stanley, 1963; Leedy & Ellis-Ormrod, 2005). Experimental and control groups were identified after treatment (DK or PF) and examined to determine if and in what ways the achievement of the groups varied. This design did not require that the groups be equivalent prior to treatment. Therefore, it is not possible to conclude with certainty that the observable differences are caused by the treatment. Efforts were made prior to treatment to identify differences in the groups.

Available data were limited by the post-hoc nature of this study. Data were only accessible if they had been collected and maintained by the district until the time of the study. Academic report card grades were obtainable. However, it is not developmentally appropriate or practical for young children to be assessed with a defined grading scale (i.e., percentages, letter grades). Therefore, to maintain consistency for variables that may have
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existed between grades and teachers, academic measures were limited to sources with a consistent scoring scale: Rigby Reading Levels (all grade levels except DK) and ITBS scores from grades 2 and 3 (ITBS was not administered in other grades).

Behavior outcomes were measured by analyzing data available from student files, the school database, and the Revised Behavior Problem Checklist (RBPC). Report cards from student files provided information about conduct grades. Report cards were designed by the teachers of each grade level. Although similarities existed, differences were noted in conduct areas that were assessed and the grading scales that were used. Content analysis was used to choose three conduct areas that could be found on all report cards for grades K, 1, 2, and 3. Report card data were collected to the end of grade 3.

The school database provided information about discipline referrals for grades 1 and 2. Records were not available for other grades. The RBPC was completed by teachers of students during the year of data collection (2004-2005). Students who participated in a transition program were evaluated with the RBPC by their third grade teachers. Students who did not participate in a transition program were assessed by their fourth grade teachers. The RBPC was not given to teachers of students for previous years of schooling. Asking teachers to complete the RBPC for students who are no longer in their classroom would require teachers to answer detailed questions based on memory. Therefore, the RBPC was limited to teachers who had cohort students in their classrooms during the time of data collection. All 3rd and 4th grade teachers agreed to participate in the study. However, the RBPC was only completed on 64 of the 97 cohort members due to the requirement of parent permission.

Data in this study were also limited by the lack of pretest information prior to treatments (DK or PF); but very young students may not produce test results that are highly valid or
reliable. Therefore, demographic data were collected to determine any differences that may have existed before transition program participation. Student files and parent surveys were used to collect information about parent education levels and student participation in daycare and preschool. Student files were also used to collect information about student age and attendance.

Data were examined using appropriate statistical analyses. ANOVA was used to analyze interval and ratio data. The Scheffe test was used for ANOVA post-hoc comparisons. This is a conservative test that is commonly used and does not require equal sample sizes (Gay, 1996). Chi-square was used to analyze nominal and ordinal data. It was necessary for statistical purposes to combine cells for some chi-square analyses to adjust for small cell sizes. Effect size was computed for Rigby and ITBS results. Effect size is a powerful tool that assesses the practical significance of the results (Haller & Kleine, 2001). Effect size allows results to be compared between studies and shows the difference (increase or decrease) in the standard deviation between the control and treatment groups.

Method

The methods and goals of this study are classified as action research. The research questions are focused on examining a local problem in a local setting (Leedy & Ellis-Ormrod, 2005). Post hoc selection of students has the potential to limit data collection. The researcher can examine only data that were available in the local setting. Despite this shortcoming, action research is a scientific approach to problem solving that produces information that can be used by educators to make responsible decisions. Making decisions based on information obtained through scientific problem-solving is far better than making decisions based on alleged effectiveness (Gay, 1996).
Data were coded to protect the anonymity of each student, and results were only reported as groups. Individual student information was never divulged. Most data were obtained from cumulative student files. Academic measures included scores from the reading and math subtests of the Iowa Test of Basic Skills (composite scores), reading levels of the Rigby Comprehensive Reading Assessment, retention in grade and participation in remedial reading services and special education. Students who received special education services that were not related to academic areas (i.e., occupational therapy, speech, physical therapy) were not identified in this study as special education participants. Results from these academic measures were analyzed to determine any differences in achievement between the groups (TP, TP Eligible, and Traditional). Daily attendance was also examined as a possible variable related to achievement. Student files were used to retrieve information about participation in school social work services. Students who received social work services due to an identifiable event (i.e., death in the family, divorce, etc.,) were not identified as a social work participant.

Byrd, Weitzman, and Auinger (1997) concluded that being older than one's grade-level peers (old-for-grade), regardless of retention participation, was associated with increased rates of behavior problems (students were on average 11 months older than peers or 14 months older if retained). Therefore, the relationship, if any, between transition program participants (who were old-for-grade) and behavior outcomes was explored. Third and fourth grade teachers voluntarily completed a Revised Behavior Problem Checklist (RBPC) by Quay and Peterson (1996) on the identified students (who had parent permission) in their current classrooms.

Report card grades for conduct were also used to assess behavior outcomes. Three categories related to student behavior were chosen for analysis: respects peers, follows
directions, and uses time wisely. Conduct grades were recorded for each identified group of
students and analyzed for any differences. Detailed information about discipline referrals to
the principal or dean of students was available for grades 1 and 2.

Demographic data were limited to sources available and relevant information. For
example, socioeconomic status for each group was not included because the administrator
would not release this information due to privacy laws related to funding. Race was not a
relevant factor in examining data due to racial homogeneity within this district. Information
about parent education levels and participation in daycare were also limited to returned
parent surveys. Preschool attendance was a part of student files. However, this record was
incomplete or missing in many student files. Therefore, the parent survey was relied on for
the majority of information regarding preschool participation.

The primary objective of this study was to assess the effectiveness of having a student
participate in a transition program versus moving on to the next grade. Therefore, the
evaluation focused on what the outcomes might have been for transition program students if
they had not participated in the program. Is it better for an at-risk student to move on to the
next grade with material that may be too challenging and more advanced than he/she is ready
for (based on academic testing, chronological age, teacher observations, etc.), or to
participate in an extra-year transition program and learn material that is not as challenging as
the subsequent grade?

Roderick and Nagaoka (2005) stated that based on objectives similar to this study, the
appropriate comparison is same-age. Therefore, all analyses were done between groups for
same-age peers. For example, TP students' reading results were compared at the end of 1st
grade with the 1st grade reading results of students who had not participated in a transition
program (but had entered school at the same time and were the same age as the TP students) and were therefore a grade ahead of the TP students. It was expected that the benefits of DK and PF would be measurable and produce results that would favor extra-year intervention. Results cannot be attributed to the treatment or lack of treatment with certainty due to the lack of random assignment. However, the results do provide general information about at-risk achievement and how this achievement appears to be impacted by participation in transition programs.

Subjects

Purposive “sampling” was used (Leedy & Ellis-Ormrod, 2005). Only students who began their school careers in 2000-2001 were included in the study. This was the only year (at the time of data collection) that could be used to provide consecutive years of student data through grade 3 (PF began in 2001-2002). Participants were representative of the district's population because all current and continuously enrolled students who began their schooling in DK or K were included.

Subject selection was based on district procedures and eligibility requirements for transition programs. A student was eligible for DK if he/she turned five years old between July and November of the entering school year. No screening instrument was used to determine DK eligibility. Therefore, it was not possible to identify any academic or behavioral conditions that existed before students participated in DK. Comparisons of groups prior to DK treatment were limited to student demographic information.

The PF eligibility was determined by K teachers' rankings of students based on reading readiness; and DK students had already participated in an intervention program and were therefore not eligible for PF. The number of eligible PF students exceeded the district-
imposed class-size limit. Therefore, academic testing (Reading Recovery Observation Survey) was used to limit eligibility further. An invitation for students to participate in the PF program was extended to parents based on the lowest student scores. In this study, students identified by their K teachers as at-risk for 1st grade failure were categorized as eligible for PF.

Parents made the final decision for DK and PF placements. The DK placement decision was based primarily on age. Teacher consultation was available at the parent's request. Teachers were involved in the recommendation of PF and provided parents with information to assist them in their decision. Information given to parents was based on the student's age, academic achievement, and behavior.

*Characteristics of District*

The district is located in a suburban area. At the time (2000-2001) that the identified students began school, there were 1834 students in the district (DK-12). In 2004-2005, during the time of data collection, student enrollment was 2110. Until 2004-2005, there was one elementary building (DK-5) in the district. There were 2 sections of DK (taught by the same teacher), 8 sections of K, 1 classroom of PF, and 6-7 classrooms for each of the remaining grades (1-5).

The district has a homogenous population. The minority population for the last 10 years has been approximately 5%. The main minority group is Hispanic/Latino. The socioeconomic status of students in the district has also remained stable. During the last five school years (2000-2005), approximately 20% of students have received free/reduced-cost lunches.

The existence of only one elementary building has led to consistent curricula. One
teacher from each grade level meets with the curriculum director to review and update the curriculum of each subject area. The teacher representative communicates information from the curriculum meetings to the rest of the teachers at his/her grade level. All teachers then have an opportunity to express concerns and provide suggestions related to proposed curriculum changes.

Word et al. (1990) defined small class size as 13-17 students. During the 2000-2005 school years, class-sizes for K, 1, 2, 3, and 4 exceeded 17 students. DK and PF were the only grade levels that had a class-size limit (15 students) mandated by the teacher contract. During the years that the subjects were in kindergarten, teacher aides assisted 1½- 2 hours per day in the classroom. A teacher aide was present in the DK classroom 75%-100% of each school day. A teacher aide's presence is no substitute for small class size. Based on research, it was hypothesized that the teacher aides had little to no positive influence on student outcomes. “Unfortunately, virtually all the research on the topic, including Project STAR, has found that, in general, teacher aides benefit neither teachers nor students” (Finn, 2002, p. 555).

**Strengths of the Study**

The inclusion of both DK and PF programs adds to the originality of this study and the possibility that new conclusions may be found. Consistency of programs within the district was another strength. All transition students received instruction from the same transition teachers (only one DK teacher and only one PF teacher) in the same elementary building. Therefore, concerns that the DK or PF curriculum may have differed based on variables related to the teacher, classroom, or building were void. The methods and criteria used to identify transition program students also remained constant during the years examined.

The variety of measures associated with the academic and behavior outcomes was a
study strength. For example, academic outcomes were not limited solely to test scores. Participation in special education, retention, and remedial reading services was also used to assess academic outcomes. A variety of measures and sources were also used to identify behavior outcomes. These measurements and sources are summarized in Table 3. The inclusion of behavior outcomes was also a strength of this study. The use of behavior outcomes is not common in the examination of transition programs. Most studies have focused primarily on academic outcomes.

<table>
<thead>
<tr>
<th>Behavior Measurement</th>
<th>Source of Behavior Measurement</th>
<th>Classroom Teacher</th>
<th>School Personnel</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revised Behavior Problem Checklist</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct Grades on Report Card</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discipline Referrals to Administrator</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>School Social Work Referral</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

The ability to identify students who did qualify for a transition program but did not participate was also a strength of the study. Comparing transition program students with traditional students without examining students who were eligible for a transition program but did not participate would exclude an important group of students. Transition programs are intended to give students the opportunity to have an extra year to develop skills that will
lead to future successes, therefore it was important to examine if these benefits were actualized.

Weaknesses of the Study

This proposed study also had innate weaknesses related to the design. The independent variable (participation in a transition program) could not be manipulated. Random assignment was not possible. Confounding variables may have interfered with results; a longitudinal explanatory study does not provide the same level of causality that is produced by a randomized experimental study (Johnson, 2001).

Campbell and Stanley (1963) identified two major weakness of the pre-experimental static group design: lack of control in the selection of subjects and mortality of original subjects. Extraneous variables cannot be controlled in a static group design. Firm conclusions about cause and effect cannot be made. "The most that we can conclude from these studies is that certain behaviors or characteristics tend to be associated with certain preexisting conditions; we can never determine that those behaviors or characteristics were actually caused by those conditions" (Leedy & Ellis-Ormrod, 2005, p. 233).

The use of only same-age comparisons for analyses between groups is also a weakness of this study. Same-grade comparisons would provide additional information that may be helpful to the examination of transition program outcomes. It may also be helpful to analyze a DK and PF program in the same district as separate programs. Small sample sizes in some of the groups did not permit such an examination in this study. Same-age comparisons and separate program analysis within the same district are suggested for future research.

A weakness beyond the researcher's control was the lack of pretest data. DK eligibility was based primarily on age and parent preference. No data were collected prior to DK or K
entrance. Academic criteria was used for PF eligibility. However, it was still not possible to know if PF and PF Eligible students were statistically different from the other groups prior to kindergarten. The lack of pretest data does not rule out the possibility that the TP and TP Eligible students had achievement levels that were significantly lower than the Traditional students prior to kindergarten and their treatment. Therefore, it is not possible to know with certainty how effective the transition programs were in improving achievement. However, the results do indicate that regardless of what differences existed prior to treatment, the TP students did not produce as favorable long-term results as did the TP Eligible and Traditional students.

Summary

The majority of data used in this study was available in school files. A variety of measurements was used to provide an overall picture of the outcomes associated with transition programs. The design and methods described were appropriate to provide information that would contribute to the growing body of research regarding the effectiveness of transition programs. Continued examinations on this topic should help educators to make decisions that are based on research instead of good intentions and hunches. Chapter Four provides results of this study. Conclusions and recommendations for education practice and future research are given in Chapter Five.
Chapter Four: Presentation and Analysis of Data

The purpose of this study was to explore long-term effects on academic and behavior outcomes of children placed in a transition program (Developmental Kindergarten [DK] or Pre-First [PF]). Students in a middle-class, suburban school district who were eligible for kindergarten during the 2000-2001 school year were identified as subjects. The entering cohort of 148 included 20 students who did not attend kindergarten but were instead placed in DK (14%). The researcher examined data collected from 2000-2005.

The dependent variables were academic achievement outcomes and behavior outcomes. Academic achievement was measured by the Iowa Test of Basic Skills (ITBS), the Rigby Comprehensive Reading Assessment (Rigby), retention-in-grade, participation in special education, and remedial reading services. Behavior outcomes were assessed by discipline referrals, conduct grades, social work services, and the Revised Behavior Problem Checklist (RBPC). Attendance was also examined as a dependent variable, as were the following demographic factors: gender, parent education levels, and participation in preschool and/or daycare. The district's predominant Caucasian student population excluded race as a variable. The independent variable was participation in one of the district's transition programs (DK or PF).

Subjects

Student placement in a transition program was based on district eligibility guidelines and procedures. A student was eligible for DK if he/she turned five years old between July and November of the entering school year. Exceptions to this age restriction were possible. Based on age guidelines and information provided at kindergarten (K) registration, parents made the final placement decision. For the purpose of this study, a student was categorized as eligible
for DK if his/her 5th birthday was between July and November of the entering school year.

DK and K placements were not based on a screening instrument. Therefore, it was not possible to identify any academic or behavioral conditions that existed before students participated in DK. Groups were matched post hoc on basic demographic information (preschool/day-care experience, education levels of the mother and father, gender, and age) to identify differences unrelated to program eligibility that may have existed before the treatment.

Participation in an extra-year program made DK students old-for-grade. Therefore, DK students were not eligible for the PF program, which would have further increased the chronological age gap between DK students and same-grade peers. District guidelines and procedures for PF placement were based on teacher judgment and academic testing. Teachers ranked K students based on reading readiness. Students with low reading readiness rankings were identified as being at risk for first-grade failure and deemed eligible for the PF program.

The number of eligible PF students exceeded the district imposed class-size limit of 15. Therefore, academic testing (Reading Recovery Observation Survey), which focused on the student's current reading skills, was used to limit eligibility further. This academic testing was only administered to referred kindergarten students. Therefore, comparisons based on this academic testing (Reading Recovery Observation Survey) were not possible.

An invitation for students to participate in the PF program was extended to parents based on the lowest student scores from the academic testing. Parents made the final decision about PF placement. However, school personnel provided input and recommendations based on the student's age, academic information, and behavior observations (personal teacher observations, not documented). For the purposes of this study, a student recommended for PF
by the kindergarten teacher was classified as PF eligible.

Mortality rates for the original cohort were examined during the 2004-2005 school year. Six DK students out of 20 (30%) and 6 out of 14 PF students (43%) were no longer enrolled in the district. The researcher was not able to determine whether the PF students who left the district were part of the original cohort; school records of these students no longer exist and these students' pictures were not present in the 2000-2001 school yearbook. It is possible that he/she was absent for picture day. This inability to identify these PF students as part of the original cohort did not impact results; students who were not continuously enrolled in the district until 2004-2005 were excluded from the study.

The entire cohort had 51 students out of 148 who left the district (34%). Twenty-four students of the original cohort were old-for-grade (16%). The six PF students who left the district were not included in this group of 24 old-for-grade students. It could not be determined if these six students were part of the original 2000-2001 cohort. In 2004-2005, 25% (24 out of 97) of the students from the continuously enrolled original cohort were old-for-grade as a result of participation in a transition program (DK or PF). The number of students old-for-grade would have been higher if parents had followed district guidelines for DK and if PF class-size was not limited. Therefore, it was important to examine the long-term effects that the DK and PF programs had on students who had been removed from their same-age peers and given an alternative curriculum.

The differences in eligibility procedures between the two transition programs warranted a separate examination of the programs. However, due to the lack of sufficient (n) for three of the seven enrollment groups, it was necessary to combine the results of the DK and PF programs. Figure 2 provides information about enrollment paths to first grade.
All Possible Enrollment Paths

<table>
<thead>
<tr>
<th>Path</th>
<th>Number in Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>DK→K→1st</td>
<td>16</td>
</tr>
<tr>
<td>Eligible DK, not placed (NDK)→K→1st</td>
<td>20</td>
</tr>
<tr>
<td>NDK→K→PF→1st</td>
<td>4</td>
</tr>
<tr>
<td>NDK→K→Eligible for PF, not placed (NPF)→1st</td>
<td>4</td>
</tr>
<tr>
<td>K→PF→1st</td>
<td>4</td>
</tr>
<tr>
<td>K→NPF→1st</td>
<td>10</td>
</tr>
<tr>
<td>K→1st</td>
<td>39</td>
</tr>
</tbody>
</table>

Enrollment Paths for Transition Programs Combined

<table>
<thead>
<tr>
<th>Path</th>
<th>Number in Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible for transition program (DK or PF) and participated; TP</td>
<td>24</td>
</tr>
<tr>
<td>Eligible for one or both transition programs, did not participate: TP Eligible</td>
<td>34</td>
</tr>
<tr>
<td>No transition program eligibility, traditional enrollment path; Traditional</td>
<td>39</td>
</tr>
</tbody>
</table>

Figure 2. Enrollment Paths to First Grade in One Suburban School District

Seven different enrollment paths from the start of school until 1st grade were possible.

Students entered DK or K to begin their school careers. Students were allowed to participate (if eligible) in one transition program: DK or PF. Figure 2 also includes the number of identified students for all possible groups and the number of identified students per group with the transition programs combined. Intended results of the programs were not
compromised by combining data: participation in an extra-year transition program should significantly benefit students, given the extensive research showing negative outcomes of a student being old-for-grade (See Chapter 2).

The ages of students in this study are compared in Table 4. Student age was the only objective DK placement guideline. Therefore, it was expected that the DK eligible student's age at school entry would be lower than the age of the Traditional K student who was ineligible (based on age) for DK. A test of this assertion using months of age verified that the assertion was warranted. ANOVA was used to examine the data, \( F(2, 96) = 30.28, p \leq .01 \).

Table 4

Student Counts (n) and Ages in Months at Time of School Entrance by Group: Transition Placed (TP), Transition Program Eligible (TPE) and Traditional (Trad) Students

<table>
<thead>
<tr>
<th></th>
<th>TP*</th>
<th>TPE**</th>
<th>Trad***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count (n)</td>
<td>24</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>% of N</td>
<td>25</td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>Mean Age</td>
<td>60.17</td>
<td>61.29</td>
<td>65.87</td>
</tr>
<tr>
<td>SD Age</td>
<td>3.25</td>
<td>3.33</td>
<td>2.99</td>
</tr>
</tbody>
</table>

* Transition Program, students participated in DK or PF.
** Transition Program Eligible, students were eligible but not placed in DK and/or PF.
*** Traditional, students were not eligible for transition program

Academic Outcomes

Two of the four research questions for this study related to differences in academic outcomes among the three groups (TP, TP Eligible, and Traditional). What, if any, were the differences in academic outcomes for students who qualified for placement in a transition
program (DK or PF) and participated in the program and students who qualified for placement in a transition program but remained in the traditional grade-level sequence? What, if any, were the differences in academic outcomes for students who qualified for placement in a transition program and attended the program and students who did not qualify and participated in traditional grade enrollment path (K, 1, 2, 3)?

Retention-In-Grade, Special Education Placement, and Remedial Reading Participation By Groups

One research question for this study related to the relationship, if any, of the DK and PF programs on later rates of retention, special education, and remedial reading services. Of the 97 students in this study, only one student was retained in grade (Traditional student). This retention occurred in K. It was unclear from student records why kindergarten retention was chosen instead of PF placement. Due to a lack of sufficient \( n \), no statistical analyses were computed for retention-in-grade (percentages presented for retention-in-grade are descriptive, not statistically significant).

A student retained-in-grade repeats the same curriculum that was taught during the student's "failed" year, thus increasing the student's age for future grades, removing the student from his/her peers, and extending the length of the student's school career. Students who participated in a transition program, although not retained-in-grade (they were given a DK or PF curriculum), experienced a form of retention that resulted in the same consequences as retention-in-grade (increased age, removal from peers, and extended school career). Twenty-four students out of the remaining 97 (25%) cohort members participated in a transition program. Therefore, a total of 26% of students experienced some form of retention (retention-in-grade or transition program participation).
It was important to examine the impact that participation in a transition program may have had on special education rates and remedial reading rates. Table 5 shows the frequency of special education and remedial reading across all groups. Students are not typically identified for special education services until 1st grade. Transition-program students are not eligible for academic special education services until 1st grade. Remedial reading services include Title I services and Reading Recovery. Reading Recovery is available to 1st graders who have not participated in PF. Title I is available beginning in 1st grade (previous transition program placement is not a restriction). A chi-square analysis of special education \( x^2(2, N = 96) = 0.18, p = .92 \) and remedial reading \( x^2(2, N = 96) = 1.01, p = .60 \) data showed no significant differences between groups \( (p \geq .05) \).

Table 5

<table>
<thead>
<tr>
<th></th>
<th>TP*</th>
<th>TPE**</th>
<th>Trad***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Students (N)</td>
<td>24</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>Special Education (N)</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Special Education (%)</td>
<td>8.33</td>
<td>5.88</td>
<td>7.69</td>
</tr>
<tr>
<td>Remedial Reading (N)</td>
<td>8</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Remedial Reading (%)</td>
<td>33.33</td>
<td>26.47</td>
<td>23.08</td>
</tr>
</tbody>
</table>

* Transition Program (TP), students participated in DK or PF.
** Transition Program Eligible (TPE), students were eligible but not placed in DK and/or PF.
*** Traditional (Trad), students were not eligible for transition program.
**** Percentages describe participation rates within groups.
Iowa Test of Basic Skills (ITBS) and Rigby Comprehensive Reading Assessment (Rigby)

The ITBS was administered to 2nd and 3rd grade students. The total normal curve equivalent (NCE) scores for reading and mathematics were used for ANOVA analyses. No significant differences (p ≥ .05) were found between groups for reading or math. Student counts, means, and standard deviations are recorded in Table 6. See Table 7 for ITBS p-values.

Table 6

<table>
<thead>
<tr>
<th>Subtest</th>
<th>TP*</th>
<th>TPE**</th>
<th>Trad***</th>
<th>TP</th>
<th>TPE</th>
<th>Trad</th>
<th>TP</th>
<th>TPE</th>
<th>Trad</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Reading</td>
<td>24</td>
<td>34</td>
<td>36****</td>
<td>52.50</td>
<td>54.68</td>
<td>61.78</td>
<td>18.39</td>
<td>19.30</td>
<td>16.61</td>
</tr>
<tr>
<td>2nd Math</td>
<td>24</td>
<td>34</td>
<td>39</td>
<td>45.04</td>
<td>46.65</td>
<td>45.51</td>
<td>14.45</td>
<td>14.05</td>
<td>17.39</td>
</tr>
<tr>
<td>3rd Reading</td>
<td>24</td>
<td>34</td>
<td>39</td>
<td>54.04</td>
<td>57.71</td>
<td>59.95</td>
<td>14.30</td>
<td>16.78</td>
<td>16.77</td>
</tr>
<tr>
<td>3rd Math</td>
<td>24</td>
<td>34</td>
<td>39</td>
<td>50.21</td>
<td>48.94</td>
<td>52.64</td>
<td>11.79</td>
<td>15.14</td>
<td>17.09</td>
</tr>
</tbody>
</table>

* Transition Program (TP), students participated in DK or PF.
** Transition Program Eligible (TPE), students were eligible but not placed in DK and/or PF.
*** Traditional (Trad), students were not eligible for transition program.
**** 3 students did not complete enough of the test to receive a score.
Table 7

*p-values Iowa Test of Basic Skills Between Transition Placed (TP), Transition Program Eligible (TPE), and Traditional (Trad) Students

<table>
<thead>
<tr>
<th>Subtest</th>
<th>TP*/TPE**</th>
<th>TP/Trad***</th>
<th>TPE/Trad</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Reading</td>
<td>.90</td>
<td>.16</td>
<td>.26</td>
</tr>
<tr>
<td>2nd Math</td>
<td>.93</td>
<td>.99</td>
<td>.95</td>
</tr>
<tr>
<td>3rd Reading</td>
<td>.70</td>
<td>.38</td>
<td>.84</td>
</tr>
<tr>
<td>3rd Math</td>
<td>.95</td>
<td>.83</td>
<td>.59</td>
</tr>
</tbody>
</table>

* Transition Program (TP), students participated in DK or PF.
** Transition Program Eligible (TPE), students were eligible but not placed in DK and/or PF.
*** Traditional (Trad), students were not eligible for transition program.

The Rigby was administered at the end of each school year beginning in kindergarten.

The mean reading level at the end of each grade level was calculated across groups (See Table 8 for grades 1, 2, and 3; 1 score was missing from student files for grades 1 and 2, two scores were missing for grade 3) and ANOVA was used to check for significance. It was necessary to calculate K scores using a variety of different groupings because the PF treatment had not occurred yet. At the end of kindergarten there was no significant difference, \([F(2, 95) = 1.42, p = .25]\), between DK placed, DK Eligible students (PF and PF Eligible students were excluded from this analysis unless they were also eligible for DK), and Traditional students (students in this group may have later been eligible for PF at the end of K; this intervention had not occurred yet). Unfortunately no pretest data for DK entrance were available. Therefore, it is not possible to ascertain if reading differences existed
between groups prior to DK treatment or if the lack of statistical significance is an indication that DK students attained reading levels (at the end of K) that were comparable to Traditional students.

Table 8

*Student Counts, Mean Test Scores, and Standard Deviation for Rigby Test For Transition Placed (TP), Transition Program Eligible (TPE) and Traditional (Trad) Students*

<table>
<thead>
<tr>
<th>Grade</th>
<th>TP*</th>
<th>TPE**</th>
<th>Trad***</th>
<th>TP</th>
<th>TPE</th>
<th>Trad</th>
<th>TP</th>
<th>TPE</th>
<th>Trad</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>24</td>
<td>34</td>
<td>38</td>
<td>20.21</td>
<td>21.38</td>
<td>22.55</td>
<td>4.81</td>
<td>4.44</td>
<td>5.54</td>
</tr>
<tr>
<td>2nd</td>
<td>23</td>
<td>34</td>
<td>39</td>
<td>25.30</td>
<td>26.44</td>
<td>27.15</td>
<td>4.66</td>
<td>4.05</td>
<td>5.42</td>
</tr>
<tr>
<td>3rd</td>
<td>23</td>
<td>34</td>
<td>38</td>
<td>28.30</td>
<td>29.12</td>
<td>29.08</td>
<td>3.76</td>
<td>3.49</td>
<td>5.61</td>
</tr>
</tbody>
</table>

* Transition Program (TP), students participated in DK or PF.
** Transition Program Eligible (TPE), students were eligible but not placed in DK and/or PF.
*** Traditional (Trad), students were not eligible for transition program.

Kindergarten Rigby scores were also examined, with DK students and DK Eligible students (unless they were also eligible for PF) removed to look at differences that may have existed prior to the PF treatment. At the end of K, students who were not eligible for PF scored significantly higher than did students who were placed in PF, \[F(2, 59) = 5.04, \ p = .01\]. This result was to be expected as recommendations for PF were based primarily on the lowest reading readiness scores in each classroom.

Rigby reading levels were also analyzed at the end of first grade based on PF recommendations (DK was excluded). Students not recommended for PF performed
significantly better than did those recommended for PF and not placed \( F(2, 79) = 6.46, \\
p = .003 \). Rigby reading levels were also analyzed at the end of grades 1-3 across all three groups: TP, TP Eligible, and Traditional. No significant differences were found (special education students excluded and included) in any of these analyses (See Table 9).

Table 9

*p-values For Rigby Test Between Transition Placed (TP), Transition Program Eligible (TPE), and Traditional (Trad) Students; Special Education Students Included*

<table>
<thead>
<tr>
<th>Rigby Test p-values</th>
<th>Grade</th>
<th>TP*/TPE**</th>
<th>TP/Trad***</th>
<th>TPE/Trad</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
<td>.68</td>
<td>.20</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td>2nd</td>
<td>.68</td>
<td>.34</td>
<td>.82</td>
</tr>
<tr>
<td></td>
<td>3rd</td>
<td>.80</td>
<td>.81</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* Transition Program (TP), students participated in DK or PF.
** Transition Program Eligible (TPE), students were eligible but not placed in DK and/or PF.
*** Traditional (Trad), students were not eligible for transition program.

Behavior Outcomes

Behavior outcomes were examined as a variable of this study. What, if any, were the differences in behavior outcomes for students in each of the groups? Appropriate student behavior is subject to adult interpretation. Therefore, behavior outcomes were measured by a variety of adult sources (classroom teachers decide conduct grades and RBPC responses, discipline referrals are made by school personnel [not just classroom teachers], and social work referrals that can be initiated by any adult). All behavior outcomes were analyzed at .05 significance level.
Discipline Referrals

Discipline referrals to an administrator were analyzed for grades 1 and 2 separately and combined. Data were not collected for grades, DK, K, PF (records no longer existed) or 3rd grade (records for 3rd grade were not complete at time of data collection). ANOVA was used to analyze the data. No significant differences were found between groups, p = .36 for grades 1 and 2 combined, for 1st grade p = .15, and for 2nd grade p = 1.0.

Conduct Grades From Report Cards

Conduct grades from report cards were examined for each of the following areas: Respects Others, Follows Directions, and Uses Time Wisely. When necessary, content analysis was used to select a comparable category from the grade-level report cards. Each conduct area was totaled at the end of grades 1, 2, and 3 (e.g., Respects Others for 1, 2, and 3). The conduct areas were also combined at the end of each grade level (e.g., 1st total for Respects Others, Follows Directions, and Uses Time Wisely). Kindergarten was excluded from all conduct analyses except when looking at the K behavior of those recommended for PF (DK students excluded), because the PF treatment had not occurred yet. Chi-square tests were used to analyze these data. Not all students participated in a transition program. Therefore, DK and PF conduct grades were excluded for all conduct analyses, but all students were included in grades 1, 2, and 3 analyses.

Conduct grades at the end of kindergarten did not show a significant difference (p = .32) between those recommended for PF and students not recommended for PF. DK students were excluded because district guidelines did not allow PF eligibility. Individual conduct grades at the end of 1, 2, and 3 (all groups included) produced one significant difference, Follows Directions [$x^2(4, N = 95) = 10.95$, p = .027]. The Traditional students scored significantly
higher on Follows Directions than did the TP and TP Eligible students. Of the three groups, TP students earned the lowest grades for Follows Directions. The three conduct areas (Respects Others, Uses Time Wisely, and Follows Directions) were totaled for grades 1, 2, and 3. No significant differences were found between groups (p = .24).

*Revised Behavior Problem Checklist (RBPC)*

The RBPC was chosen as a standardized instrument that provided current data related to typical elementary behavior problems, as well as more unusual and severe behaviors. The RBPC was completed by teachers who had direct contact with the students during the year of data collection (2004-2005). Collection of RBPC data was limited by teacher participation and parent consent. Demographic data (preschool/day-care experience and education levels of the mother and father) were also limited by these factors. The percentage return rates for the RBPC and the parent surveys are summarized in Table 10.

The RBPC has 6 scales of behavior: Conduct Disorder, Socialized Aggression, Attention Problems-Immaturity, Anxiety-Withdrawal, Psychotic Behavior, and Motor Tension-Excess. An ANOVA test found no significant results for any of the RBPC categories (p ≥ .05). In all areas except Socialized Aggression, the TP students displayed more inappropriate behaviors than did the TP Eligible or Traditional students (See Table 11).

The RBPC results were higher than the significance level of this study (> .05). However, a significance level of p ≤ 1.0 would have yielded significant results in 4 of 6 categories: Conduct Disorder (p = .06), Attention Problems-Immaturity (p = .07), Psychotic Behavior (p = .09), and Motor Tension-Excess (p = .08). These results would have favored TP Eligible and Traditional students. In practical terms, a significance level of p ≤ 1.0 would mean that there is a 10% chance that inappropriate behavior is not due to the treatment, as opposed to a
5% chance (p ≤ .05). Although the likelihood that the behavior is due to chance and not a result of the treatment has increased, concern at the level of p ≤ 1.0 could still be justified, especially when dealing with inappropriate behavior displayed by young children.

The RBPC results of the TP group ranked last (they displayed the greatest number of inappropriate behaviors) in 5 out of 6 categories when compared to TP Eligible and Traditional students. The TP Eligible students ranked last 1 out of 6 times. The TP Eligible students had the highest ranking (most appropriate behavior) 3 out of 6 times (Conduct Disorder, Anxiety-Withdrawal, and Motor Tension-Excess), followed by Traditional with 2 top rankings (Attention Problems-Immaturity and Psychotic Behavior) and TP with 1 (Socialized Aggression).

Table 10

*Return Rates for Revised Behavior Problem Checklist (RBPC) and Parent Surveys for Three Groups: Transition Placed (TP), Transition Program Eligible (TPE) and Traditional (Trad) Students*

<table>
<thead>
<tr>
<th></th>
<th>TP</th>
<th>TPE</th>
<th>Trad</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total N</td>
<td>24</td>
<td>34</td>
<td>39</td>
<td>97</td>
</tr>
<tr>
<td>RBPC*</td>
<td>16</td>
<td>23</td>
<td>25</td>
<td>64</td>
</tr>
<tr>
<td>RPBC (%)**</td>
<td>66.7</td>
<td>67.6</td>
<td>64.1</td>
<td>66</td>
</tr>
<tr>
<td>Parent Surveys***</td>
<td>16</td>
<td>24</td>
<td>28</td>
<td>68</td>
</tr>
<tr>
<td>Parent Surveys (%)</td>
<td>66.7</td>
<td>70.6</td>
<td>71.8</td>
<td>69.5</td>
</tr>
</tbody>
</table>

* Describes returned parent consent for administration of RBPC.
** Percentages are within groups.
*** Describes returned Parent Surveys.
Table 11

Mean Test Scores and Standard Deviation (SD) for Three Groups On Revised Behavior Problem Checklist (RBPC)

<table>
<thead>
<tr>
<th>Scale of Behavior</th>
<th>TP*</th>
<th>TPE**</th>
<th>Trad***</th>
<th>TP</th>
<th>TPE</th>
<th>Trad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct Disorder</td>
<td>3.19</td>
<td>0.22</td>
<td>1.08</td>
<td>6.56</td>
<td>0.74</td>
<td>2.78</td>
</tr>
<tr>
<td>Socialized Aggression</td>
<td>0.06</td>
<td>0.09</td>
<td>0.08</td>
<td>0.25</td>
<td>0.42</td>
<td>0.40</td>
</tr>
<tr>
<td>Attention Problems/Imaturity</td>
<td>4.38</td>
<td>1.39</td>
<td>1.36</td>
<td>5.73</td>
<td>3.09</td>
<td>3.30</td>
</tr>
<tr>
<td>Anxiety-Withdrawal</td>
<td>2.00</td>
<td>0.74</td>
<td>1.24</td>
<td>2.22</td>
<td>0.96</td>
<td>2.09</td>
</tr>
<tr>
<td>Psychotic Behavior</td>
<td>0.44</td>
<td>0.09</td>
<td>0.04</td>
<td>1.03</td>
<td>0.29</td>
<td>0.20</td>
</tr>
<tr>
<td>Motor Tension-Excess</td>
<td>1.13</td>
<td>0.26</td>
<td>0.28</td>
<td>1.78</td>
<td>0.54</td>
<td>1.06</td>
</tr>
</tbody>
</table>

* Transition Program, students participated in DK or PF.
** Transition Program Eligible, students were eligible but not placed in DK and/or PF.
*** Traditional, students were not eligible for transition program.
**** Teacher ratings of inappropriate behavior increase as numbers increase.

Summary of Behavior Outcomes

Behavior data were compiled from each of the behavior sources (discipline referrals, social work services, conduct grades, and RBPC) to determine if an overall behavior problem or pattern of behaviors existed. Overall behavior was analyzed for students who had information from all behavior sources (n = 64). The measurements used and criteria for identification of a behavior problem are summarized in Table 12.
A student who did not have any indication of behavior problems was categorized as having displayed appropriate behavior. A student with 1-2 behavior problem indicators was classified as a mild to moderate behavior concern. Three or more behavior indicators suggested that the student was a serious behavior concern.

Table 12

*Measurements and Criteria Used For Identification of Overall Behavior Problem*

<table>
<thead>
<tr>
<th>Behavior Measurement</th>
<th>Indicator of Behavior Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revised Behavior Problem Checklist</td>
<td>A score in at least one subscale that is 1 standard deviation or more above the mean.</td>
</tr>
<tr>
<td>Report Card Conduct Grades</td>
<td>A semester grade of “needs improvement” in one or more conduct areas.</td>
</tr>
<tr>
<td>Discipline Referrals to an Administrator</td>
<td>One referral or more during a school year.</td>
</tr>
<tr>
<td>School Social Work Services</td>
<td>Participation in school social work services, for any length of time during a school year.</td>
</tr>
</tbody>
</table>

The compiled data showed 3 cells in the serious behavior concern category that were less than \( n = 4 \). For statistical purposes, data from serious behavior concerns were combined with mild to moderate behavior problem, increasing all cells to at least \( n = 10 \). Table 13 shows the groups according to behavior identification categories. No statistical difference was found between groups, \( \chi^2(2, N = 97) = 5.68, p = .058 \).

It would have been reasonable to use \( p \leq 1.0 \) for overall behavior data because this was a combination of data sources that were not as rigorous as test scores. However, in an effort to remove any appearance of researcher bias and to preserve the integrity of the study, overall
behavior was analyzed at the same significance level as all other outcomes in this study, \( p \leq 0.05 \). The following descriptive information would have been significant based on \( p \leq 1.0 \). The TP group had the lowest percentage of students with appropriate behavior and the highest percentage of students with mild to serious behavior concerns. The Traditional students had the best behavior ratings followed by the TP Eligible students.

Table 13

* Percentages are within groups

School Social Work Services

School social work services were also examined as an indicator of a behavior problem. Social work services were not included in this study if the referral was based on circumstances beyond the student's control (i.e., parents' divorce, death of family member, etc.). No significant differences were found between groups, \( \chi^2(2, N = 97) = 1.77, p = .41 \). The groups were relatively similar in their social work participation. The TP had the highest percentage of social work participants (\( n = 4, 16.7\% \)), the Traditional also had 4 participants...
(10.3%) and the TP Eligible had the fewest number of participants (n = 2, 5.9%).

Demographic Factors

Gender

Chi-square tests were used to determine any statistical differences in program participation for gender across groups. The TP students had significantly more males than did the other groups \( \chi^2(2, N = 97) = 6.37, p = .041 \). This finding is consistent with other studies that have also found that DK students tend to be younger boys (e.g., Gay, 2002; Graue & DiPerna, 2000).

Parent Education Levels

Mother and father education levels were examined for significant differences across groups. The data were collected from voluntary parent surveys. Therefore, data do not represent the entire sample. It was necessary to combine some of the cells for statistical purposes to eliminate small \( n \). The combining of cells resulted in the following categories: High School, Vocational-Technical School, and College. These categories included attendance and completion/graduation. There were no significant differences across groups for the mother education levels \( \chi^2(4, N = 68) = 1.20, p = .88 \). Results are summarized in Table 14. Significant differences were found among the fathers' education levels, \( \chi^2(4, N = 65) = 11.92, p = .02 \). Fathers of TP students had the highest percentage (46.7%) of fathers who had their formal education end after high school. No fathers of TP students (n=15) had any college experience. Fathers of TP Eligible children had the highest education level with 47.8% receiving some kind of college experience (See Table 14).
Table 14

*Data were collected from returned parent surveys.
**Education levels include all who attended, regardless of completion.
***Vocational-Technical School
****All levels of College

Preschool and Daycare Participation

Data regarding student participation in daycare prior to school entrance were collected from parent surveys and are presented in Table 15. Preschool data were obtained from school records (when available) and returned parent surveys. Based on the data collected, Chi-square tests found no significant differences between groups for participation in preschool, \( \chi^2(2, N = 81) = 2.15, p = .34 \) or daycare, \( \chi^2(2, N = 68) = 2.99, p = .23 \).

Attendance

Attendance was also examined as a variable. The total days present for each grade level (grades K, 1, 2, 3) were calculated for each group. For comparison purposes with Traditional students, Transition grades (DK and PF) were excluded. There were no significant
Table 15

Daycare and Preschool Enrollment Across Three Groups: Transition Placed (TP), Transition Program Eligible (TPE), and Traditional (Trad)

<table>
<thead>
<tr>
<th>Enrollment Status *</th>
<th>TP</th>
<th>TPE</th>
<th>Trad</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Daycare</td>
<td>Preschool</td>
<td>Daycare</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%**</td>
<td>n</td>
</tr>
<tr>
<td>Enrolled</td>
<td>7</td>
<td>43.8</td>
<td>11</td>
</tr>
<tr>
<td>Not Enrolled</td>
<td>9</td>
<td>56.3</td>
<td>5</td>
</tr>
</tbody>
</table>

* Data were collected from returned parent surveys.
** Percentages are within groups

differences between groups at the end of each grade level, \( p \leq .05 \). When absences were totaled for grades K, 1, 2, and 3, the TP students had the fewest absences followed by the Traditional students and then the TP Eligible students. A significant difference was found between groups for the total attendance of grades K, 1, 2, and 3, \( [F(2, 96) = 3.73, p \leq .05] \). TP Eligible students missed significantly more school than did TP students.

Effect Size (ES) Comparisons

For comparison purposes, the Effect Size (ES) was computed to determine how much of a difference the intervention made in terms of SD units (Education importance rather than statistical significance). This calculation is not affected by the size of \( n \). Effect Size was computed by taking the difference between the experimental group (TP and TP Eligible) and the control group (Traditional) and dividing by the SD of the control group. Effect sizes of .3, .5, and .8 are indicators of Small, Medium, and Large practical significance (Haller & Kleine,
Effect size comparisons for ITBS and Reading were computed by comparing TP and TP Eligible students to Traditional students. The TP had “medium” and negative ES (-.56) when compared to Traditional students on 2nd grade ITBS Reading scores. All other effect sizes for ITBS scores were low (Special Education students included), see Table 16.

Effect size was also computed for Rigby Reading Levels. Kindergarten ES were not computed because the PF treatment had not occurred. It would not be accurate to include these students in the TP and TP Eligible groups. However, removing these groups would not provide an equal comparison with other grades. Therefore, K Rigby scores were excluded from ES computations. The difference between TP and Traditional students' scores had “medium” negative ES for 1st and 2nd grade, -.56 and -.57 respectively. All other effect sizes were low, see Table 17.

**Rank Order of Academic Measures**

Rank order of academic measures was used for comparison purposes. Across the seven academic measures (Rigby grades 1, 2, and 3; ITBS Math grades 2 and 3; ITBS Reading grades 2 and 3) the TP group ranked last, 6 out of 7 times (86%). The TP Eligible group rankings ranged from 1 to 3. The majority (4 out of 7; 57%) of TP Eligible ranks were a 2. The Traditional group was never ranked last and had the highest rank, 71% of the time (5 out of 7). The Traditional group had the highest overall rank, followed by TP Eligible, and then TP. The final rankings seem consistent with the data presented.

**Summary**

This chapter presented data and comparisons based on academic and behavior measures for three enrollment paths (TP, TP Eligible, and Traditional). Demographic factors were also
examined. Chapter Five presents a summary and discussion of findings, conclusions, and suggestions for future policy, practice, and research.
Table 16

*Effect Size* (ES) Comparisons (ES = Treatment x - Control x, Divided by Control SD)
for ITBS Reading and Math, Special Education Included (In)** and Excluded (Exc)***

### 2nd Grade ITBS Reading

<table>
<thead>
<tr>
<th>Groups</th>
<th>In**</th>
<th>Exc***</th>
<th>In</th>
<th>Exc</th>
<th>In</th>
<th>Exc</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP/Trad</td>
<td>24/36</td>
<td>22/34</td>
<td>-9.28</td>
<td>-8.19</td>
<td>0.16</td>
<td>0.19</td>
</tr>
<tr>
<td>TPE/Trad</td>
<td>34/36</td>
<td>32/34</td>
<td>-7.1</td>
<td>-7.08</td>
<td>0.26</td>
<td>0.22</td>
</tr>
</tbody>
</table>

### 2nd Grade ITBS Math

<table>
<thead>
<tr>
<th>Groups</th>
<th>In</th>
<th>Exc</th>
<th>In</th>
<th>Exc</th>
<th>In</th>
<th>Exc</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP/Trad</td>
<td>24/39</td>
<td>22/36</td>
<td>-0.47</td>
<td>-1.18</td>
<td>0.99</td>
<td>0.96</td>
</tr>
<tr>
<td>TPE/Trad</td>
<td>34/39</td>
<td>32/36</td>
<td>1.14</td>
<td>-0.77</td>
<td>0.95</td>
<td>0.98</td>
</tr>
</tbody>
</table>

### 3rd Grade ITBS Reading

<table>
<thead>
<tr>
<th>Groups</th>
<th>In</th>
<th>Exc</th>
<th>In</th>
<th>Exc</th>
<th>In</th>
<th>Exc</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP/Trad</td>
<td>24/39</td>
<td>22/36</td>
<td>-5.91</td>
<td>-6.69</td>
<td>0.38</td>
<td>0.29</td>
</tr>
<tr>
<td>TPE/Trad</td>
<td>34/39</td>
<td>32/36</td>
<td>-2.24</td>
<td>-2.95</td>
<td>0.84</td>
<td>0.74</td>
</tr>
</tbody>
</table>

### 3rd Grade ITBS Math

<table>
<thead>
<tr>
<th>Groups</th>
<th>In</th>
<th>Exc</th>
<th>In</th>
<th>Exc</th>
<th>In</th>
<th>Exc</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP/Trad</td>
<td>24/39</td>
<td>22/36</td>
<td>-2.43</td>
<td>-2.55</td>
<td>0.83</td>
<td>0.81</td>
</tr>
<tr>
<td>TPE/Trad</td>
<td>34/39</td>
<td>32/36</td>
<td>-3.7</td>
<td>-3.73</td>
<td>0.59</td>
<td>0.58</td>
</tr>
</tbody>
</table>
Table 17

*Effect Size* (ES) Comparisons (ES = Treatment x - Control x, Divided by Control SD) for Rigby Reading, Special Education Included (In)** and Excluded (Exc)***

### 1st Grade Rigby Reading

<table>
<thead>
<tr>
<th>Groups</th>
<th>In.**</th>
<th>Exc.***</th>
<th>In</th>
<th>Exc.</th>
<th>p-value</th>
<th>ES*</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP/Trad</td>
<td>24/38</td>
<td>22/36</td>
<td>-2.34</td>
<td>-2.23</td>
<td>0.2</td>
<td>0.13</td>
</tr>
<tr>
<td>TPE/Trad</td>
<td>34/38</td>
<td>32/36</td>
<td>-1.17</td>
<td>-1.64</td>
<td>0.61</td>
<td>0.25</td>
</tr>
</tbody>
</table>

### 2nd Grade Rigby Reading

<table>
<thead>
<tr>
<th>Groups</th>
<th>In</th>
<th>Exc.</th>
<th>In</th>
<th>Exc.</th>
<th>p-value</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP/Trad</td>
<td>23/39</td>
<td>21/36</td>
<td>-1.85</td>
<td>-1.9</td>
<td>0.34</td>
<td>0.14</td>
</tr>
<tr>
<td>TPE/Trad</td>
<td>34/39</td>
<td>32/36</td>
<td>-0.71</td>
<td>-1.37</td>
<td>0.82</td>
<td>0.26</td>
</tr>
</tbody>
</table>

### 3rd Grade Rigby Reading

<table>
<thead>
<tr>
<th>Groups</th>
<th>In</th>
<th>Exc.</th>
<th>In</th>
<th>Exc.</th>
<th>p-value</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP/Trad</td>
<td>23/38</td>
<td>21/35</td>
<td>-0.78</td>
<td>-1.19</td>
<td>0.81</td>
<td>0.42</td>
</tr>
<tr>
<td>TPE/Trad</td>
<td>34/38</td>
<td>32/35</td>
<td>0.04</td>
<td>-0.91</td>
<td>1</td>
<td>0.52</td>
</tr>
</tbody>
</table>
Chapter Five: Summary and Discussion of Findings, Conclusions, and Suggestions For Future Policy, Practice and Research

Literature indicates that there is a lack of experimental research to suggest that Transition Programs (Developmental Kindergarten [DK] and Pre-First [PF]) produce long-term effects. Students who participate in a transition program experience immediate consequences: removal from same-age peers, involvement in an alternative curriculum, and extension of school career. Therefore, it is important to explore the academic and behavior benefits, if any, that are reaped by transition program participants. The researcher compared outcomes of transition program students (TP) with students who were eligible for a transition program but did not participate (TP Eligible) and students who were not eligible and therefore did not participate in a transition program (Traditional).

The researcher addressed the following research questions:

1. What, if any, were the differences in academic outcomes for students who qualified for placement in a transition program (DK or PF) and participated in the program and students who qualified for placement in a transition program but chose to remain in the traditional grade-level sequence?

2. What, if any, were the differences in academic outcomes for students who qualified for placement in a transition program and attended the program and students who did not qualify and participated in traditional grade progression?

3. What was the relationship, if any, of the DK and PF programs on rates of retention, special education, remedial support services, school social work services, conduct, and attendance?

4. What, if any, were the differences in behavior outcomes for students in each of the groups?
Summary and Discussion of Findings

The prevalence of students being identified as at-risk (eligible for DK and/or PF) in this district (39% of original cohort, 58 out of 148; 60% of remaining cohort, 58 out of 97) justified an examination of both transition programs (DK and PF). Academic achievement and behavior outcomes were examined as dependent variables. Academic achievement was measured by the Iowa Test of Basic Skills (ITBS), the Rigby Comprehensive Reading Assessment (Rigby), retention-in-grade, participation in special education, and remedial reading services.

Behavior outcomes were assessed by discipline referrals, conduct grades, social work services, and the Revised Behavior Problem Checklist (RBPC). Attendance was also examined as a dependent variable. The independent variable was participation in one of the district's transition programs (DK or PF). Groups were matched post hoc on basic demographic information (preschool/day-care experience, education levels of the mother and father, gender, and age) to identify differences unrelated to program eligibility that may have existed before the treatment. Table 18 summarizes the significance of the findings. Rankings of academic and behavior measures can be found in Table 19.
Table 18

Summary of Significance For Academic and Behavior Measures

<table>
<thead>
<tr>
<th>Type of Measure</th>
<th>Significance*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic Measures</strong></td>
<td></td>
</tr>
<tr>
<td>Rigby Grades 1-3</td>
<td>No Significance (NS)</td>
</tr>
<tr>
<td>Iowa Test of Basic Skills</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Behavior Measures</strong></td>
<td></td>
</tr>
<tr>
<td>Discipline Referrals</td>
<td>NS</td>
</tr>
<tr>
<td>Report Card: Follows Directions</td>
<td>.023</td>
</tr>
<tr>
<td>Report Card: All Other Results</td>
<td>NS</td>
</tr>
<tr>
<td>Revised Behavior Problem Checklist</td>
<td>NS</td>
</tr>
<tr>
<td>Social Work</td>
<td>NS</td>
</tr>
<tr>
<td>Overall Behavior Problem</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Demographic And Other Measures</strong></td>
<td></td>
</tr>
<tr>
<td>Preschool and Daycare</td>
<td>NS</td>
</tr>
<tr>
<td>Father Education Level</td>
<td>.018</td>
</tr>
<tr>
<td>Mother Education Level</td>
<td>NS</td>
</tr>
<tr>
<td>Attendance</td>
<td>.032</td>
</tr>
<tr>
<td>Gender of Groups</td>
<td>.041</td>
</tr>
<tr>
<td>Age of Groups</td>
<td>.000</td>
</tr>
</tbody>
</table>

* Significance level p > .05
Table 19

Overall Rankings For Academic and Behavior Measurements For All Groups

<table>
<thead>
<tr>
<th>Type of Measures</th>
<th>TP*</th>
<th>TP Eligible**</th>
<th>Traditional***</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic Measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rigby Reading</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Iowa Test of Basic Skills</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Behavior Measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discipline Referrals</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Report Cards</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Revised Behavior Problem Checklist</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Behavior Problem Index</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

* Transition Program, students participated in DK or PF.
** Transition Program Eligible, students were eligible but not placed in DK and/or PF.
*** Traditional, students were not eligible for transition program

This study used action research to evaluate the DK and PF transition programs. Action research is not experimental; it focuses on finding a solution to a local problem (Leedy & Ellis-Ormrod, 2005). Therefore, the researcher was not able to alter characteristics that led to weaknesses or limitations in this study. For example, student mobility, lack of complete records (no pretest data), and the need for voluntary participation (Parent Surveys and RBPC) were beyond the researcher's control. To create a study of academic and professional value, a systematic approach was used for data collection, data analysis, and group comparisons (See Chapter 3).
Student placement in a transition program was based on district eligibility guidelines and procedures. Parents made the final decision for DK and PF placements. Developmental kindergarten eligibility was based primarily on student age. For the purpose of this study, a student was identified as eligible for DK if his/her 5th birthday was between July and November of the entering school year. District guidelines and procedures for PF placement were based on teacher judgment and academic testing.

Students who teachers believed would be placed in special education in the future were not eligible for PF. Students with low reading rankings were identified as at-risk for first-grade failure and deemed eligible for the PF program. Academic testing was used to further limit eligibility. For the purposes of this study, a student recommended for PF by the Kindergarten teacher was classified as PF eligible.

Each student from the entering cohort (2000-2001) was identified post-hoc and categorized as one of the following: a student who participated in a transition program (TP), a student who was eligible for DK and/or PF, but did not participate (TP Eligible), or a student who was not eligible for a Transition Program and therefore followed the traditional grade level sequence of K, 1, 2, 3 (Traditional). These three groups were used for comparison and statistical analyses.

The cohort began their school careers eligible for Kindergarten (based on age). Kindergarten attendance that is almost universal (98% in 2004) has impacted subsequent grades (DeCesare, 2004). Expectations for all students are likely to rise, resulting in more and more children being labeled as unready for kindergarten and first grade (May and Kundert, 1993). This statement seems to be corroborated in this district, where 58 students out of the original cohort of 148 (all students entering school for the first time in 2000-2001)
were identified as being at-risk (unready for K and/or 1st). The identification of 39% of students as unready for their age-appropriate curriculum is a concern. The percentage of at-risk students in the identified cohort (58 out of 97) is 60%. Twenty-four of the 58 students (41%) participated in a transition program (25% of the identified 97 cohort).

Students who participated in a transition program, although not retained-in-grade, experienced a form of retention (they were not allowed to move to the next grade with their peers) that resulted in consequences that were similar to retention-in-grade: increased age, removal from peers, and extended school career. A total of 26% of students (1 in 4) experienced some form of retention: retention-in-grade (n = 1) or transition program participation (n = 24).

It seems that educators in this district have heeded the warnings present in research that grade retentions do not produce long-term academic success (Niklason, 1984; Hagborg, Masella, Palladino, & Shepardson, J., 1991; McCombs-Thomas et al., 1992; McCoy & Reynolds, 1999). It is commendable that in-grade retentions are infrequent in this district, especially in light of mounting research that states that not only is retention not beneficial, it is harmful (Niklason, 1984; Roderick, 1995; Owings & Magliaro, 1998). However, because the immediate consequences of transition programs are similar to retention-in-grade and can be considered a form of retention, it is imperative that long-term effects of transition programs be examined.

The TP group was composed of significantly more males than either the TP Eligible or Traditional groups, \(x^2(2, N = 97) = 6.37, p = .041\). It is a common assumption in education and society that boys are less developmentally mature than girls. This assumption seems to lead to the identification of more boys than girls as unready for school and the placement of
more boys than girls in transition programs. The DK students in this cohort were on average 5 months younger than Traditional students and 1 month younger than TP Eligible students. The findings in this study are consistent with other studies that have also found that DK students tend to be younger boys (e.g., Gay, 2002; Graue & DiPerna, 2000).

Educators often justify and implement transition programs based on the assumption that these programs provide children extra time to mature and develop ("catch up" to their peers) and thus shield them from failure (Mantzicopoulos, 2003; Southard & May, 1996). Participation in transition programs should decrease the need for additional academic support services (i.e., special education and remedial reading); after all, TP students have participated in an intensive year-long intervention. The TP students in this cohort should have had significantly lower participation rates for special education and remedial reading than did the TP Eligible students. However, no significant differences were found between groups for Special Education or Remedial Reading Service participation rates. Therefore, it does not appear from these findings that participation in DK or PF was a deterrent for participation in special education or remedial reading.

ITBS was used as a measure of academic success. ITBS results were available for grades 2 and 3. No significant differences were found between groups for reading or math for either grade. This result seems to suggest that the TP Eligible and TP students "caught up" to the Traditional students. The TP Eligible students were able to do so without being removed from their peers and given an alternative curriculum (transition program).

Rigby Reading tests were also used as a measure of academic success. Rigby results at the end of K (PF and PF Eligible students were excluded because the intervention had not occurred) showed no significant difference between Traditional students, DK placed, and DK
Eligible students. It appears that DK students achieved reading levels that were comparable to their Traditional peers. However, lack of pretest data do not allow the researcher to assert that these similar reading scores are attributable to the DK treatment. It is possible that no reading or math differences existed prior to the treatment.

A significant difference existed at the end of K between PF placed students and students who were not recommended for PF (DK students were excluded and DK Eligible were also excluded unless the student was also eligible for PF). At the end of 1st grade, this significant difference no longer existed. The PF students appear to have improved their Rigby Reading scores to a level that was similar to students who were not eligible for PF.

A significant difference at the end of 1st grade based on PF recommendations (DK was excluded, those eligible but did not participate in DK were included) was found between PF Eligible students and students who were not eligible for PF. These PF Eligible students “caught up” to their Traditional peers by the end of 2nd grade. No significant differences were found between groups for grades 2 and 3. These findings are consistent with other studies that have also found that any academic advantages shown by TP students decline each year following first grade and disappear by 3rd grade (Gredler, 1984; Shepard & Smith, 1989; Ferguson & Streib, 1996; Mantzicopoulos, 2003).

Existing research on transition programs focuses primarily on academic outcomes. At-risk students are likely to develop early outcomes of school failure that can lead to more detrimental forms of failure (Finn, 1993). For example, at risk students are likely to display learning problems, perform below grade level in academics, develop emotional or behavioral problems, and eventually drop out of school (McWhirter et al., as cited in May & Kundert, 1997). Therefore, it is important that the impact of transition program participation on
behavior is examined.

Behavior outcomes in this study were examined using a variety of sources. Conduct grades from report cards in the following areas were analyzed: Follows Directions, Respects Others, and Uses Time Wisely. No significant differences were found based on PF recommendations. Therefore, it seems that behavior did not play a role in the identification of students for PF placements. This finding is consistent with information provided by educators in the district: low reading performance was the primary consideration for PF recommendations. Only one significant difference was found during report card analyses. Traditional students scored significantly higher in the area of Follows Directions for grades K, 1, 2, and 3 combined than did the TP and TP Eligible students. These findings from conduct report card grades suggest that there were no "bad" behaving children in this cohort.

Teachers used the RBPC to rate the behavior of cohort students (during the 2004-2005 school year). In 5 of the 6 RBPC categories, the TP demonstrated more inappropriate behaviors than did the TP Eligible and Traditional students. The TP Eligible students were rated as displaying the most appropriate behavior in 3 of 6 categories. These results are inconsistent with findings by Mantzicopoulos (2003), which concluded that teacher ratings favored TP students over TP Eligible students. Bell (1972) found that students placed in a transition class had lower self-concept scores than did students who were recommended for transition placement but did not participate. It is unclear from this study the impact that students' attitudes and feelings about themselves may have had on their behavior.

Teacher ratings from the RBPC were consistent with the overall behavior findings of this study. Behavior was examined by a variety of sources (conduct grades, discipline referrals, social work participation, and RBPC results) to obtain an overall behavior index score
(n = 64). No significant differences were found. The TP students displayed more behavior problems than did the TP Eligible and Traditional students. In all four of the behavior sources examined, the TP ranked last in displaying appropriate behaviors. Although the results for each individual source (i.e., conduct grades, discipline referrals, social work participation, and RBPC results) were not statistically significant, the ranking of TP students as last in all categories is of concern.

The behavior outcome results (same-age comparisons) of this study seem consistent with research that indicates that old-for-grade students are more likely to experience social difficulties in later schooling than their grade-level peers who are not old-for grade (Byrd et al., 1997; Grissom & Shepard, 1989). Although other factors may have contributed to inappropriate behavior, the possible negative impact of transition program participation on student behavior should not be dismissed.

In this district, DK placements were not based on screenings. Therefore, data to establish achievement levels prior to treatments (DK or PF) did not exist. Therefore, demographic factors were used to determine any characteristics that may have been significantly different between groups prior to school entry. Significance was found for father education levels (p = .018). Transition program students had the highest percentage (47%) of fathers who had ended their schooling following high school and had no fathers with college experience. Fathers of TP Eligible students had the highest percentage (48%) with college experience. Did fathers of TP students view transition programs as a beneficial opportunity? Did college fathers of TP Eligible students consider transition programs to be a form of retention? These questions cannot be answered by this study. Further research is needed to examine the role, if any, that fathers play in transition program placement decisions.
Attendance was examined as a dependent variable. Finn (1993) concluded that sustained student engagement (e.g., attending school, paying attention to teachers, completing work) in the school environment is a component of school success. Transition Program Eligible students missed significantly more school in grades K, 1, 2, and 3 combined than did Transition Placed students. Despite this lack of engagement, TP Eligible students outperformed TP students in 6 out of 7 academic measures and 4 out of 4 behavior measures.

Attendance is only one factor in the relationship between the child and the school environment. The affect of this relationship on future outcomes of at-risk students should be of concern to educators. According to Johansson (as cited in Southard & May, 1996), failure may not be a result of a child's development. The same child may have succeeded in a different environment (different teacher, teaching methods, peers, etc.). It is reasonable to conclude that beliefs about child development, perceptions of one's ability to influence this development, and beliefs related to school structures will have some affect on the practices displayed by teachers in their classrooms.

Shepard and Smith (1988) concluded that teachers in schools with low retention rates accepted the possibility that students may have individual curriculum needs and unpredictable patterns of learning growth. These teachers based classroom practices on the perception that student learning was not fixed in developmental stages, thus student learning could be influenced. This study does not address the possible influence of the PF program on K teachers' practices and beliefs. Did the possibility of PF placement impact K teachers' feelings of control and influence over child development, especially of at-risk students?

Supporters of transition programs have stated that DK and PF offer an environment that is needed for students who would otherwise struggle with the academic demands of the
typical curriculum. Transition programs are supposed to prevent failure and encourage success (Brewer, 1990, Uphoff, 1990, Harris, 2003). However, it does not appear that the behavior or academic outcomes of TP Eligible students were affected by their lack of transition program participation or by their exposure to the typical curriculum, nor did TP students exhibit greater academic and/or behavior success than did the TP Eligible students.

Conclusions

Transition program students participated in an extra-year intervention (DK or PF) with the intention of being able to achieve greater success in school than they would have otherwise experienced had they remained with their peers in the traditional grade level sequence. Therefore, it was expected that results and rankings would favor TP students over TP Eligible students.

This study provides evidence that suggests that there are no lasting academic or behavior benefits for students who participate in a transition program (DK or PF). These results are consistent with existing literature (Mantzicopoulos, 2003; Buntaine & Costenbader, 1997; Southard & May, 1996; Dennebaum & Kulberg, 1994; Shepard & Smith, 1989). The TP students ranked last in 6 of 7 academic categories and exceeded the performance of TP Eligible students on only 1 measure. In contrast, the TP Eligible students ranked 1st in 2 out of 7 measures and ranked last on only 1 outcome. Based on these academic measures, it appears that the TP Eligible students were able to overcome their at-risk characteristics without experiencing an alternative curriculum or being removed from their same-age peers.

Behavior outcomes also favored TP Eligible students over TP students. TP students had the lowest behavior rankings of the three groups. Perhaps these results indicate that developmental immaturity was present prior to transition placement. However, it would be
expected that TP Eligible students who did not experience the transition program intervention would exhibit more inappropriate behaviors than the TP students. After all, the TP Eligible students were placed in an environment and given a curriculum that was deemed by educators as inappropriate and too challenging for their learning needs. It was unfortunate that more behavior data were not possible. Only 2 of 4 behavior sources had data available for all grade levels (DK, K, PF, 1-3). Based on data available, behavior results favored TP Eligible students over TP students on all measures.

At-risk characteristics that led to DK placement were based primarily on age and occurred before students had an opportunity to experience the K curriculum. Boys participated in DK with greater frequency \( (p = .041) \) in this district than did girls. This finding was consistent with other studies (e.g., Gay, 2002; Graue & DiPerna, 2000). The frequency with which boys are identified for DK suggests that boys may be penalized in their early schooling for their hands-on, active nature that is often categorized as immature. Educators and other policy-makers try to create equal opportunities in education for all children regardless of race, socioeconomic status, gender, and so on. However, at least in this example, males do not appear to be given an “equal” opportunity to be successful in kindergarten. Instead, characteristics commonly attributed to males seem to be associated with unfavorable academic outcomes, at-risk identification, and DK placement.

The majority of students in this cohort (60%, 58 out of 97 students) were identified as at-risk (40% of all students who entered district in 2000-2001, including students no longer enrolled in district). It is possible that the curriculum may not have been reflective of developmentally appropriate practices (DAP). After all, a curriculum that is developmentally appropriate should be suitable for the majority of students. Academic demands are influenced
by not only local educators and parents, but politicians as well. Therefore, it can be a challenge to implement DAP and still address concerns and pressures outside of the local school district. The No Child Left Behind Act of 2001 is one example of how politicians are implementing policies that have the potential to directly impact students, particularly at-risk students.

The challenge is how to implement DAP in conjunction with required academic demands. How could transition program participants (1 in 4 students in this district) be instructed with DAP in their age-appropriate classrooms? Could the costs and resources (teachers, materials, etc.) needed to implement these transition programs be used to provide other research-based intervention programs (i.e., Success For All, small class-size, tutoring programs, Reading Recovery) that would assist at-risk learners?

An explanation for the lack of transition program benefits is beyond the scope of this research. However, based on this study, it is possible to speculate several probable explanations. It seems likely that TP and TP Eligible students are capable of “catching up” to their Traditional peers on their own, without a year of an alternative curriculum. It is unfortunate that this study does not examine any effects beyond third grade. Perhaps the time that a child may need “to grow” does not require a full school year. Therefore it may be that transition programs would produce benefits if flexibility were used in duration and programs were not confined to a rigid traditional school year.

The experiences that students have with other students may also impact outcomes. The TP Eligible students may have benefited from interacting with students with a wider array of ability levels. TP Eligible students were able to experience and witness other students performing successful grade-level work. In contrast, TP students were more likely than TP
Eligible and Traditional students to have had more interactions with students of the same ability level as their own.

Suggestions For Future Policy, Practice and Research

Transition programs are usually implemented in districts where there is a commitment to assisting at-risk students to achieve success. After all, money, time, talents, and other resources are being invested in these programs. Despite this commitment, transition programs do not appear to provide long-term benefits. The results of this study raise questions related to education policy that should be of concern to educators and cause for further examination. What responsibility do educators have to create a learning environment that is ready for any child? Should children be ready for a particular grade or should educators be ready for students in each grade? These questions should be of particular importance to educators and parents in districts where many children are being identified as at-risk (1 in 4 in the district in this study). The methods used to identify at-risk students should also be of concern and receive special attention.

Restructuring traditional programming may produce more beneficial long-term academic and behavior success than transition programming. Perhaps students recommended for transition programs would have made greater long-term academic strides after participating in an all day, every day kindergarten program than they would have achieved by participating in a transition program. Kindergarten programs in this district may also benefit from low class size. PF and DK teachers could be utilized in Kindergarten classrooms to achieve low class sizes. This action would benefit all students (not only at-risk), especially if low class size is implemented in subsequent grades as well.

Further investigation into attendance and its role in school engagement could also assist
in understanding how to best educate at-risk students. The TP students had the best attendance, which should have resulted in increased school engagement and better outcomes than students who were absent more frequently. However, the results of this study do not provide evidence that the TP students reaped more benefits from school attendance than did the TP Eligible students. An explanation for this contradiction is beyond the scope of this research. Future research could examine what factors may have led TP students to have better overall attendance than TP Eligible and Traditional students. What role did participation in a transition program, low class sizes in DK and PF, parent involvement levels, and so on, have on the attendance of TP students?

The TP students ranked last in every behavior measure. When behavior in the classroom and other school areas (behavior problem indicator) was examined through grade 3 (data were not available for all grades), the TP students also ranked last. Future research is needed to investigate why the behavior of TP students was consistently more inappropriate than the TP Eligible and Traditional students. More research is also needed to examine the relationship that transition placements may have had on behaviors beyond third grade. What are the behaviors of these groups in high school as measured by discipline referrals, suspensions, and dropping-out of school?

Although the ability to follow directions is only one small area in the scope of student behavior, how did this inability to follow directions affect academic areas and other behaviors. Why did TP students have significantly more difficulty in following directions than did TP Eligible and Traditional students (scores for grades K, 1, 2, 3 were combined)? Difficulty following directions may be affecting the ability of TP students to learn. Further research is needed to determine if this is a factor that is impacting academic and behavior
This study did not examine the TP students in relationship to their age-level peers. Further research with this comparison would help determine the amount of success that TP students were able to experience after treatment in comparison to their new peers. It would also be beneficial to study DK and PF programs in the same district as separate programs. Does one program produce more favorable outcomes than the other program?

Summary

This study provided evidence that a DK and PF program produced no long-term academic or behavior results. TP Eligible students were able to achieve better outcomes than TP students without participating in DK or PF. Only a few measures (Attendance, Follows Directions (report card), Father Education, and Gender of Groups) were significant. Although most results were not significant, it is still a concern that TP students ranked last on all academic and behavior measures except one (ITBS-3rd grade Math). Based on the assumption underlying transition programs that students who participate in transition programs will experience greater success than students who were eligible but did not participate, it was expected that the TP students would produce more favorable outcomes than did the TP Eligible students.

Further research is needed to examine at-risk programs that will produce long-term results with statistical and practical significance. Educators should use information from this study and existing literature to implement fiscally responsible interventions that will help at-risk students to obtain desirable long-term results.
References


Bloom, B. (1984, May). The search for methods of groups instruction as effective as one-to-one tutoring. *Educational Leadership, 41*(8), 4-17.


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Goldberg, M. (2005, March) Losing students to high-stakes testing. Phi Delta Kappan, 70(7), 10-19


Appendix A


The information below will be used in a study by Eastern Michigan University doctoral student, Amanda Reenders, who will examine the different ways that students at Elementary progress through the early grade levels (Developmental Kindergarten (DK), Kindergarten, Pre-1st, 1st). Information will be used to determine the success of DK and Pre-1st programs. If you have any questions about this study, please call Amanda Reenders at or . The best times are Monday-Friday, 6:00-9:00 p.m.

This research has been reviewed and approved by the Eastern Michigan University Institutional Review Board and if you have any questions regarding the approval process, please feel free to call either Dr. Patrick Melia or Dr. Steven Pernecky at 734-487-0042.

You should be able to answer this survey in 5 to 10 minutes.

- Your student's name is only to associate your answers with the student: All data will be anonymous and reported only as part of a group.

- Participation in this survey is voluntary. Your participation will in no way affect your or your child's relationship with the staff of Public Schools.

- Only the researcher will have access to the data.

- Although your participation is very much appreciated; compensation for participation will not be given.

- Return of this survey signals your voluntary consent to participate.

- You may request to have your answers to this survey removed at any time without penalty.

Thank you in advance for your time and your help.

Please check the appropriate lines to describe your child's experiences prior to entering Public Schools (Developmental Kindergarten or Kindergarten).

Child's First and Last Name__________________________

Year entered Public Schools_______
1. Check all that apply

____ Preschool  How many years? ____
____ Day-Care  How many months? ____
____ Stayed at home with a parent  How many months? ____

2. Check the highest level of the Mother's education

____ Attended high school
____ Graduated high school
____ Attended vocational-technical school
____ Graduated from a vocational-technical school
____ Attended college- did not graduate
____ Completed two years of college (Associate's degree)
____ Completed four years of college (Bachelor's degree)
____ Attended graduate school- did not graduate with a specific degree
____ Completed graduate program
____ Attending or completed coursework beyond a Master's degree

3. Check the highest level of the Father's education

____ Attended high school
____ Graduated high school
____ Attended vocational-technical school
____ Graduated from a vocational-technical school
____ Attended college- did not graduate
____ Completed two years of college (Associate's degree)
____ Completed four years of college (Bachelor's degree)
____ Attended graduate school- did not graduate with a specific degree
____ Completed graduate program
____ Attending or completed coursework beyond a Master's degree

4. Check all that apply

____ My child attended DK.

____ My child could have attended DK (birthdate is July-November), but attended Kindergarten instead.

____ My child attended Pre-1st.

____ The staff recommended Pre-1st for my child, but my child did not attend this program. My child went from kindergarten to 1st grade.