

AN ALTERNATIVE TO THE EXTRA YEAR
FOR HIGH RISK FIRST GRADE STUDENTS

by

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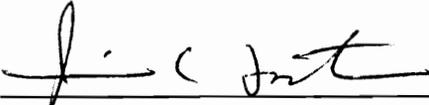
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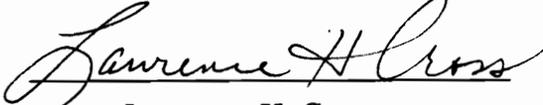
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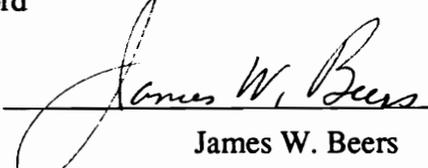
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First Grade Students

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Educational Research and Evaluation

(ABSTRACT)

The Alternative Primary Program (APP), a classroom strategy for accommodating the academic readiness levels of entering first grade students, was implemented in two schools with high concentrations of economically disadvantaged students. For identification purposes, students were designated as Regular and Transitional First Grade students by utilizing existing school district guidelines, but were grouped heterogenously in reduced class size groups rather than being placed in self-contained classes. After two years in this setting, academic progress in the area of reading by students in the two pilot school sites was examined to determine the relative progress of Regular and Transitional (identified) students in comparison to one another. A second comparison was made to determine the relative progress of students in the APP with students moving through the same two schools in a previous student cohort.

Heterogenously grouped students were evaluated periodically with an instrument used to assess pre-literacy stages of development including: Sense of Story, Sense of Word, Spelling Awareness, Letter and Word Recognition. The experimental instrument used in the study monitors student progress through three continuous stages of pre-literacy

development. Assessment of students is carried out by classroom teachers for the purpose of directing instruction and determining appropriate instructional strategies for classroom use. The analysis of data produced by this measure and relating this data to other more traditional forms of reading achievement was one of the purposes of this study. Information produced by the Stages Assessment instrument was found to be reliable as an early indicator of readiness for reading instruction and predictive of later reading achievement.

Multivariate analysis of variance techniques were used to analyze reading dependent variables. Multiple regression and discriminant analysis were used to analyze the relationship among reading achievement measures and indicators of reading readiness, including stages assessment data. Methodological limitations regarding the use of intact groups and problems relating to program implementation in a period of change are discussed.

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Chapter 1

INTRODUCTION

Since publication of the National Commission of Excellence in Education's Nation at Risk report (1983), there has been a renewed call for standardized testing at all levels of schooling and recent educational reform efforts have increased the pressure for accountability felt by local school systems. In turn, this accountability culture (Shepard & Smith, 1988) has increased the pressure felt by teachers to produce students who perform well on grade level objectives as measured by standardized achievement tests (Cunningham, 1988). In the graded structure typical of elementary school education in the United States, teachers react by raising their expectations of what represents acceptable performance for the previous grade level. "As third grade teachers experience pressure for their children to perform well on standardized tests, they in turn put pressure on the second and first grade teachers to prepare their children..."(op.cit., pp. 24-25).

The natural end of the line, in terms of the trickle-down effect that will occur from this process, comes at the point where children enter the schooling process. Students of eligible school entrance age begin school with a wide range in academic readiness skills. "Great diversity in cognitive development and social maturity create a teaching problem that educators are constantly trying to resolve"(Shepard & Smith, 1986, p. 78). The dilemma in primary grades is that teachers must accommodate children with a wide range in readiness skills in the highly academic structure of first grade classrooms.

Generally, state- and district-level approaches taken to deal with this situation have been of three types:

1. Raising School Entrance Age Requirements
2. Using Grade Retention Practices
3. Implementing Transition (Extra-Year) Programs

STATEMENT OF THE PROBLEM

The problem with each of these approaches has been a lack of success at meeting the intended goals of reducing variability in academic readiness among students and increasing the likelihood of their later school success. Traditionally, young children were first introduced to formal learning through the activity of play (Elkind, 1986). In such a setting, differences encountered in social and cognitive development were not significant. Recently, however, students in first grade, and even in kindergarten, have been introduced to formal instruction in reading, mathematics, language arts and handwriting (Elkind, 1987; Brophy, 1987; Shepard & Smith, 1988). Kindergarten has been described as a "high stress boot camp for first grade" (Brophy, 1987, p. 53) that requires students to sit for long periods of time and complete paper and pencil tasks. This rigorous structure and academic curriculum places many children "at risk" for early school failure if they are not able to meet the behavioral demands of passive learning.

When one adds to the mix the fact that participation in kindergarten programs is not mandatory in many states, the variability in academic readiness seen among entering first grade students often bridges a considerable span. District- and state-level strategies for dealing with this diversity have not been successful. These approaches have attempted to deal with the potential for early school failure by eliminating younger students thought to be more likely to encounter difficulties, retaining students in grade who fail to demonstrate

mastery of basic skills, and tracking students who are "not ready" for first grade into extra-year programs often called "transitional first grade".

Raising the entrance age requirement only succeeds in creating a new youngest group. Shepard and Smith (1986) refer to the problem of "differential readiness" that will occur within a twelve-month span regardless of the date which is selected by the school district as its entry-age cutoff. Moreover, when school entrance age is raised, teacher expectations adjust to the new norm, further curriculum escalation occurs, and the problem of early grade failure and diversity remains unresolved.

The use of grade retention to accomplish the same goals in early grades has also been unsuccessful. The practice of grade retention has been the subject of a great body of research which essentially has found no reliable evidence to suggest that this strategy is more effective at improving achievement than grade promotion for students with academic or social adjustment problems (Jackson, 1975, p. 627). Carstens (1985) also found that using grade retention practices to minimize variability among students fails to reduce the number of skill levels seen within a classroom.

Transition programs have been criticized as representing another form of retention, and for creating an early form of academic tracking from which children often do not recover (Oakes, 1985; Shepard & Smith, 1990). Gredler's (1984) review of transition class research leaves questions as to the "educational payoff" (p.469) of these placements and indicates that research thus far has been unable to show sustained benefits for students who were placed in transition programs. Nevertheless, these programs have become highly popular over the past decade and forty states, including the Commonwealth of Virginia, have used transition programs as a strategy to deal with large numbers of entering first grade students unable to cope with the academic demands placed on them.

All three of the approaches mentioned have relied on exclusionary tactics to address the problem of diversity in academic readiness seen among first grade students. These strategies attempt to homogenize groups of students in order to make them more adaptable to the graded structure currently in place in most elementary school settings. These various approaches affect a large number of students every year. In Virginia, approximately thirty percent of kindergarten students will eventually take a three-year route from kindergarten through first grade (Walsh, 1987). Grade retention rates in the primary grades remain at levels of approximately 10-12% annually for the state. These statistics suggest that the current practices designed to control diversity among incoming first grade students have not been successful at ensuring early school success. Because so many children are affected by these practices each year, it is imperative that other options be considered. It has been suggested that strategies designed to accommodate, rather than control, the diversity issue offer more potential for ensuring school success than do current tracking and grade retention practices in primary grades.

A classroom-based strategy has been designed for use on a pilot basis in two schools for this study. The primary goal of the project was to design a curriculum and assessment model for first grade classrooms which could readily accommodate the variability in academic readiness skills presented by incoming first grade students. The result was the formulation of the Alternative Primary Program, which is characterized by the following:

- reduced class sizes not to exceed a student-teacher ratio of 15:1
- no grade retention after grade one
- use of emerging literacy assessment model

PURPOSE OF THE STUDY

The purpose of this study was to examine the result obtained by using the Alternative Primary Program with a group of incoming first grade students. Specifically, the study examined the academic progress made by a group of students attending two primary school sites in a disadvantaged urban area. Students in the study group had been evaluated using district placement criteria and designated (for identification purposes only) as regular or transitional first grade students. Although students were identified for the study in this way, the strategy developed to accommodate the students' differences was not designed to track them in separate classes. Instead, all students were assigned randomly to first grade classes in the Alternative Primary Program (APP). The first research question examined whether actual differences in academic performance were seen between students within the APP who had been designated transitional and regular first grade students after the first and second year of the study.

To determine whether the classroom strategy implemented in the Alternative Primary Program was successful at increasing the academic achievement of students (and therefore improving the likelihood of their later school success), the performance of students from the same schools in a previous year's cohort group who were placed separately in transitional or regular first grade classes provided a basis for comparison. Reading progress made after the first and second years of the study by transitional and regular students in each cohort group was the primary focus of this work. The second research question examined whether performance of groups of first grade students (transitional and regular) was different from that of similar groups in a previous cohort who had experienced self-contained transitional or regular first grade placements. An important

point to remember is that transitional first grade students in the previous year's cohort group will in fact be one year older than those in the APP.

Research questions of primary interest explored in this study included the following:

1. Is the actual academic performance of transitional and regular (identified) first grade students different after one year spent together in the Alternative Primary Program (APP)?
After two years in APP?
2. After two years in the APP, is the reading achievement of transitional or regular (identified) students different from that of students in a previous year group who had experienced a self-contained transitional or regular first grade placement ?

Secondary questions of an exploratory nature included the following:

3. Could early indicators be combined in a model to explain later reading achievement in second grade as measured by the Degrees of Reading Power test?
4. What indicators were most helpful at predicting which students would become "competent" second grade readers (as defined by a level of reading comprehension on the DRP) after two years of schooling in the APP?

Additional analyses were conducted to address issues dealing with the reliability and validity of assessment instruments used in conjunction with the Alternative Primary Program. An underlying question throughout the study concerned the validity of the

selection process used to identify students for the transitional first grade program in this district.

DEFINITIONS OF TERMS

- TRANSITION (EXTRA-YEAR) PROGRAMS include a variety of programs typically offered in the primary grades either prior to kindergarten (e.g., Junior-K) or between kindergarten and first grade (e.g., Transitional First Grade) and are based on the rationale that children need more time to develop a state of readiness for instruction.

- SCHOOL READINESS refers to the general ability of a student to learn in and adapt to the school environment. In the school district under study, certain criteria are applied to determine the "readiness" of entering first grade students to handle regular instruction in grade one. These criteria include the use of a locally developed social/behavioral checklist (T-1 Checklist) and a modified form of Light's Retention Scale.

- TRANSITIONAL STUDENTS is the term used to designate students in this district whose scores on Light's Retention Scale and the T-1 Checklist combine with teacher recommendations to result in a Transitional First Grade (T-1) placement recommendation.

- FIRST GRADE PLACEMENT refers to the process of identifying entering first grade students for one of the following programs:

1. Regular First Grade Program: an academic first grade curriculum; teachers hold expectations that students have acquired reading readiness concepts; classroom

setting includes highly structured routines and average class size is approximately 28 students.

2. Transitional First Grade Program: an extra-year program which has been in place since 1980 and includes a modified first grade curriculum with less emphasis on the abstract and more emphasis on concrete representations, and the use of manipulatives; there are fewer expectations for socialized group behaviors and class sizes are held to an average of 18 students.

- ALTERNATIVE PRIMARY PROGRAM (APP) refers to the program designed as the experimental treatment in this study; students in the designate school are randomly assigned to reduced class size groups, regardless of their designation as transitional or regular first grade students (heterogeneous groups); use of modified instructional strategies and assessment methodology ; class size is limited to 15 students.

LIMITATIONS OF THE STUDY

Intact school sites were selected for implementation of this strategy, which placed a major limitation on assuring the internal validity of the study. School district officials made the decision to invest resources required by the Alternative Primary Program in the schools which they perceived had the greatest need. The schools selected serve a highly disadvantaged, predominantly Afro-American student population. Conclusions based on results of this study will be limited to the disadvantaged population of primary students in this school district and the dynamics of factors present in this situation cannot be assumed

to be representative of patterns present in a wider sphere without experimentation under more controlled conditions. However, it is felt that the characteristics of this population of high risk students are similar to those in many urban school districts and should provide insight for others facing similar problems.

A second limitation had to do with the unfinished nature of the methodology associated with assessment of emerging literacy skills in young children and the technical characteristics of the assessment instrument used as part of the Alternative Primary Program. Although the project under study offered some opportunity to begin development of an instrument to measure growth as defined by the literacy development model used in the study, this work is just beginning and will continue as an outgrowth of the project.

A delimitation of the study had to do with the scope of the research questions specifically addressed. The Alternative Primary Program is an ongoing program which will be evaluated in its entirety at a later date. The current research study is limited to determining whether a classroom intervention strategy, offered as an alternative to the self-contained placement of students in transitional and regular first grades, is more effective at improving the reading achievement of various identified groups of students.

RESEARCH HYPOTHESES

- The first research question investigates whether the actual performance of students identified as Regular and Transitional First Grade is, in fact, different after being grouped together in classrooms under a modified classroom instructional model. Since multiple dependent variables will be analyzed simultaneously, multivariate analysis of variance will be conducted for the sets of measures at the end of the first and second years of the study, and the null hypothesis tested in each case will be:

1. $H_0: \lambda = 0$

- The second research question investigates whether the performance of Regular and Transitional First Grade students in the Alternative Primary Program is significantly different from the performance of similarly identified students in the previous year's cohort group who experienced self-contained Regular and Transitional First Grade placements. Since multiple reading measures will again be analyzed together, the null hypothesis tested will be:

$$2. H_0: \lambda = 0$$

- The third research question is exploratory in nature and investigates the relationship among several independent variables as they contribute to the prediction of the reading comprehension score obtained from students in the spring of the second grade year. Data from students participating in the Alternative Primary Program will be utilized for this purpose. The null hypothesis tested will be:

$$3. H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$$

- The fourth research question is also exploratory and deals with whether a linear combination of the independent variables available can be used to weight the scores of students in such a way that discrimination between the two groups is maximized. In discriminant analysis, the set of weights, \mathbf{v} , is found which maximizes the ratio between \mathbf{B} (between-groups SSCP) and \mathbf{W} (pooled within-groups SSCP). The null hypothesis tested will be:

$$4. H_0: \lambda = \frac{\mathbf{v}'\mathbf{B}\mathbf{v}}{\mathbf{v}'\mathbf{W}\mathbf{v}} = 0$$

In addition, the mean separation between groups as defined by the discriminant function will be tested for significance. The null hypothesis will be:

$$5. H_0: D^2 = 0$$

Chapter 2

REVIEW OF THE LITERATURE

The graded structure typical in most public school settings has for many years been criticized for failing to account for the academic abilities and social needs of many children (Dewey, 1902). Prior to the founding of common schools in 1836, public education was a solitary endeavour in which students moved forward in an individualized program at their own pace (Cubberly, 1934). With the movement toward universal public education, student promotions became an important social issue, due to sharp increases in the numbers of students retained in the system past the elementary years (Labaree, 1984). The common schools moved toward an organizational model which seemed "fiscally, socially, and pedagogically efficient" (Custis, 1897) and provided for the simultaneous instruction of larger groups of students (Labaree, 1984). These "common schools" found themselves under pressure to transmit society's meritocratic ideal - that rewards are based on individual ability and effort (Tyack & Hanslot, 1982). The drive for efficiency and merit led to the artificial grade placement of students based on age cohorts.

An organizational structure which partitions curriculum content into grade level subdivisions of subject matter for delivery to children in equal doses may seem to fulfill one of the stated functions of public education: that of cultural transmission (Stratemeyer et. al.,1957). However, in such a setting there is little room for individual variability and the assumption is made that knowledge, skills, and values are imparted to equally prepared and

receptive students. Seldom are these assumptions met in public school classrooms at any grade level. The problem is particularly pronounced for children in primary grades whose varied backgrounds bring them to eligible school entrance age with a wide range in the readiness skills necessary to benefit from formalized public school instruction (Day & Drake, 1986; Katz, 1987; Seefeldt, 1988).

Several writers (Spodek, 1985; Walsh, 1987; Seefeldt, 1988; Jarvis, 1989) have suggested that incongruity exists between the developmental perspective held by early childhood specialists today and the structure and organization of elementary schools as they currently exist. Dialogue continues between early childhood specialists and public school administrators surrounding the nature of curriculum in the primary grades and often takes the form of a debate regarding whether curriculum should be child-centered (Day & Drake, 1986) or academic. The academic or "classic" curriculum is characterized by direct teaching of discrete skills (Egertson, 1987), while the child-centered or developmental curriculum emphasizes the organization of a classroom, structured in such a way that the broad range of developmental, social, educational, and cultural needs of the child may be served (Day & Drake, 1986). According to the developmental perspective, "guided" learning requires structuring the physical and social environment of a student in such a way that natural interactions with materials and methods will occur *as the child is ready for them*. Early childhood experts warn that for many children not yet "developmentally ready" to learn specific academic content, insistence on the mastery of isolated skills presented in a rigid curriculum model will lack meaning and that the result for many children, even bright ones, will be school failure (Seefeldt, 1988).

The debate over the appropriateness of teaching the "academic" or "child-centered" curriculum is itself not a recent development. Dewey criticized the distinction as an artificial one as long ago as the turn of the century (1902), and advised that in developing curriculum the

choice was not an issue to be decided by choosing one or the other approach. His critique allowed that the needs and interests of children must be taken into account, but that the goals, values, and accumulated knowledge of the culture into which the child would enter must also be considered (Walsh, 1987, p. 14). Either view, in its extreme, ignores the fact that development of curriculum for the primary grades must address the internal needs of young children while introducing them to the external demands of the society in which they will live.

In Kliebard's (1986) historical review of the development of curriculum in public schools, four interest groups are identified as struggling for control over curriculum. These groups included Traditionalists, Social Efficiency proponents, Developmentalists, and Social Meliorists (Kliebard, 1986). Two of these groups currently have a strong presence in the ongoing debate over what program should be offered to students entering the primary grades. These particularly vocal groups are the developmentalists and the social efficiency proponents who have found their present niche in the School Effectiveness movement. Those interested in making schools more efficient organizations have been active since the turn of the century when reformers such as Snedden and Bobbit launched these efforts (Walsh, 1987). The School Effectiveness movement is based on a set of principles which relate school process, environment, and structure in schools as correlates of student achievement. Necessary requisites to be found in "effective" schools are: strong instructional leadership, clear goals and academic objectives, high expectations and standards for student performance, frequent monitoring of student progress, and maximum time on task and emphasis on academics (Edmonds & Lezotte). Despite criticisms of the methodology used in the research on which this movement was based (Purkey & Smith, 1983; Witte & Walsh, 1987), the influence of this movement on education has been powerful. The downward extension of academic curriculum into the primary grades has come about as much due to pressure on schools to become more effective as anything else.

The School Effectiveness movement finds allies in parent groups and business leaders who express a belief that poor school performance is due largely to educators having low expectations of achievement for students (Schultz, 1989). One of the ways educators address community concern about low standards is by implementing stringent retention policies. It has been suggested that school boards utilize such tactics to create the impression that standards are being raised, while maximizing the reported achievement of students by reducing numbers of students who appear likely to have difficulty if promoted (Schultz, 1989). Adherence to strict grade retention policies also allow administrators to avoid disruption of the traditional patterns of organization governing elementary schools and classrooms (Labaree, 1984).

Despite the lack of empirical evidence to support the benefit of retention as an educational practice, it continues to enjoy a high level of support among laypersons and educators alike. In a recent Gallup poll, 72% of respondents favored stricter promotion standards (Gallup, 1989). For their part, teachers at all grade levels, but particularly those in primary grades, support the use of retention and express the belief that the practice prevents students from facing failure in higher grade levels (Chase, 1968; Finlayson, 1977; Hagen, 1980; Lehr, 1982; Tomchin, 1989). Pomplum and others have found that among students retained, those retained in early grades are more likely to experience academic success (Sandoval & Fitzgerald, 1985) and have fewer negative self-concept and social adjustment effects than students who are retained in later school grades (Chansky, 1964; Scott & Ames, 1969; Finlayson, 1975). Pomplum (1988) also concluded that when retention is used for the purpose of academic remediation, its utility decreases as grade level increases. To some, then, it might appear that, when necessary, there is some support for the selection of early grades as the appropriate place for extra time via retentions to be spent in a child's school career.

When teachers explain their decisions for retention, academic performance measured against grade level or minimum competency standards is usually the main criterion considered (Hagen, 1980; Byrnes & Yamamoto, 1986; Impara & Tomchin, 1989). In addition, primary teachers also site "immaturity" as a major factor, resulting in a recommendation for retention or extra year placement as a "corrective time-out" in cases where physical, social, or behavioral immaturity are noted (Tomchin, 1989).

Teachers seem to focus on perceived gains made by retained and transitional children and underestimate the possible long-range negative impact of these placement decisions (Schuyler, 1985; Shepard & Smith, 1987; Byrnes, 1989). The retention of students or their placement in extra year programs have apparently been seen by teachers as the only viable alternatives to sending already unsuccessful students on to the next grade where more demanding academic content will most certainly be expected.

Smith and Shepard (1989) found that many primary teachers hold "nativist" beliefs about the issue of students' readiness for academic learning. Teachers who hold this viewpoint believe that, though students may have average or better ability, they are often just "not ready" for school. For such teachers, the "gift of time" (Bohl, 1984) is thought to be a justifiable rationale for retention or placement in an extra year program. Extra year programs are described as being designed for "behaviorally or socially young" children in order to provide extra time for "developmentally appropriate" learning experiences to occur (Bohl, 1984; Frick, 1985). Advocates see the advantage of offering an intermediate step between kindergarten and first grade for such children and often give transitional programs the status of special programs by reducing the class size (Dolan, 1982; Jones, 1985). Proponents do not view the extra year as retention, but rather as a preventive step to avoiding academic failure in later years (Day & Drake, 1988; Egertson, 1987; Katz, 1987; Seefeldt, 1988; Uphoff & Gilmore, 1986).

The concept of "extra time" in school for certain children who are chronologically age-eligible to enter school but do not share the same background of experiences as other children, is not a negative one. The problem is introduced when screening procedures and placement practices are based on weak or ill-informed systems of thought which utilize readiness testing or developmental testing in inappropriate ways. Measurement instruments used for these placement decisions seem to fall in two categories: readiness tests and developmental age tests. Bruner's perspective on the appropriate use of readiness testing is that they should be used to evaluate a child's preparedness for benefiting from a specific curriculum (Meisels, 1986, 1989). Most academic readiness tests are criterion-referenced measures which measure a child's level of performance mastery with respect to some set of specified skill objectives. They should not be used for high-stakes testing purposes of classification, retention, or promotion (Meisels, Steele, & Quinn, 1989). Placement of students into extra-year self-contained transitional grade programs in which the introduction of regular first grade curriculum is delayed or diluted is an example of classification which results in circumstances indistinguishable from retention.

To an even greater extent, the use of developmental age testing with an instrument such as the Gesell School Readiness Test (Haines, Ames, & Gillespie, 1980) results in a point in time designation of a child's developmental age which in some school systems is the sole piece of information relied upon for making placement decisions for transitional grade or regular grade programs, or in many cases for making the decision to hold the student back from beginning school for a year. The Gesell claims to be able to identify children who are at-risk of school failure, and to determine when children should begin school, which children should be promoted, and which should be retained in grade (Meisels, Steele, & Quinn, 1989). The technical quality of the Gesell School Readiness Test is lacking, and the issue has been reviewed thoroughly elsewhere (Bradley, 1985;

Kaufman, 1985; May & Welch, 1984; Naglieri, 1985; Shepard & Smith, 1986, 1987; Smith & Shepard, 1987). Among the criticisms of the technical adequacy of the test are those concerning the inadequacy of the norming sample on which the developmental ages were determined. The size of the sample was small (approximately 300), and limited to a suburban area in the northeast with very little representation of low socio-economic or minority students (Kaufman, 1985).

Research studies planned to investigate the validity of the Gesell concept of developmental age have found no data to support the assertions made by the authors of the test. In a study which claims to validate the concept, Wood, Powell, and Knight (1984) found that over half of a group of kindergarten students designated as developmentally "ready" did not have successful kindergarten experiences as reported by their classroom teachers. May & Welch (1984b) conducted a second study which found problems with the accuracy of Gesell's developmental age assignments, a lack of stability in the age scores determined, and a lack of support for the success of an extra-year program based on Gesell recommendations. Despite the fact that empirical data clearly does not support the use of the Gesell tests for placement decisions, they continue to be widely used.

The power of high-stakes testing has been described as "a perceptual phenomenon: if students, teachers, or administrators believe that the results of an examination are important, it matters very little whether this is really true or false - the effect is produced by what individuals perceive to be the case" (Madaus, 1988, p. 88). It has been suggested that belief in the concept of developmental age and the accuracy with which it can be determined offers an intuitively pleasing means for teachers to cope with the dilemma presented by students facing stringent curriculum demands in first grade (Meisels, Steele, & Quinn, 1989). If teachers can determine a "developmental age" for a child, which is maturationally and genetically driven, then a child who does not appear able to cope with the rigors of an

academic first grade can be deemed "not ready" without the appearance of failure on the part of child, teacher, or parent. The problem with this designation of the child as "not ready" is that the presumption follows that no instruction or interventions need be attempted or can be expected to have an effect. Bruner calls the notion of academic readiness a "mischievous half-truth" because readiness itself consists of mastery of certain simple skills which lead to more complex ones, and in a very real sense readiness can be taught (p.29).

Transition room programs are seen as a placement alternative for students unable to cope with the academic demands of the next grade. They have been in use since the 1940s (Harris, 1970) and are generally employed as a strategy at the end of the kindergarten year (Gredler, 1984). Supporters of transition programs see them as an alternative to the retention of children in primary grades and as a preventive step to avoid later school failure. There is little research evidence, however, to support the effectiveness of transition classes as a successful intervention for "unready" primary grade children.

As early as 1950, McDaid found that transition-room eligible children who remained in regular classes outperformed transition-room counterparts in the area of reading performance over a three-year period. Other studies have generally confirmed McDaid's earlier impressions (Bell, 1972; Raygor, 1972; Matthews, 1977) and were summarized in Gredler's (1984) review of the research on transition-room programs with the conclusion that children placed in these programs either do not perform as well or at most perform equally to similar children placed in regular classrooms (p.469). In a second early study, Hagaman (1947) found that children in a transition-room program were presented again with a kindergarten-type program and that reading instruction was not initiated (Gredler, 1984). Hagaman's early warning, although apparently not heeded, was significant in its criticism of the instructional program presented in the transition-room program. This is an issue which has come under greater scrutiny in more recent studies of

the effectiveness of these programs. Bell's (1972) dissertation determined that children with educational and psychological characteristics of transition-room eligible children made better achievement gains in regular class placements than did children placed in the transition-room program. Bell further concluded that the program of study offered in the regular class proved more effective for children having these characteristics than did exposure to a modified curriculum. This finding questions the philosophical base of the transition-room program which states that a "slower pace of instruction within the smaller, homogeneous group (is) the most effective way to develop readiness for children who (do) not appear to be ready for first grade..." (p.121) (cited in Gredler, 1984).

In a study critical to the purposes of this research, Leinhardt (1980) studied transition-room-eligible students in Pittsburgh, Pennsylvania who were integrated into a regular first grade class in two groups. One was taught with a specially-devised individualized reading program and the other was taught with a regular basal textbook approach. The progress of these two groups was also compared to the progress of a self-contained transition room group which was also taught with the individualized reading program. The results indicated that transition-room-eligible children who were taught reading with a specialized individual program *in a regular classroom* outperformed both transition-room-eligible children taught with the specialized program in a self-contained transition room and transition-room-eligible students taught in a regular classroom with a basal instruction method (Leinhardt, 1980). This study was important for two reasons: it dealt with the operational characteristics of the instructional program taught to transitional students, and it was set in the Pittsburgh public school system serving a predominantly black, disadvantaged student population. The nature of the instructional program used with transitional students was made explicit and a clear definition of the "at-risk" student population being served was provided.

The label "at-risk" given to children who were defined as the comparison group in several studies (Bell, 1972; Raygor, 1972; Talmadge, 1981) of transitional programs raises an important methodological issue related to external validity. Transition room programs may vary systematically in the type of child for which the program is designed. Gredler (1984) cites the criteria for selection of children and the type of curriculum to be utilized as two critical decisions which must be made when transition-room programs are implemented.

In Virginia, as elsewhere, there is considerable loyalty to the Gesell philosophy of school readiness based on social and behavioral maturity. Where transition-room programs are defined as serving children selected for immaturity, findings of studies are mixed in terms of program effectiveness (Turley, 1979; Mossburg, 1987) and others report no differences in terms of benefits for the "immature" children assigned to these extra-year programs (Caggiano, 1984; May & Welch, 1984; Jones, 1985). In a statewide study of screening practices used in the primary grades, concern was expressed by school personnel themselves that transitional first grades in Virginia were becoming a "dumping ground" for students whether or not they met the stated criteria and that male, minority, and disadvantaged students were assigned to them in disproportionate numbers (Walsh, 1987). Virginia's educators also complain that no suitable curriculum exists for such programs and that children are being prevented from engaging in literacy and arithmetic activities of which they are capable (Walsh, 1987, p.14). The implications seem clear that transition-room programs in their current form are not meeting the needs of children identified as "at-risk" of later school failure. It also seems likely that the next logical step lies in the planning of programs using current evidence of successful strategies found in programs for "at-risk" children and promising new forms of methodology found in the field of language arts instruction for young children.

The reduction of class size has often been proposed as an educational intervention to improve the achievement of students. Although early descriptive studies favored smaller class sizes (NEA, 1968; McKenna, 1975), later more thorough analyses done by the Educational Research Service (ERS) (1978) found that class size had little effect on achievement above the primary grades. Using a meta-analysis of some 80 studies conducted between 1900 and 1978, Glass and Smith (1978) concluded that reduced class size could be expected to produce increased academic achievement, and that greatest advantages were expected for groups of 20 or fewer students, although actual percentile rank differences were shown to be meager. In 1986, Slavin combined elements of descriptive analysis and meta-analysis to form what he called "best-evidence synthesis" and applied the process to class size research. He found that, generally, a 40% reduction in class size (i.e. from 27 to 16) will have a positive effect on student achievement, but that the effects tend to be small (Slavin, 1986). Cluster analysis was used to analyze class size research studies conducted between 1950 and 1985 in classes containing five or more students in grades K through 12 (Robinson & Wittebols, 1986) and results indicate the most promising effects of small classes occur in grades K-3 (McGivern et. al., 1989) on learning in reading and math, particularly with 22 or fewer students (Robinson, 1990).

While it is still clear that class size reduction is an expensive intervention, Odden (1990) suggests that for schools with "large concentrations of educationally and economically disadvantaged students" the reduction of class size to fifteen for instruction in reading and language arts is essential. Literature on successful programs for primary "at-risk" children generally cite the limitation of group size to fewer than twenty as an element necessary for success (Berrueta-Clement et al., 1984; Lazar & Darlington, 1982; Slavin et al., 1990). Taken together, these references in the literature provided a rationale for the reduction of class size in the pilot program (APP) to fifteen. In addition, increased

requirements for individualized attention dictated by the instructional methodology adopted for the program made this provision important for successful implementation by teachers.

Planning a program to address the needs of high risk primary grade children in beginning reading instruction must also take into account research on emerging literacy (Bussis et al., 1985; Teale, 1987; Kontos, 1988). In contrast with the traditional view of beginning reading skills which emphasize the prior knowledge of letter names and sounds (Hiebert, Stacy & Jordan, 1985; Durkin, 1987), emerging literacy skills are reflected as listening, speaking, reading, and writing abilities which develop concurrently, not sequentially, during early childhood. The resulting hierarchy of skills is related to word knowledge (Schlagel, 1982) and builds upon previous experiences of children with text (Clay, 1979a; Day et. al., 1981; Sulzby, 1985) and the associated development of the concept of word (Clay, 1979b; Morris, 1981).

These early behaviors, referred to as emerging literacy skills, are a phase of, rather than a precursor to literacy and develop in predictable ways (Teale, Hiebert, & Chittenden, 1987). They are acquired by children in a "stage-like" progression, and include traits which characterize developing cognitive and linguistic functions (Read & Hodges, 1982). Convincing evidence shows such a developmental progression can be found in the coincidence of highly specific error types among children from diverse backgrounds. These findings have been verified in several cross-cultural studies of spelling strategies used by Spanish (Temple, 1978), German (Temple & Henderson, 1982), and French children (Gill, 1980).

Read (1971, 1975), studied the "invented spellings" of preschoolers and hypothesized that children have their own system for bringing order to the task of learning to spell. Henderson (1980, 1981), and his colleagues at the University of Virginia applied the same framework suggested by Read to a new view of beginning reading and writing

processes (Beers, 1974; Gentry, 1977; Zutell, 1979). They were convinced that children take the same general course in learning about various aspects of language (Henderson, 1980). Rough developmental stages were identified through which children's spelling progresses and these results were documented in longitudinal studies (Beers & Henderson, 1977; Beers, 1980) and cross-grade studies (Gentry, 1977; Zutell, 1979).

Henderson (1980) had challenged the idea that spelling ability develops separately from, and largely as a function of, first-grade reading instruction. He argued that children's early attempts at spelling can also reveal much about their readiness for reading instruction, and that a single, although complex, entity called "developing word knowledge" underlies the ability of children to both read and spell (Morris & Perney, 1984). This "concept of word" (i.e., the spoken word/written word match) is a critical element which must precede a child's readiness to begin what we traditionally think of as beginning reading instruction.

The point at which traditional activities associated with beginning reading instruction (i.e. sight-word memorization, fingerpoint reading, phonics) become meaningful is the point at which a child acquires the concept of word, or "the awareness that spoken words are represented in text as units bound by spaces" (Clay, 1972; Ehri, 1978). Weintraub explains that concept of word is critical because "...children cannot learn to recognize words if they do not understand that words are printed units" (1971, p. 192). Until a child understands this principle of written language, he or she will be unable to develop a sight vocabulary or begin to analyze orthographic (letter-sound) patterns of written English (Morris & Henderson, 1981).

A considerable body of research exists which establishes the correlational relationships among concept of word, phoneme awareness, and the beginning reading process (Morris, 1983). Recent studies have focused on the function served by "phonemic segmentation" ability (the technical term for concept of word) in the child's developing

ability to process print (Ehri & Sweet, 1991). Recent experimental studies have asked whether phoneme awareness training makes a difference in early word recognition and developmental spelling (Ball & Blachman, 1991). The presence of phonemic segmentation ability was found to facilitate the child's ability to monitor and self-correct during fingerpoint reading (Ehri & Sweet, 1991) and phoneme awareness training was found to significantly improve the early reading and spelling skills of kindergarten students (Ball & Blachman, 1991). These specific findings were not utilized in planning the instructional intervention for this study, but serve to indicate that the field of emerging literacy research is continuing with more sophisticated and promising avenues of research to establish a strong theoretical base.

Viewing early childhood literacy development from an emergent perspective also makes it necessary to consider the experiences with text which children have had prior to entering school at the earliest grades. An awareness of the functions of reading and writing are as much a part of literacy learning as are the formal skills taught in school (Teale, Hiebert, & Chittenden, 1987). For children of all backgrounds, it has been determined that experience with written language is the factor associated with knowledge about print (Harste, Burke, & Woodward, 1983). Although children from all socio-economic levels engage in various literacy events, it has been found that the nature and length of time devoted to such activities differs for various groups of children. Storybook reading, for example, considered a literacy event highly predictive of later reading readiness, is reported at a much lower rate in low-SES families (Anderson & Stokes, 1984; Teale, 1986). The findings of this line of research underscore the need for evaluating a child's literacy development in relation to his or her own experiences. If children have not had the opportunity to explore written language in meaningful ways, schools must provide this opportunity (Purcell-Gates & Dahl, 1991). The ways in which these opportunities should

be provided for students lacking in them will require "print-rich" environments filled with trade books (Martinez, Cheney, McBroom, Hemmeter, & Teale, 1989) and other forms of meaningful text. Recently, an experimental study was conducted to determine whether print awareness could be facilitated through instructional approaches as opposed to simply providing an enriched environment. Results indicated that "teacher-led" print concept lessons showed improved gains over an "immersion in print" or "traditional readiness" approach with kindergarten students (Reutzel, Oda, & Moore, 1989).

For children from disadvantaged backgrounds, limited literacy experiences make the need for monitoring progress along these developing paths a natural extension to what basal reading programs are already prepared to do. Certain writers have suggested the use of instructional and diagnostic assessment tools to measure development of the concept of word in children (Morris, 1981), the incorporation of "invented spellings" in the writings of young children (Beers & Henderson, 1977; Henderson, 1980), and the categorization of children into stages of phonetic spellings (Clay, 1979b) which are also developmental in nature. The development of an instrument to assess and determine a child's relative standing in regard to these developing characteristics was also planned as a necessary tool for use in the pilot program under study.

In combination, consideration of the literature related to the ineffectiveness of transition-room programs to meet the needs of high risk primary students and the urgent need to accelerate the rate of progress toward beginning reading competence for these students has provided a basis for the design of the Alternative Primary Program. Relevant forms of instructional methodology taken from the research on emergent literacy and the best evidence on effective use of class size reduction were considered in defining the characteristics of this program. Success of the program will be determined by the progress

of students toward goals based on traditional measures of reading achievement, but the new forms of assessment should provide a broader view of literacy development along the way.

Chapter 3

METHODOLOGY

Sample #1: PILOT GROUP

The primary student sample consisted of the 1991-92 cohort of second grade students attending the two pilot sites for the Alternative Primary Program (APP). Students were included only if they had attended these schools throughout the first and second grade years. One of the characteristics of the APP program was heterogenous grouping of students in classes at the pilot sites. However, for identification purposes, district placement guidelines were utilized to identify students as Regular or Transitional First Grade students. Based on these classifications, Figure 1 below illustrates the students in each placement designation at each pilot site in Sample #1.

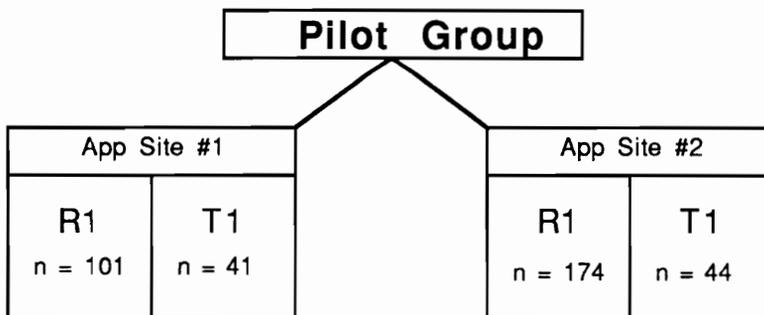


Figure 1: Students in Pilot Group by Placement Designation and Site

Sample #2: COMPARISON GROUP

For certain comparisons, second grade students attending the same schools one year previous to implementation of the APP (1990-91) were utilized. These students were designated as the Comparison Group and were also included in the study only if they had attended these schools since first beginning school. Since first grade placement procedures were fully operational in school year 1990-91, some students in this group will have experienced a self-contained Transitional First Grade placement followed by a year of Regular First Grade, while others will have only experienced the Regular First Grade year. The result is that certain students (identified as T1) in the Comparison Group are one year older than their Regular (R1) counterparts, and are one year older than T1-identified students in the Pilot Group. Based on the actual placements experienced by students in the Comparison Group, Figure 2 below illustrates the numbers of students in each placement designation at each site.

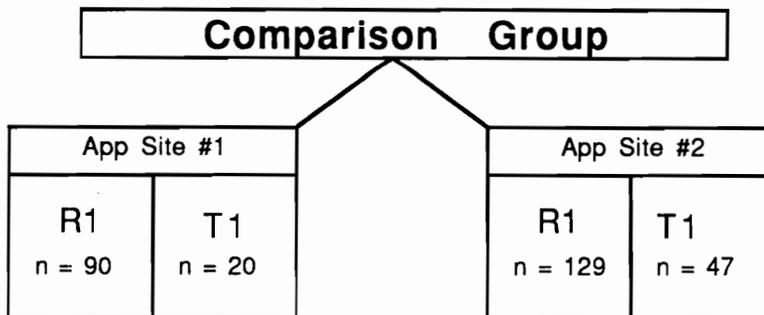


Figure 2: Students in Comparison Group by Placement Designation and Site

Setting for the Study

At the time of this study, the schools selected for the APP were serving the highest concentrations of disadvantaged students in the school district (96% and 83%), as defined by eligibility for free lunch. There had been little economic growth in the area served by these schools, and geographic zones assigned to the two schools had remained unchanged over the past several years. Neighborhoods surrounding the schools were made up of a small percentage of moderately-priced single-family dwellings and several large complexes of federally-subsidized apartment and townhome units. Although the school district had been under a court-ordered desegregation plan for establishing racial balance since the mid-1970s, the community as a whole had supported the idea of maintaining neighborhood schools in the primary grades. The result was that cross-town bussing plans involved students beginning at Grade 3, distributing more evenly the proportions of black and white students, but primary grades throughout the district took on the demographic characteristics of the surrounding communities.

Design

A major limitation to the design of this study was the fact that intact groups (the two APP pilot sites) were used to introduce the treatment. For Research Questions #1, 3, and 4 which dealt with intra-group comparisons and explanatory analyses, conclusions may be drawn with the understanding that results are not generalizable beyond the specific situation under study. For these comparisons, students in Sample #1 (Pilot Group) were used. For Research Question #2, however, where causal-comparative conclusions were sought dealing with the relative effectiveness of the APP over previous self-contained placement options in first grade, the selection of a cohort design was made. The cohort group identified for comparisons in Research Question #2 was comprised of second grade

students in the pilot site schools in 1990-91. These students were referred to in the study as Sample #2.

Cohorts are identified as groups of respondents which follow one another through an institution. Use of the cohort design was considered appropriate in this situation since the pilot sites for implementing APP were selected because they represented the schools of greatest need (highest percentage of disadvantaged students) and comparisons with student groups at any other schools in the district would therefore not have yielded fair comparisons. In such settings these groups of respondents (cohorts) are thought to be more similar to each other than are treatment groups which do not share the same home and school environments (Cook & Campbell, 1979, p. 127). Although not a satisfactory substitute for random assignment of treatments to subjects, cohort designs are recommended in settings where formal institutions implement changes which affect all members of the organization.

Conclusions drawn from a study using the cohort design will be strengthened if a strong case can be made for the similarity of cohort groups used for the comparisons. In order to minimize differences which might have occurred regarding the general experience of children in this study (i.e., economic, cultural, and social circumstances in the community and school), groups of students moving through the two schools separated by a single year (1991 and 1992 second grade groups) were selected for comparisons. This strategy of selecting two student cohorts close together in time was later found to introduce a source of confounding in the study which will be discussed in Chapter 5. At this point, however, information is presented to support the assertion that the two groups chosen for comparisons in Research Question #2 were similar in characteristics.

Cook and Campbell (1979) identify history, selection, and some forms of testing as the most likely threats to internal validity in cohort designs dealing with intact

organizations. They believe that history is the most troublesome aspect to be evaluated in such a situation. Demographic data available from the two schools indicate that no significant shifts have taken place over the past several years in the populations of students attending these schools. Since this study involved students in the early primary years, the participation of students in preschool experiences, and the availability in the community of services providing those experiences were of particular importance. School entrance forms available in both school sites provided documentation that, with the exception of the federally-funded Head Start program (serving 4-year-olds), students entering these schools received few opportunities for formalized preschool programs. The level of funding for Head Start over the past several years has permitted approximately 40% of the eligible children to be served each year, suggesting that the two cohort groups compared in the study will have had similar opportunities to receive Head Start services. Even though the opportunity for some children to attend Head Start existed, school records indicated that many children reached school entrance age without having had any preschool experiences. Table 1 reports the number and percent of children in each cohort group at each school site whose records indicated that they had participated in Head Start, Private Preschool, or No Preschool experiences. Figures in Table 1 illustrate the fact that the proportions of students in the 1991 and 1992 second grade cohort groups who entered school indicating various preschool experiences were similar, providing one indication that the choice of cohort group design for Research Question #2 should not be jeopardized by the question of history as a threat to internal validity. To address threats to validity which may have been introduced through instrumentation or testing, records were reviewed to determine the type and nature of assessment instruments used with both cohort groups of students. It was determined that no changes had taken place in the forms and procedures used for readiness testing, screening and identification of transitional first grade students, or in the use of

standardized measures for ability and academic achievement over the years just prior to undertaking this study.

TABLE 1: Preschool Experiences of Students in Pilot and Comparison Groups
(Number and Percent of Students by Site)

	PRESCHOOL TYPES		
	<u>HEAD START</u>	<u>PRIVATE</u>	<u>NO PRESCHOOL</u>
<u>Comparison Group</u>			
APP SITE #1	31 (23%)	19 (14%)	83 (63%)
APP SITE #2	58 (29%)	35 (18%)	107 (53%)
TOTAL	89 (27%)	54 (16%)	190 (57%)
<u>Pilot Group</u>			
APP SITE #1	38 (28%)	21 (15%)	78 (57%)
APP SITE #2	32 (18%)	37 (21%)	110 (61%)
TOTAL	70 (22%)	58 (18%)	188 (60%)

To illustrate the similarity of 1991 and 1992 second grade achievement by the cohort groups, two types of test results are presented. Descriptive statistics are reported in Table 2 for three consecutive years of kindergarten readiness test results (1987, 1988, 1989). Students in kindergarten during one of these years will belong to the second grade classes of 1991 or 1992 (Comparison or Pilot Groups), whether or not they experienced an extra year in Transitional First Grade. The readiness test used at that time was Houghton-Mifflin's Ready Steps Test, considered an academic reading readiness measure. The raw score for this test ranges from 0 to 120, and 100 is the cut-score considered to be reflective of the student who is "ready" to begin reading instruction. Figures in Table 2 report the

means and standard deviations of consecutive administrations of the Ready Steps Tests and reflect that scores did not vary significantly from one year to the next, nor between the two school sites within each year. An analysis of variance was run on the Ready Steps measures with year as the factor, and the results were found to be non-significant , $F(2, 776) = 1.93, p=.15$.

TABLE 2: Ready Steps Kindergarten Pretest Results for Students in 1991 and 1992 Second Grade Cohorts

<u>YEAR</u>	<u>APP SITE #1</u>		<u>APP SITE #2</u>		<u>TOTAL</u>	
1987	N = 111	M = 103.05	N = 126	M = 101.74	N = 237	M = 102.35
	S.D. = 10.42		S.D. = 10.63		S.D. = 10.59	
<hr/>						
1988	N = 112	X = 101.71	N = 131	X = 101.2	N = 243	X = 101.44
	S.D. = 13.41		S.D. = 11.88		S.D. = 12.79	
<hr/>						
1989	N = 152	X = 101.06	N = 147	X = 98.89	N = 299	X = 100.03
	S.D. = 12.57		S.D. = 11.86		S.D. = 12.03	

Table 3 reports the performance of students as expressed in quartiles on the reading comprehension subtest of the Iowa Tests of Basic Skills (Level 8). The large number of students falling in Quartiles 1 and 2 (below the 50th national percentile) each year highlights the reason that school district officials selected these schools as sites of greatest need. More to the point, however, is the fact that the distribution of performance has not changed significantly over the past three years when combined as a single group. In addition, when examined individually by school site, the similarity in student distributions

of performance remain. Appendix A contains tables of test performance expressed in quartiles by year at each school site (APP Site #1 and APP Site #2).

TABLE 3: Pilot Schools Distribution of Reading Performance (1989-1991)
Number and Percent of Students by Quartile

	1989	1990	1991
Quartile 4 (76 - 99 NPCT)	14 (07%)	30 (09%)	21 (07%)
Quartile 3 (51 - 75 NPCT)	40 (21%)	56 (18%)	64 (23%)
Quartile 2 (26 - 50 NPCT)	69 (36%)	113 (35%)	96 (34%)
Quartile 1 (1 - 25 NPCT)	70 (36%)	122 (38%)	101 (36%)
Total	193	321	282

Chi-square tests of homogeneity were performed on the distributions of student performance between sites by year. Although the distribution of test performance between the two APP sites varied somewhat in 1989, by 1990 performance at the two sites was quite similar, as it was in 1991. Results of the chi-square tests reflected a difference by site in 1989 ($p < .01$), but not in 1990 ($p = .16$), and even less so in 1991 ($p = .94$).

The multinomial form ($r \times c$) of the chi-square test of homogeneity (Daniel, 1978, p. 176-179) was conducted on the data, combined by school sites, and results indicate that distributions of student performance have not changed significantly over time: $\chi^2 (6, N =$

796) = 3.35, $p = .76$. Essentially two-thirds of the students each year have remained below the national average on reading comprehension as measured by the Iowa Tests of Basic Skills, a widely used standardized achievement measure.

Test results reported in Tables 2 and 3, and demographic information reported for cohorts of pilot site students provide data to answer Cook and Campbell's (1979) concern for history as a threat to the internal validity of the cohort design selected for a portion of this study. Although these data illustrate the comparability of student cohorts over a brief span of time (three years), other information has since come to light which challenges the validity of this design in this situation. These concerns will be discussed further in Chapter 5, but generally reflect the fact that implementing a treatment on intact groups in a school district undergoing fundamental changes to the nature of its population over an extended time period introduces a potential confounding factor in the study. The threat to internal validity identified as history by Cook and Campbell does not go far enough in this instance, and evidence demonstrating the comparability of cohort groups over a span of 3-5 years fails to address the problem. The problem presented is that urban school districts are undergoing economic and sociological changes which alter the nature of the student populations which are being served (and their achievement patterns) and in this design the effect of the treatment may not be clearly distinguishable from the effect attributable to the changing population.

Operational Definitions

Transitional First Grade Program:

Selection of students for the local school district's form of Transitional First Grade is based on procedures outlined in Appendix B. This process requires a tentative

identification of T-1 candidates in January based on completion of the T-1 Characteristic Checklist (Appendix C) and discussion with building principals. In May, the T-1 Characteristic Checklist is completed again and a recommendation by the teacher is given in the comment section of that form. Guidelines indicate that likely T-1 candidates will have a high incidence of ratings in the 3-5 range in two or more areas observed on the checklist.

Children identified by teacher recommendation as potential T-1 students are then given the Gesell School Readiness Test by examiners (usually principals or instructional specialists) trained by the Gesell Institute. Developmental ages of less than 5.5 years are considered good candidates for Transitional First Grade classes. Appendix D includes a description of the tasks included on the Gesell test and the form used to summarize results (D-2). In addition, teachers are asked to complete the Promotion/Retention Assessment Sheet (Appendix E) for all students recommended for placement in Transitional First Grades. This checklist was modeled after Light's Retention Scale (1981) and is used at all grade levels when students are considered for grade retention. The use of this instrument in conjunction with Transitional First Grade selection practices illustrates the fact that, even locally, school administrators view a transitional placement much the same as a grade retention. "Good" or "Excellent" candidates according to this scale will receive approximately 50 points or higher on the Promotion/Retention Assessment Sheet.

Guidelines suggested to teachers for the use of these three forms in the selection process recommend that students selected for Transitional First Grade will:

- receive a high frequency of 3-5 ratings in 2 or more sections of T-1 Checklist
- Developmental Age less than 5.5 on Gesell School Readiness Test
- 50 points or higher on the Promotion/Retention Assessment Sheet.

Regular First Grade Program:

The Alternative Primary Program (APP) is seen as a departure from programs which were previously in place in the form of Regular and Transitional First Grade classes. A large part of the decision to recommend students for a regular or transitional first grade placement has traditionally been based on students' mastery of discretely defined and assessed readiness tasks at the conclusion of kindergarten. Beginning reading skills were viewed as sequential in nature and built upon a collection of loosely related intellectual and behavioral skills thought to be precursors to a state of academic readiness. To illustrate, listed below are objectives taken from the readiness curriculum taught in kindergarten and a specific example of each. A complete listing of these first grade Pre-Reading Skills is included in Appendix F.

- INTELLECTUAL DEVELOPMENT

example: classifies and associates colors, objects, pictures and gives names for groups of classifications

- LANGUAGE DEVELOPMENT

example: identifies antonyms when given in pairs

- VISUAL DISCRIMINATION

example: sees likenesses and differences in letters

- VISUAL MEMORY

example: reproduces patterns of letters

- AUDITORY DISCRIMINATION

example: hears likenesses and differences in letter sounds

- FINE MOTOR SKILLS

example: writes upper and lower case letters

- GROSS MOTOR SKILLS

example: throws and catches a ball with reasonable ease

- IDENTIFICATION OF BODY PARTS

example: identifies the following - head, eyes, nose, mouth, teeth, chin, shoulder, arm, hand, wrist, elbow, legs, knee, ankle, back, stomach, waist, and hips

- DIRECTIONAL/POSITIONAL SKILLS

example: uses directional terms correctly (i.e. up, over, above, in, out, top, bottom, behind, under, beside, front, back, next to, forward and backward, right and left)

- ALPHABET RECOGNITION

example: matches upper and lower case letters

- SOUND-SYMBOL RECOGNITION

example: identifies the correct consonant when given the sound (initial and final consonants)

The Alternative Primary Program

The instructional content of the Alternative Primary Program differs primarily in its view of what represents an acceptable level of readiness for reading instruction as students enter first grade. Reading instruction in the program is based on a philosophy of continuous growth, and is supported by current trends in research on emergent literacy and child development. Whereas the regular "academic" first grade program requires the demonstration of mastery on discretely defined and assessed readiness skills at the conclusion of kindergarten, there are no such expectations placed upon students entering first grade in the pilot sites for the Alternative Primary Program. Students are brought into the program at the conclusion of kindergarten and the assessment model is designed to monitor progress through grades one and two in several interdependent areas: oral language, beginning writing, and beginning reading. Emerging literacy skills are seen as listening, speaking, reading, and writing abilities which develop concurrently, not

sequentially, through childhood. An instrument developed specifically for the Alternative Primary Program was designed to collect information on aspects of behavior seen as critical to this process:

- Sense of Story (Print Awareness and Story Language)
- Sense of Word (The Concept of Words as Grapheme Units)
- Spelling Awareness (Alphabetic Principle/Phoneme Segmentation)
- Letter/Word Recognition

Behaviors within each area appear in increasingly complex forms which are described or illustrated on the assessment instrument (Appendix G). Teachers note the traits which describe current classroom performance of students and record this information periodically on the assessment card. The experimental instrument is intended for classroom diagnostic use and produces ordinal level data which monitors student progression through three continuous stages of pre-literacy development:

- Stage I is the pre-phonetic stage where children lack a sense of the form or function of written words and show no phonemic awareness in their writing.
- Stage II is the early phonetic stage in which children are beginning to have a sense of word, and are beginning to use initial and ending consonants in their attempts at writing.
- Stage III is the phonetic stage in which children have a definite sense of word; they are able to fingerpoint accurately when following someone read aloud, and are characterized by having an instructional level in reading.

Further development and formalization of this measure will be a longterm goal of this project. However, it is mentioned here because of its relationship to the instructional program. Using the experimental form of this instrument, students are evaluated periodically on an individual basis to determine their status in regard to the areas identified. The status of students at various stages determine the kinds of instructional strategies teachers are trained to use with them. Appendix H outlines the characteristics of each developing stage and the instructional strategies recommended for students at each stage.

Measurement

The indicators of reading achievement utilized in this study were obtained from a traditional source: administration of the Word Analysis, Vocabulary, and Reading Comprehension subtests of the Iowa Tests of Basic Skills. Individual subtest standard scores for the three subtests were used as dependent measures. The internal-consistency reliability of raw scores on Word Analysis, Vocabulary, and Reading Comprehension sections of the primary level ITBS are published as .88, .86, and .92 respectively (Hieronymus, A.N. & Hoover, H.D., 1986). An estimate of the reliability of these tests for this group of students will be calculated by using Cronbach's alpha coefficient, a measure of the internal consistency found when the Iowa Tests of Basic Skills subtests are administered with this population of students.

Utilizing the descriptions of subtests and test objectives found in the Iowa Tests of Basic Skills primary battery (Hieronymus, Hoover, & Lindquist, 1986), objectives found in the three subtests selected were determined to correspond closely with grade level reading competencies specified as expectations for grade one students in the school system under study . A content analysis was conducted by specialists in reading and elementary curriculum, resulting in their agreement that reading objectives on the Iowa and those of the

school system's curriculum were closely aligned. The subjective evaluation of content area specialists was supported by findings that scores from the school system's end-of-year test in reading was positively correlated with performance on the Iowa subtests. Pearson product moment correlation coefficients between Silver Burdette & Ginn basal reading program measure for the end of Grade 2 and scores on the Iowa Tests of Basic Skills reading subtests of Word Analysis, Vocabulary, and Reading Comprehension were .79, .84, and .88 respectively.

Correlation of scores received by students on the Iowa Tests of Basic Skills subtests were also correlated with scores from the Degrees of Reading Power (Touchstone Applied Science Associates), an instrument introduced in 1992 as a districtwide measure of reading comprehension in grades 2 through 8. On the new Primary Form of the DRP (Degrees of Reading Power, TASA, 1990), students must be able to read at a minimum instructional level equivalent to the second half of second grade level in order to receive a measurable DRP score (range 15 to 85). These scores are expressed in terms of the highest level difficulty of text that a student can read with an expected level of comprehension. (For example, a second grade student receiving an instructional DRP score of 29 can read text with a difficulty of 29 DRP units with comprehension of meaning at a level of approximately 75%.) For the purposes of this study, the ability of individual students to obtain a measurable score on the DRP represents a major benchmark in reading achievement at the conclusion of the primary grades (K-2). In other words, if students can comprehend connected prose as it is presented on Forms E or F of the Degrees of Reading Power test, they will have demonstrated mastery of the complex task of reading comprehension (at the grade level required) in a real and significant way.

Analysis

The design of this study was essentially based on a randomized block factorial design. For comparisons made in Research Question #1, factorial analysis of variance was carried out on dependent variables comparing means between pilot school sites (APP #1 and APP #2) and between levels of the placement designation factor (Transitional or Regular First Grade). Figure 3 below illustrates the design shell for this analysis:

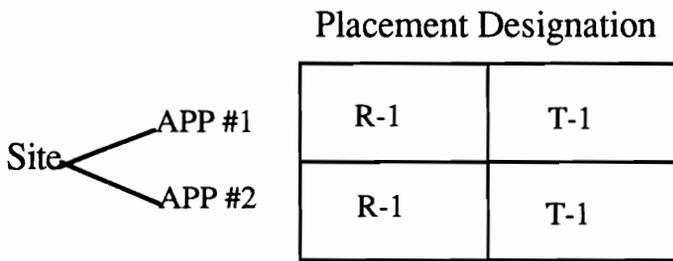


Figure 3: Design Shell for Analysis of Research Question #1

For Research Question #2, comparisons were made between consecutive cohorts of second grade students at the APP pilot sites (one before and one after the implementation of the Alternative Primary Program). Use of this design presumed that consecutive cohorts of second grade classes in the pilot sites were fairly homogeneous in nature and represented waves from essentially the same population. The data analysis for this question was also based on a randomized block factorial design in which the student groups (Pilot and Comparison) provided the primary factor of interest, and blocking factors of school site and placement designation were included as well. The design shell for this study, illustrating each level of all three factors follows in Figure 4.

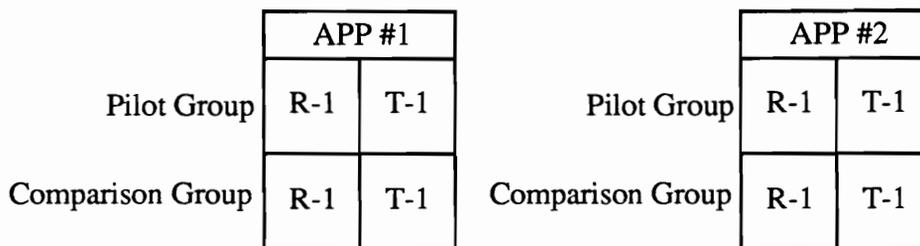


Figure 4: Design Shell for Analysis of Research Question #2

Students were designated as Regular (R1) or Transitional (T1) first grade students based on the identification made of them prior to beginning first grade. Students served as the unit of analyses in various portions of the study. In the event that differential effects are noted by school site, separate analyses will be conducted on the dependent measures of interest by school site, and tests for simple effects by student subgroup will be conducted.

Multivariate analysis of variance procedures were carried out on the reading achievement subtest scores of Word Analysis, Vocabulary, and Comprehension as measured by the Iowa Tests of Basic Skills and on the instructional level (.75) score from the Degrees of Reading Power. The following model was used to describe the effects observed:

$$Y_{ijkl} = \mu + \alpha_i + \beta_k(j) + \epsilon_{i(jk)} \quad (i = 1, 2 ; j = 1, 2; k = 1, \dots, q)$$

where i = Treatment 1, 2 (Pilot, Comparison)

j = Pilot Sites 1, 2 (APP#1, APP#2)

k = Placement Designation (T1 and R1 Students)

$\epsilon_{i(jk)}$ = error term $NID(0, \sigma^2)$.

Correlation and Regression analyses were also used in an exploratory manner to determine the relationship among kindergarten, first, and second grade achievement measures. In addition, discriminant analysis, a form of regression analysis using a categorical variable as the dependent variable, was used to predict competent and non-competent second grade readers from a linear combination of kindergarten, stage assessment, and first grade measures.

Chapter 4

RESULTS AND CONCLUSIONS

Research questions pertaining to comparisons between regular and transitional first grade students at the end of the first and second years for APP pilot students, and comparisons between APP pilot students at the end of second grade with students in the same schools one year earlier are reported in this section. These comparisons constitute the major source of data to answer questions about whether students designated as regular and transitional first grade students make comparable progress when placed together in modified first grade classrooms, whether the rate of progress made by either group changes significantly in this setting, and whether this arrangement results in significantly different overall performance by students in the grade group. Findings related to exploratory analyses of the relationship among early indicators of reading readiness and achievement are also reported.

Students at APP Pilot Site #1 and Site #2 attended two primary schools in close proximity to one another and located in economically depressed areas of the city. These students were included as subjects of study in all research questions. Students who attended the same schools one year earlier than the APP implementation were designated as the Comparison Group. Average scores on reading subtests were compared for study questions related to performance in APP pilot site schools prior to and after implementation of the Alternative Primary Program.

TABLE 4: Student Gender Characteristics of APP Pilot Group
Number and Percent of Students by Site

	<u>NUMBER OF STUDENTS</u>		
	MALE	FEMALE	TOTAL
APP SITE #1	74 (52%)	68 (48%)	142
APP SITE #2	<u>113 (52%)</u>	<u>105 (48%)</u>	<u>218</u>
TOTAL	187 (52%)	173 (48%)	<u>360</u>

TABLE 5: Student Gender Characteristics of Comparison Group
Number and Percent of Students by Site

	<u>NUMBER OF STUDENTS</u>		
	MALE	FEMALE	TOTAL
APP SITE #1	45 (50%)	45 (50%)	90
APP SITE #2	<u>89 (45%)</u>	<u>107 (55%)</u>	<u>196</u>
TOTAL	134 (47%)	152 (53%)	<u>286</u>

Tables 6 and 7 describe the student groups in terms of their placement designations as Transitional and Regular first grade students. In both tables the number of male and female students in each placement category and at each pilot site location is shown. Figures in both tables reflect that a larger proportion of students are designated "regular" first grade

students than are designated "transitional", which has been customary in this school district.

TABLE 6: Placement Designations of APP Pilot Group Students

	<u>NUMBER OF STUDENTS</u>		
	Regular First (R-1)	Transitional First (T-1)	TOTAL
APP SITE #1	101 (71%)	41 (29%)	142
APP SITE #2	<u>174 (80%)</u>	<u>44 (20%)</u>	<u>218</u>
TOTAL	275 (76%)	85 (24%)	360

TABLE 7: Placement Designations of Comparison Group Students

	<u>NUMBER OF STUDENTS</u>		
	Regular First (R-1)	Transitional First (T-1)	TOTAL
APP SITE #1	90 (82%)	20 (18%)	110
APP SITE #2	<u>129 (73%)</u>	<u>47 (27%)</u>	<u>176</u>
TOTAL	219 (77%)	67 (23%)	286

In the Pilot Group (Table 6), these placement designations reflect only classifications, not actual placements. The classifications were based on identifications made by specified district placement criteria in place prior to implementation of the APP Program. Placement designations in the Comparison Group (Table 7), however, were actual grade placements in first grade. These tables reflect the fact that approximately the same proportion of students were identified as transitional first grade students in the Pilot and Comparison Groups.

Since the Pilot Group and Comparison Group each included all students registered at these schools during the years in question, the number of students eliminated through attrition, withdrawal, and other means are of interest. With regard to the APP Pilot Group identified for study in the fall of 1990, twenty-seven students were eliminated by virtue of withdrawal from the schools or school system. (Ten students transferred to other schools within the district, and seventeen transferred outside the district.) An additional twenty-four students were systematically eliminated from the study because they were repeating first grade during the year APP was implemented. Three students in the APP Pilot Group were screened and placed in special education programs during the two years of the study, and therefore were also eliminated.

From the Comparison Group, thirty-five students were withdrawn from the schools. (Fourteen students transferred to other schools within the district, while twenty-one students transferred to schools outside the district.) Forty-three students were systematically eliminated from the study because they were first grade retainees, and an additional seven students have subsequently been determined eligible and placed in special education programs. The focus of questions in this study had to do with the effect of placement in the APP program on two specific classes of students: transitional and regular first grade students. The elimination of previously retained or special education students from these groups was consistent with the stated purposes of the study.

The following questions were posed in the study:

Research Question #1: Is the actual academic performance of transitional and regular (identified) first grade students different after one year spent together in the Alternative Primary Program (APP)? After two years in APP?

To answer this two-part question, multivariate analysis of variance was used with subtest scores of word analysis, vocabulary, and comprehension from the Iowa Tests of Basic Skills as dependent measures. School site and placement designations were used in the analysis as blocking factors. Table 8 lists descriptive statistics by school site and designation for each of the dependent measures after one year of the Alternative Primary Program.

TABLE 8: Descriptive Statistics for Reading Scores by School Site and Placement Designation for End of Year I

	<u>APP Site #1</u>			<u>App Site #2</u>			<u>Overall Totals</u>		
	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>
<u>WORD ANALYSIS</u>									
REGULAR (R-1)	100	66.2	8.8	171	61.3	11.2	271	63.1	10.6
TRANSITIONAL(T-1)	41	57.4	8.0	42	63.3	11.3	83	60.4	10.2
<u>VOCABULARY</u>									
REGULAR (R-1)	100	71.8	7.8	174	69.2	9.5	274	70.1	9.0
TRANSITIONAL (T-1)	41	68.6	7.3	43	70.8	11.5	84	69.7	9.7
<u>COMPREHENSION (ITBS)</u>									
REGULAR (R-1)	101	64.3	8.7	173	61.6	10.9	274	62.6	10.2
TRANSITIONAL (T-1)	41	60.4	8.2	43	63.7	10.12	84	62.1	9.3

These figures indicate that average scores for Regular First Grade students are higher than those of Transitional First Grade students at the first Alternative Primary Program school site, and that this is not the case at the second site. At APP Site #2, average scores of the two groups are much more similar, and scores for Transitional students, in fact, exceed those of Regular First Grade students by a small margin.

Table 9 provides descriptive statistics for the set of reading scores taken at the end of the second year of the APP. These data illustrate that, by the end of the second year of the study, average scores of Regular First Grade students at APP Site #1 well exceed those of Transitional First Grade students. This trend is reversed, however, at the second school site. At APP Site #2, average scores for the Transitional First Grade students are, for the second year, slightly higher than those of Regular First Grade students.

TABLE 9: Descriptive Statistics for Reading Scores by School Site and Placement Designation for End of Year II

	<u>APP Site #1</u>			<u>App Site #2</u>			<u>Overall Totals</u>		
	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>
<u>WORD ANALYSIS</u>									
REGULAR (R-1)	91	81.8	10.9	155	77.7	13.2	246	79.2	12.5
TRANSITIONAL(T-1)	39	69.2	9.2	43	78.0	14.8	82	73.8	11.0
<u>VOCABULARY</u>									
REGULAR (R-1)	91	84.2	10.1	155	80.4	10.9	246	81.8	10.7
TRANSITIONAL (T-1)	39	76.7	8.4	43	81.2	12.7	82	79.1	11.0
<u>COMPREHENSION (ITBS)</u>									
REGULAR (R-1)	91	84.2	12.3	152	75.8	11.9	243	78.9	12.7
TRANSITIONAL (T-1)	39	70.9	10.8	43	76.8	13.9	82	74.0	12.8
<u>COMPREHENSION (DRP)</u>									
REGULAR (R-1)	91	23.6	11.9	152	12.3	13.4	243	16.5	14.0
TRANSITIONAL (T-1)	37	5.1	10.0	38	16.4	13.3	75	10.8	13.1

Taken together, statistics in Tables 8 and 9 reveal that scores of regular (identified) first grade students are higher than those of transitional first grade students at APP Site #1, and that this pattern is not repeated at APP Site #2. This phenomenon accounts for a significant school by placement interaction effect seen in the statistical analyses when each dependent measure is analyzed separately by school and placement designation. In the Methodology section the statement was made that separate analyses would be carried out by school in the event that the pattern of results between the two sites were significantly different. Since this was found to be the case, separate multivariate analysis of variance procedures were carried out on the dependent variables obtained at each site.

APP Site #1

The MANOVA test for the hypothesis of no overall placement effect on the combination of reading scores at the end of Year I resulted in a significant finding at APP Site #1. Table 10 reports both the results of the overall multivariate F test, and the results of the individual univariate analysis of variance tests done with each subtest score in reading.

TABLE 10: Results of Year I Univariate and Multivariate ANOVA Tests of Overall Placement Effect at APP Site #1

<u>Dependent Variable</u>	<u>F</u>	<u>df</u>	<u>p-value</u>	
Word Analysis '91	31.08	1, 139	< .001	
Vocabulary '91	5.20	1, 139	< .03	
Comprehension '91	6.22	1, 139	< .001	
<u>Multivariate Test</u>	<u>Wilks' Lambda</u>	<u>F</u>	<u>df</u>	<u>p-value</u>
All Dependent	.816	10.27	3, 137	<.001

The multivariate form of the F test, based on Wilks' Lambda, was found to be significant: $F(3, 137) = 10.27, p < .001$. In addition, the result of each of the univariate tests for word analysis, vocabulary, and comprehension was also significant (at the .05 level). Reading scores were systematically higher for Regular (R-1) than for Transitional (T-1) first grade students at APP Site #1.

The result of the MANOVA test for overall grade effect at the end of Year II at APP Site #1 was also significant : $F(4, 121) = 19.68, p < .001$, as were the results of each univariate test carried out on the reading scores of word analysis, vocabulary, and comprehension as measured by the Iowa Test of Basic Skills (ITBS) and the Degrees of Reading Power (DRP). At the end of the second year, Regular (R-1) first grade students at APP Site #1 were well ahead of those identified as Transitional (T-1) first grade students on reading measures of word analysis, vocabulary, and comprehension, as measured by the Iowa Tests of Basic Skills, Level 8, and as measured by the primary form of the Degrees of Reading Power test. Table 11 reports the results of both the multivariate analysis of variance test on all dependent variables and the univariate tests of each reading score individually.

TABLE 11: Results of Year II Univariate and Multivariate ANOVA Tests of Overall Placement Effect at APP Site #1

<u>Dependent Variable</u>	<u>F</u>	<u>df</u>	<u>p-value</u>
Word Analysis '92	35.75	1, 124	< .001
Vocabulary '92	14.13	1, 124	< .001
Comprehension (ITBS)'92	31.31	1, 124	< .001
Comprehension (DRP) '92	67.66	1, 124	< .001

<u>Multivariate Test</u>	<u>Wilks' Lambda</u>	<u>F</u>	<u>df</u>	<u>p-value</u>
All Dependent	.606	19.68	4, 121	<.001

APP Site #2

The MANOVA test for overall placement effect on the combination of reading scores at the end of Year I for APP Site #2 resulted in a failure to reject the null hypothesis. In this case, the F approximation for the multivariate analysis of variance test using Wilks' criterion was found to be $F(3, 207) = 0.58, p = .63$. Scores of Regular (R-1) first grade students were not significantly different from, and were in fact slightly lower than those of Transitional (T-1) first grade students.

The Multivariate Analysis of Variance procedure carried out on the combination of reading scores for APP Site #2 at the end of the second year of the study also resulted in a failure to reject the hypothesis of no placement effect: $F(4, 182) = .85, p = .49$. Average scores of Regular and Transitional First grade students followed a similar pattern to that observed at the end of Year I. Means of Regular first grade students were not significantly different from the means of Transitional first grade students (as evidenced by a failure to reject the hypothesis of no placement effect on each univariate F test), but were in fact lower in each case.

Secondary Analyses (Re-Assigning Groups)

The fact that the pattern of results at one school site differed widely from the pattern observed at the second school site raised interesting questions. At the beginning of the study, efforts were made to ensure the comparability of student groups between the two school sites and between the previous year's cohort group and the pilot group students. The selection process for transitional first grade students was identified as a possible source of variation which could have accounted for the dissimilar findings.

On further investigation, information obtained from teachers and administrators at each school site confirmed that the selection process, while clearly laid out in district

guidelines, had been interpreted and acted upon differently at the two sites. APP Site #2 held closely to the developmental and behavioral indicators from the T-1 Checklist (Appendix B-2). These behavioral indicators were relied upon for the identification of potential transitional first grade students. The academic readiness test score (Ready Steps) was not heavily used in recommending the first grade placement.

Almost the exact opposite was found to be the case in applying the selection criteria at APP Site #1. Interviews with teachers revealed the fact that the administrator in charge at this school felt strongly about the need to ensure that regular first grade students were "academically ready". While teacher recommendations were solicited and recorded, students' scores on the Ready Steps test became, for all intents and purposes, the only criterion for determination of a placement in transitional first grade.

Having determined that the selection process at APP Site #1 was based wholly on the use of a quantitative measure (which was later determined to be a score of 98 or lower on the Ready Steps test), a secondary analysis was carried out on the data from the two schools. Rather than using the existing designation of students as Regular or Transitional for APP Sites #1 and #2 provided from the two schools, a designation called "Score Grade" was used to re-assign students as potential Regular or Transitional first grade students, based solely on the score from the Ready Steps test. By using this criterion, the designation of students as Regular (R-1) and Transitional (T-1) did not change at APP Site #1, but changed substantially at APP Site #2. Table 12 reports the number and percent of students at each school site who were designated as Regular or Transitional First Grade students by each method of classifying students.

One difference immediately seen is that the number of students identified as Transitional at Site #2 is more than three times the number of students identified previously under the assigned grade based on district placement guidelines. On a purely practical

basis, this may help to explain the reason that Site #2 utilized other factors for identifying Transitional (T-1) students. Districtwide, typically 20-30% of first grade students have customarily been identified as Transitional students. It would not have been acceptable politically for a school to identify a larger number of Transitional than Regular first grade students in a given year.

TABLE 12: Students Designated As Regular and Transitional by District Guidelines and "Score Grade" Criterion

	DISTRICT PLACEMENT	"SCORE GRADE" CRITERION
	<u>Number and Percent of Students</u>	
APP SITE #1		
Regular First	101 (71%)	101 (71%)
Transitional First	41 (29%)	41 (29%)
TOTAL	142	142
APP SITE #2		
Regular First	174 (80%)	85 (39%)
Transitional First	43 (20%)	132 (61%)
TOTAL	217	217

By using the Score Grade criterion, 89 students would be re-classified as Transitional First Grade students at APP Site #2. Placement designations of students at APP Site #1 did not change based on the Score Grade criterion.

Table 13: Students and Placement Designation by Assigned Grade and Score Grade for APP Site #2

<u>Assigned Grade</u>	<u>Score Grade</u>		<u>TOTAL</u>
	<u>SR-1</u>	<u>ST-1</u>	
Regular First	85 (49%)	89 (51%)	174
Transitional First	4 (09%)	39 (91%)	43

Table 13 reports the number and percent of students in each placement designation by assigned grade (using district placement guidelines) and by the Score Grade criterion at APP Site #2. These figures illustrate that 51% of students designated as Regular First Grade students using the assigned grades given students at APP Site #2 would have been re-classified as Transitional First Grade students if the Score Grade criterion had been used to assign the grade placement. In addition, 4 additional students previously designated as Transitional First Grade students would have been classified as Regular First Grade under the Score Grade criterion. The greatest impact would clearly have been seen in the re-classification of a large number of students with low academic readiness scores to designations as Transitional First Grade students, rather than a change in the opposite direction.

Table 14 reports the descriptive statistics on reading scores at the end of Year I using the Score Grade criterion to classify students. Aside from the difference seen in the number of students classified as Regular and Transitional students by the "Score Grade" criterion, the pattern of results by category of student has also changed somewhat. Using the Score Grade criterion to classify students, average scores for Regular and Transitional students at APP Site #2 are more similar to the average scores of similarly designated students at APP Site #1. The average scores of Regular students at APP Site #2 were higher than those of Transitional students under the Score Grade criterion (the pattern seen previously at Site #1).

TABLE 14: Descriptive Statistics for Reading Scores by School Site and "Score Grade" for End of Year I

	<u>APP Site #1</u>			<u>App Site #2</u>			<u>Overall Totals</u>		
	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>
<u>WORD ANALYSIS</u>									
REGULAR (R-1)	100	66.2	8.8	85	61.3	11.2	185	65.8	10.1
TRANSITIONAL(T-1)	41	57.4	8.0	128	59.4	10.3	169	58.8	11.1
<u>VOCABULARY</u>									
REGULAR (R-1)	100	71.8	7.8	85	70.7	10.0	185	71.3	8.9
TRANSITIONAL (T-1)	41	68.6	7.3	132	68.7	9.9	173	68.7	9.3
<u>COMPREHENSION</u>									
REGULAR (R-1)	101	64.3	8.7	85	64.6	11.0	186	64.4	9.8
TRANSITIONAL (T-1)	41	60.4	8.2	131	60.4	10.3	172	60.4	9.8

Table 15 reports the descriptive statistics for reading scores taken at the end of the second year of the study using Score Grade as the criterion for classifying students as Regular or Transitional First Grade. These figures illustrate the same pattern seen in Year I scores with average scores of Regular (identified) students higher than those of Transitional students at both sites. The difference between average scores of Regular and Transitional students is less at APP Site #2 than at Site #1. Average scores of Regular First Grade students are higher at Site #1 than at Site #2; average scores of Transitional students are higher at Site #2 than at Site #1.

TABLE 15: Descriptive Statistics for Reading Scores by School Site and "Score Grade" for End of Year II

	<u>APP Site #1</u>			<u>App Site #2</u>			<u>Overall Totals</u>		
	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>
<u>WORD ANALYSIS</u>									
REGULAR (R-1)	91	84.2	10.1	79	81.1	14.0	170	81.5	12.4
TRANSITIONAL(T-1)	39	76.7	8.4	119	75.6	12.8	158	75.9	9.1
<u>VOCABULARY</u>									
REGULAR (R-1)	91	84.2	10.1	79	83.4	12.2	170	83.8	11.1
TRANSITIONAL (T-1)	39	76.7	8.4	119	78.7	10.3	197	78.3	9.9
<u>COMPREHENSION (ITBS)</u>									
REGULAR (R-1)	91	84.2	12.3	78	79.3	13.9	169	81.9	13.3
TRANSITIONAL (T-1)	39	70.9	10.8	117	73.8	10.7	156	73.1	10.7
<u>COMPREHENSION (DRP)</u>									
REGULAR (R-1)	91	23.6	11.9	78	20.4	11.4	169	22.1	11.8
TRANSITIONAL (T-1)	37	5.1	10.0	112	8.0	12.4	149	7.3	11.9

Even though the re-assignment of students by use of the score grade resulted in a pattern of results more similar in both schools, separate analyses by school site were still necessary. The analysis of variance procedures carried out on individual reading measures with school and "Score Grade" used as factors in the model resulted in school by "Score Grade" interaction effects, suggesting that the pattern of results by school was markedly different.

APP Site #1

The MANOVA test for overall "Score Grade" effect at Site #1 resulted in the same finding as previously reported since the change to the "Score Grade" criterion only affected the designation of students at APP Site #2. To recap, the MANOVA resulted in a significant effect attributable to designation as Regular or Transitional first grade students. Using Wilks' criterion, the multivariate form of the F test resulted in the following: $F(3, 137) = 10.27, p < .001$. Average scores on all reading subtests were significantly lower for Transitional (T-1) than for Regular (R-1) first grade students. These results were consistent at the end of Year II with similar results from the MANOVA conducted on all reading scores. Results of the multivariate form of the F test resulted in significant finding: $F(4, 121) = 19.68, p < .001$.

APP Site #2

The MANOVA test for overall "Score Grade" effect at Site #2 resulted in a different finding than that seen with the previous placement designation based on the school's behavioral/developmental criteria. By using the strictly quantitative "Score Grade" designation for selecting Transitional students, the result was a finding supporting the overall "Score Grade" effect. Table 16 reports the findings of the individual univariate analysis of variance tests on each reading subtest score and the multivariate analysis on the set of reading scores taken at the end of Year I at the second school site. These figures reflect that Word Analysis and Comprehension scores differ significantly as a function of the Score Grade criterion at the end of the first year of the study, but Vocabulary does not. Nonetheless, differences in Word Analysis and Comprehension were sufficient to influence

the overall multivariate test to result in a rejection of the hypothesis of no overall Score Grade effect: $F(3, 207) = 6.24, p < .001$.

TABLE 16: Results of Year I Univariate and Multivariate Tests of Overall Score Grade Effect at APP Site #2

<u>Dependent Variable</u>	<u>F</u>	<u>df</u>	<u>p-value</u>
Word Analysis '91	15.12	1, 209	< .001
Vocabulary '91	.78	1, 209	ns
Comprehension '91	6.52	1, 209	< .001

<u>Multivariate Test</u>	<u>Wilks' Lambda</u>	<u>F</u>	<u>df</u>	<u>p-value</u>
All Dependent	.917	6.24	3, 207	<.001

TABLE 17: Results of Year II Univariate and Multivariate ANOVA Tests of Overall Score Grade Effect at APP Site #2

<u>Dependent Variable</u>	<u>F</u>	<u>df</u>	<u>p-value</u>
Word Analysis '92	5.29	1, 185	< .003
Vocabulary '92	5.28	1, 185	< .01
Comprehension (ITBS) '92	7.57	1, 185	< .01
Comprehension (DRP) '92	45.20	1, 185	< .001

<u>Multivariate Test</u>	<u>Wilks' Lambda</u>	<u>F</u>	<u>df</u>	<u>p-value</u>
All Dependent	.769	13.61	4, 182	<.001

Table 17 reports the findings of the MANOVA and individual univariate analysis of variance tests on individual reading measures for the end of Year II. These findings reflect significant results for the Score Grade effect on individual analysis of variance tests of each reading measure, and on the combination of reading scores. The result of the MANOVA, using Wilks' Lambda, was $F(4, 182) = 13.61, p < .001$. First and second year results were similar with regard to the overall Score Grade effect at APP Site #2. At the end of the first year, significant differences were seen as a function of the Score Grade classification in word analysis and comprehension, and by the end of the second year, significant differences were seen on all measures.

Conclusions Research Question #1:

Findings from the statistical analyses utilized for the first research question reveal that the level of achievement demonstrated by Regular and Transitional First Grade students is discernibly different. It seems clear that the use of academic indicators for designation of students as Regular or Transitional results in the clearest differentiation of students in terms of later achievement. The evidence at APP Site #1, which utilized a straightforward method of selecting students for Transitional First Grade based solely on a cut-score from an academic readiness measure, clearly demonstrated higher performance by Regular students than Transitional students by the end of the first year of the study, and again by the end of the second year. Findings at the second school site (APP Site #2) were at first contrary to those seen at Site #1. Average scores for Transitional First Grade students were slightly higher than those for Regular First Grade students at the end of both years of the study.

When the placement process at the second school site was determined to have been applied differently than the process carried out at the first site, a re-assignment of students

was done at APP Site #2. The re-assignment of students based on scores received on the academic readiness test resulted in findings more similar to those found at the first site. Based on the new assignment by "Score Grade", Regular First Grade students outperformed Transitional First Grade students at the end of both years of the study. It should be noted, however, that the average scores for Regular and Transitional First Grade students (in their newly assigned designations by Score Grade) were closer together than average scores of the two groups at the first site. In other words, regardless of how students were designated as Regular or Transitional First Grade students at APP Site #2, the level of performance of the two groups is more similar than performance of similar groups at the first site. Since the goal of the Alternative Primary Program was to develop a classroom model which accommodates the diversity seen in incoming first grade students, the similarity in later achievement scores seen at APP Site #2 may be significant in a positive sense. The fact that the performance of students identified as Regular and Transitional is similar suggests that the classroom strategy has been somewhat successful at dealing with varying levels of academic readiness in students entering first grade. The performance of Transitional (identified) students at APP Site #2 was of particular interest when viewed in combination with a savings of one year of time spent in schooling for this group of students.

Research Question #2: After two years in the APP, is the reading achievement of Transitional and Regular (identified) students different from that of students in a previous year group who had experienced a self-contained transitional or regular first grade year ?

To answer this question, multivariate analysis of variance techniques were used to compare the second grade reading achievement test scores of Pilot and Comparison Group

students. This question dealt with the matter of relative performance of grade groups before and after implementation of the Alternative Primary Program. The question here had to do with whether the level of performance by first grade students (Transitional and Regular) under the Alternative Primary Program differed with that of similarly designated students in the previous year's cohort group. This comparison necessarily paired groups of students who were the same chronological age (Regular) and groups of Transitional students one year older in the Comparison Group with those one year younger in the Pilot Group. Table 17 reports descriptive statistics for reading scores of Regular First Grade students in the Pilot Group (1992) and those students in the Comparison Group the year before implementation of the Alternative Primary Program.

Table 18: Reading Scores of Regular and Transitional First Grade Students in Pilot and Comparison Groups

	<u>Regular First (R-1)</u>			<u>Transitional First (T-1)</u>			<u>Overall Totals</u>		
<u>WORD ANALYSIS</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>	<u>n</u>	<u>M</u>	<u>s.d.</u>
Pilot	289	76.4	13.5	73	75.9	13.7	362	76.3	13.5
Comparison	218	83.5	11.8	67	79.8	11.6	285	82.6	11.8
 <u>VOCABULARY</u>									
Pilot	289	80.1	11.2	73	79.6	11.3	362	80.0	11.2
Comparison	219	85.4	10.2	67	82.6	9.6	286	84.7	10.1
 <u>COMPREHENSION (ITBS)</u>									
Pilot	286	76.5	14.2	73	74.8	12.3	359	76.1	13.8
Comparison	218	83.0	12.0	67	78.1	11.0	285	81.8	12.0

A review of overall scores in Table 18 reflects the fact that average scores of second grade students in the Pilot Group (after implementation of the Alternative Primary Program) were somewhat lower than scores of second grade students in 1991. The greatest difference in total scores was seen in word analysis (6.3 points), and the least was seen in vocabulary (4.7 points). Average scores for Regular First Grade students registered the widest discrepancy when compared to the previous year's cohort group in the area of word analysis skills (7.1 points) and the least difference was seen in the comprehension area (1.7 points). Scores for Transitional students were also somewhat higher in the year prior to APP implementation (Comparison Group). Differences across areas were more consistent for Transitional students, however, at approximately 3 points difference in each case. Implications regarding the magnitude of these differences will be discussed more thoroughly in the next chapter.

Table 19 reports the results of the individual univariate analysis of variance tests for each dependent measure and the MANOVA result for the the combination of reading scores.

TABLE 19: Results of Univariate and Multivariate ANOVA Tests of Placement Effect by Pilot and Comparison Group

<u>Dependent Variable</u>	<u>F</u>	<u>df</u>	<u>p-value</u>
Word Analysis	20.38	2, 640	< .001
Vocabulary	17.47	2, 640	< .001
Comprehension	18.75	2, 640	< .001

<u>Multivariate Test</u>	<u>Wilks' Lambda</u>	<u>F</u>	<u>df</u>	<u>p-value</u>
All Dependent	.935	14.83	3, 638	<.001

Analysis of variance procedures were first carried out on the dependent variables using a model including treatment (Pilot or Comparison Group), placement (Regular or Transitional First Grade), and treatment by placement as a possible interaction effect. Since none of the individual analyses resulted in a significant treatment by placement interaction effect, it was dropped from the model for the multivariate procedure carried out on the group of reading scores. A significant placement effect (i.e., Regular or Transitional grade student) was seen in the case of each reading measure and the multivariate test carried out on the combination of reading scores: $F(3, 638) = 14.83, p < .001$. These findings indicate that scores obtained by the Comparison Group (in 1991) were significantly different from those obtained by the Pilot Group (in 1992), resulting in a rejection of the hypothesis for no difference due to the factor of treatment (APP implementation).

These differences were seen as somewhat higher scores for students in the 1991 Comparison Group than for students in the 1992 Pilot Group. The difference was greatest in word analysis for Regular First Grade students, with a difference of 7.1 points seen in the average standard score received by students in the year prior to APP implementation, and least in reading comprehension of Regular First Grade students, with a difference of 1.7 points seen between the Comparison and Pilot groups. For Transitional First Grade students, average scores were approximately 3 points lower in the year group following implementation of the Alternative Primary Program. The magnitude of these differences should be evaluated in light of published statistics available from the norming process for the Iowa Tests of Basic Skills (1986 edition). For the test given at this level (ITBS Form H, Level 8), the standard deviation reported (in standard scores) for the spring scores in word analysis was 16.55, for vocabulary 14.03, and for comprehension 16.54 (Hieronymous & Hoover, 1986). Implications regarding the magnitude of these differences will be discussed further in the next chapter.

Conclusions Research Question #2

Results of the statistical analyses carried out for the second research question indicate that performance on subtests of the ITBS in the year following implementation of the Alternative Primary Program was somewhat lower than the year prior to implementation. For Transitional First Grade (identified) students, the difference of approximately 3 points in each subtest amounts to less than one-fourth of a standard deviation in each case. An important caveat to these findings is the fact that Transitional students in the Comparison Group were a year older, having experienced a year placement in Transitional First Grade as well as a year in first and second grade. Transitional (identified) students in the Pilot Group had experienced the two years in APP only. Progress of Transitional (identified) students made in two years, as opposed to the three years spent in school by the previous year's cohort must be considered worthwhile, and in no case does the magnitude of these differences exceed one-half of one standard deviation, as reported in the technical manual for the Iowa Tests of Basic Skills (Hieronymous & Hoover, 1986). Nevertheless, differences in average scores of Pilot and Comparison Group students on each subtest were found to be statistically significant. Given the low level of achievement at the pilot schools which warranted implementation of a special program, the decision to continue the program based solely on these results would be ill-advised.

The issue of validity with regard to the selection process for Transitional First Grade students was raised in Chapter 1 as an underlying question throughout the study, and the analysis of the first research question brought this concern to the forefront. Although it seems clear that this issue is one which could be explored further, the more

important question seems to be one of identifying students who will need some form of intervention, regardless of the form it takes.

This question was addressed in the following two related questions:

Research Question #3: Could early indicators be combined in a model to explain later reading achievement in second grade as measured by the Degrees of Reading Power test?

Using regression analysis, data available for the Pilot Group students was analyzed in a stepwise selection process to identify predictors of later reading achievement, as measured by performance on the primary form of the Degrees of Reading Power test. Entered as independent variables for prediction were: Ready Steps scores collected prior to first grade, Stage Designation (Literacy Assessment) collected during the fall of first grade, and ITBS Word Analysis, Vocabulary, and Comprehension scores collected in the spring of first grade. Additional achievement test scores were collected in the spring of second grade: Word Analysis '92, Vocabulary '92, and Comprehension '92.

Early exploratory analysis included the calculation of correlation coefficients to determine the relationship among the various scores reported. All dependent variables collected in the course of the study were included for the calculation of correlation coefficients based on combinations of score pairs. Table 20 presents the correlation matrix reporting relationships seen among the various scores available for pilot students in the study. These data reflect the fact that variables present are all positively correlated. Strength of the reported correlation coefficients vary from a low of .26 (between Ready Steps and first grade Vocabulary ITBS score) to a high of .76 (between Ready Steps and second grade DRP score and between second grade Vocabulary and Comprehension ITBS scores).

Although all achievement measures obtained from students in kindergarten through second grade were available for analysis, the purpose of this research question was to determine which measures would be most helpful as predictors of later achievement. Therefore, since the relationship of early indicators to later achievement is of particular importance, pretest and achievement scores obtained in kindergarten and first grade only were included in the regression analyses. The Degrees of Reading Power measure represented the most noteworthy outcome measure available for estimating proficiency in reading comprehension and therefore was selected for the dependent measure in the regression analysis.

TABLE 20: Correlation Among Dependent Variables for Pilot Group Students

	<u>Ready Steps</u>	<u>STAGE</u>	<u>WA91</u>	<u>VOC91</u>	<u>RC91</u>	<u>WA92</u>	<u>VOC92</u>	<u>RC92</u>	<u>DRP</u>
<u>Ready Steps</u>	1.00	.38	.53	.26	.39	.44	.49	.59	.76
<u>STAGE</u>	-	1.00	.52	.36	.47	.48	.47	.51	.45
<u>WA91</u>	-	-	1.00	.51	.56	.55	.57	.61	.54
<u>VOC91</u>	-	-	-	1.00	.54	.36	.38	.40	.32
<u>RC91</u>	-	-	-	-	1.00	.37	.41	.48	.40
<u>WA92</u>	-	-	-	-	-	1.00	.70	.69	.61
<u>VOC92</u>	-	-	-	-	-	-	1.00	.76	.65
<u>RC92</u>	-	-	-	-	-	-	-	1.00	.75
<u>DRP</u>	-	-	-	-	-	-	-	-	1.00

information can be used to determine that any variables with variance inflation factors which exceed 2.66 are more closely related to other independent variables than to the dependent variable. In the full model Word Analysis approaches, but does not reach the VIF level indicating a collinearity problem.

Stepwise multiple regression, using the maximum R^2 improvement method for selection of variables for the model, was also used to analyze the data. This method evaluates all possible variables in a model and selects the best possible one-variable model and then proceeds by selecting the next variable which yields the greatest increase in R^2 . The process selects the best possible one-variable model, two-variable model, and so forth. The variables of Ready Steps and Stage were selected first and second in the model explaining a total of .61 R-Square in variation of the DRP score. Achievement measures obtained at the end of grade one (ITBS Word Analysis, Vocabulary, and Comprehension scores) did not contribute significantly to the explanation of DRP performance beyond what was already known from the first two variables selected. From information gathered at an early stage, therefore, the stepwise multiple regression conducted resulted in the following equation which could be used to predict later achievement on the DRP:

$$\text{DRP} = -89.1 + 3.12(\text{STAGE}) + .99(\text{READY STEPS})$$

Conclusions Research Question #3

Although all five independent variables predicting DRP achievement were entered into the stepwise regression analysis, the main interest was in which variables, available at an early stage in schooling, would be most helpful in explaining later achievement in reading comprehension as measured by the Degrees of Reading Power comprehension test.

Therefore, the fact that achievement measures obtained at the end of first grade were not powerful predictors of later reading comprehension was significant in terms of suggesting that early identification would be a possibility.

Research Question #4: What indicators were most helpful at predicting which students would become competent second grade readers (as defined by a level of reading comprehension on the DRP) after two years of schooling in the APP?

Explaining the variation in Degrees of Reading Power performance by way of an equation relating Stage designation and Ready Steps score provides information of a descriptive nature. The purpose of this question, however, was to determine whether competent and non-competent second grade readers could be identified as a function of early indicators. The descriptors of "competent" and "non-competent" were based on DRP scores which appeared in published spring norms for second grade and were associated with satisfactory comprehension of reading material designated as second grade (first semester) level. More specifically, this question was concerned with whether or not the Stage Assessment obtained in the fall of first grade could provide information sufficient individually, or in combination with other variables, to correctly classify the majority of students later as competent or non-competent readers. The answer to this question would be useful to instruct the later development of the stage assessment instrument as a tool for student diagnosis, and to determine whether it holds promise as an instrument able to identify students in need of early intervention in reading.

To answer the first part of this question, stepwise discriminant analysis was used. Competent readers were defined as students who received a DRP score of 15 or higher on the primary form of the Degrees of Reading Power test administered in the spring of

second grade. Variables introduced were indicators available from kindergarten and first grade. The stepwise process begins with no variables in the model and selects at each step the variable that contributes most to the discriminatory power of the model, as measured by Wilks' lambda. The process stops when all variables in the model meet the criterion to stay, and no other variables meet the criterion to enter the model. When Ready Steps, Stage, and first grade achievement measures were entered, the stepwise discriminant analysis selected two variables as most powerful discriminators: Ready Steps and Stage. The summary table produced at the conclusion of the stepwise discriminant analysis is shown below:

TABLE 22: Summary of Stepwise Discriminant Analysis Predicting Reader/Nonreader Group Inclusion

<u>Step</u>	<u>Variable</u>	<u>Partial R²</u>	<u>F</u>	<u>P-Value</u>	<u>Wilks' Lambda</u>	<u>ASCC</u>
1	Ready Steps	.438	268.45	<.001	.562	.438
2	Stage	.013	4.43	<.04	.554	.445

Results of the stepwise discriminant analysis produced the same results as the previous regression analysis in terms of the order and significance of independent variables useful in predicting DRP performance. If the discriminant analysis has resulted in a discriminant rule which will separate groups of "competent" and "non-competent" readers well, Wilks' Lambda will approach zero, and the average squared canonical correlation (ASCC) will approach one. In order to test whether the discriminant function has produced a useful tool for classifying future observations, two tests of significance may be utilized.

Group centroids are obtained by applying the vector of weighting coefficients to the mean scores of the original variables for each group. Taking the difference between the group centroids yields the sample estimate of the Mahalanobis distance (D^2). The D^2 statistic can be used to determine if the between group differences are statistically significant in terms of mean separation and is distributed approximately as an F distribution. Testing D^2 resulted in a finding of significance: $D^2 = 50.33$ (df 2, 350, $p < .01$). In addition, testing of Wilks' Lambda in the context of discriminant analysis in which only two groups are being studied is tantamount to a test of R^2 when a coded vector is used to identify group membership in a regression analysis. The result of this test was also significant: $F = 140.63$ (2, 350) $p < .01$).

Reviewing the information available for 353 students in the APP Pilot Sites, it was possible to compare the predicted and actual classifications of students, based on quantitative data obtained. Using the calculated discriminant function, the majority of cases (85%) would have been properly classified. Only 15% of the cases (53 students) would have been misclassified (i.e., readers predicted to be non-readers or non-readers predicted to be readers). Table 23 reports the number and percent of students classified as readers and non-readers by the discriminant function compared with those who are actual readers and non-readers based on Degrees of Reading Power achievement.

The discriminant rule for assigning observations to groups was determined to be:

$$Y = 15.81 + .0799 X_1 + .0343 X_2$$

TABLE 23: Classifications of Readers and Non-Readers by Discriminant Function
Number and Percent of Students Reported

Based on Discriminant Function:

<u>Actual Readers:</u>	NO	YES	TOTAL
NO	141 83.43	28 16.57	169 100%
YES	25 13.59	159 86.41	184 100%
TOTAL	166	187	353
PERCENT	47.03	52.97	100%

Conclusions Research Question #4

Based on results of the discriminant analysis in Question #4, it seems reasonable to assume that sufficient information is available from indicators in kindergarten or early in first grade to identify students who would likely require intervention efforts in the area of reading instruction. However, from the discriminant analysis conducted with students in the pilot group, it is clear at this point that Ready Steps, the academic readiness test was a more powerful predictor and therefore more critical as a tool for student identification than was the Stage assessment. It appears that Stage assessment, in combination with academic readiness testing provides the best information available at this point in time for identifying

students likely to encounter substantial difficulty in acquiring reading comprehension ability within two years of schooling in the Alternative Primary Program.

Secondary Analyses

To address the question of reliability of the Iowa Tests of Basic Skills with the population of students used in this study, Cronbach's alpha coefficient was calculated using item responses of students at both pilot school sites. Internal consistency reliability estimates were reported in the technical manual as .88, .86, and .92 for the word analysis, vocabulary, and comprehension sections of the primary form of these tests . A concern was raised as to whether the population on which this measure was normed might be significantly different from the population under study. If this were the case, calculated correlation coefficients might then be lower rank for the population of pilot site students and therefore might affect the confidence with which findings were evaluated. This concern did not seem founded, however, since calculated coefficients using the Kuder Richardson 20 formula for dichotomously scored items were as follows: word analysis .91; vocabulary .90; comprehension .89.

Chapter Five

DISCUSSION

The implementation of the Alternative Primary Program in the school district under study has concluded with mixed results. It is clear that overall second grade achievement levels in reading have not increased at the two schools involved. From the point of view of parents, community leaders, and school board members, this is disappointing news since increased achievement was the outcome most desired as a result of this labor and resource-intensive program. Instead, achievement levels were found to be essentially unchanged or somewhat lower and overall performance remains around the 25th national percentile ranking.

A major characteristic of the program was the heterogenous grouping of students identified as Regular and Transitional First Grade. Students who were designated as Transitional obtained scores slightly lower than the previous year's cohort, but these losses, all of which were less than one-fourth of a standard deviation in magnitude, could be considered less important when the fact that a year spent in a self-contained Transitional First Grade was not necessary. This was the most positive finding of the study. It was true that test scores for Transitional (identified) students did not go up; in fact, they declined slightly, but the level of achievement earned by these students took place in one-third less time and within the setting of regular first grade classrooms.

Slightly larger declines in test scores were seen for Regular (identified) First Grade Students, although the magnitude of these declines was also less than one-half a standard

deviation in all cases. This finding was extremely important from a political and instructional standpoint. The larger proportion of first grade students are designated as Regular First Grade students and any declines in scores registered by this larger group are undesirable in the sense that more students will be affected. In addition, teachers and parents have expressed concerns that heterogenous grouping of students, while it may positively affect the learning of students lacking in readiness skills, may also "slow down" the pace of instruction for more able students in the same classrooms. The characteristic of the program which provided smaller class sizes (15:1 student-teacher ratios) was an attempt to ameliorate the effect of including students in classes who would require a greater dedication of time spent by the teachers in meeting individual needs. If students designated as Regular First Grade students are not making progress at the previous rate (prior to inclusion of Transitional (identified) students), the implications are that the APP would need to make modifications immediately to address this concern.

A Possible Confounding Factor

In the Methodology section, a concern was raised regarding the cohort design utilized in this study. Although this design was the only viable option seen in these circumstances, factors influencing the student population of the district as a whole, and the target population of high risk students in particular, were interacting in ways which must be considered. Mentioned earlier, the threat to internal validity presented by history was addressed by selecting student cohorts separated by a single year, so as not to allow the passage of time to introduce great changes to occur culturally, economically, or politically. The narrow timeframe failed to account, however, for the more substantial changes over

time which appear in more subtle form when viewed from the perspective of a two-year timeframe.

The schools selected for implementation of the Alternative Primary Program were selected because they were considered to be in extreme need of improvement. Test scores were dismal and had gradually declined to that level over several years. The student populations served in these two schools had always been disadvantaged because the neighborhoods which were assigned to them were disadvantaged. Can we assume that the level of disadvantage does not change?

Are disadvantaged students the same today as they were 10 years ago? 5 years ago? The economy has experienced a recession in the last 3-5 years. This region, in particular, has experienced lay-offs and cutbacks by several major employers resulting in the loss of several thousand jobs. When jobs are lost nationally, do people move to or away from cities?

In the last 10 years, this city has increased steadily in its population of school-age residents. Table 24 illustrates the rate of increase seen in school-age residents obtained during the last several tri-ennial censuses required by state law.

Table 24: Number of School-Age Residents Counted in Census Counts

<u>YEAR</u>	<u>AGE RANGES</u>			<u>TOTAL</u>
	<u>1-5 YRS.</u>	<u>6-13 YRS.</u>	<u>14-17 YRS.</u>	
1983	10, 180	19,872	9,486	39,538
1986	10,345	19,567	10,008	39,920
1989	10,580	22,029	9,213	41,822
1992	11,928	23,420	9,469	44,817

Table 24 illustrates that over the last three years of economic recession (1989-1992), the city has experienced the greatest increase in school-age population seen over the past decade (an increase of 2995 students). Over the same timeframe, a commensurate steady increase has also been seen in the percent of free and reduced lunch-eligible students. Table 25 reports the average number and percent of reduced and free lunches sold to students (based on the preceding school years).

TABLE 25 Average Number and Percent Free and Reduced Lunches Sold

<u>SCHOOL YEAR</u>	<u>REDUCED</u>	<u>FREE</u>	<u>TOTAL</u>
1986-87	1103 (.08)	5719 (.39)	14,652
1987-88	1155 (.08)	5873 (.39)	14,926
1988-89	1211 (.08)	6154 (.40)	15,225
1989-90	1340 (.08)	6582 (.42)	15,808
1990-91	1513 (.09)	7206 (.44)	16,237
1991-92	1455 (.09)	7902 (.47)	16,704

Figures in Table 25 reflect that the greatest increases in free and reduced lunch consumptions have taken place over the course of the last three years, indicating again that proportions of needy students have increased over time, and that the increase over the past three years has been at a higher rate than previously seen. In combination, these data reflect a gradually increasing student population, larger proportions of which are economically disadvantaged to a greater extent than ever before.

When the larger student population is shifting (within which a target population exists), it makes it difficult to draw conclusions with any conviction regarding the findings

of research questions. Do the declines seen for Regular (identified) students signal a failure of the APP classroom strategy to adequately address the needs of more able students in heterogeneous groups with Transitional (identified) students, or are the declines more attributable to larger proportions of more academically needy students in general? We can only wonder and make carefully worded and tentative suggestions about the direction the program should take.

Findings from quasi-experimental designs dealing with intact groups in educational field research settings often are left with these or similar concerns. There is a clear potential for confounding introduced in this situation which the cohort design has not been able to adequately address. The only real possibility for studying the impact of a strategy or program on a shifting population is through the use of experimental methods where random assignment of subjects to methods is a requisite part of the design. Most any other approach will inevitably leave us with more questions than answers about the outcome of the study.

Implications for Further Research

The exploratory analyses carried out in Research Questions #3 and #4 suggest that further development of the Stage Assessment instrument is desirable and that use of this diagnostic measure to determine a child's status with regard to pre-literacy development will provide additional information to tailor instruction to the needs of individual students. The major contribution of this work has been the provision of detailed instructional strategies to be used with children at various stages of pre-literacy development. These strategies are made explicit in the documentation and training provided to all teachers in the Alternative Primary Program. Prior to the incorporation of this approach to dealing with

young children who are lacking in reading readiness, there were few instructional strategies known to teachers aside from use of the basal textbook approach to the teaching of beginning reading. Rote memorization of letters and words with direct application to the written word in pre-primer materials was the starting point at which all children were presumed able to begin. Stage assessment at the earliest point at which children enter school diagnoses for teachers the point at which they are currently functioning in several critical areas: developing a concept of word, print awareness, spelling awareness, and letter/word recognition. The importance of the diagnostic assessment is in its utility for the teacher to customize student activities to the developing needs of the child.

Findings of the regression analyses suggest that the Stage Assessment obtained from children as they enter first grade contributes substantially to the prediction of later reading achievement. The Stage Assessment is correlated with the measure of academic readiness (.38) which was available for the students in the study. Further work in development of the Stage Assessment instrument will focus on identifying what information is duplicated and what information is unique from each source. In addition, further research is planned to investigate how the various components assessed as part of the stage assessment develop simultaneously, concurrently, or in concert with one another. The discriminant analysis carried out using the readiness measure and stage assessment as information producing the discriminant function separating groups of readers and non-readers was highly successful at correctly classifying students. We learned from the discriminant analysis, however, that the stage assessment did not appear sufficient individually to provide information necessary to classify readers and non-readers. The data available from the more traditional academic readiness test was necessary to make adequate prediction and classification of students. Further work on developing the measurement of components of the stage assessment may provide additional data of a diagnostic nature

which can allow the instrument to be used individually, rather than in combination with other measures. On the other hand, we may learn that aspects of pre-literacy development in young children are distinct from the skills measured on academic readiness tests and that neither instrument individually serves the purpose of assessing various factors which predict a child's predilection for success in learning to read.

Further work to develop and standardize the Stage Assessment instrument will continue. Additional samples of work with student populations different from the "at-risk" population chosen for this study are currently being collected to provide information from a more generalized population.

Appendix A

1989 Iowa Tests of Basic Skills Performance by Individual School Site

	APP SITE #1 #/% STUDENTS	APP SITE #2 #/% STUDENTS
Quartile 4 (76 - 99 NPCT)	9 (10%)	5 (5%)
Quartile 3 (51 - 75 NPCT)	27 (30%)	13 (13%)
Quartile 2 (26 - 50 NPCT)	29 (31%)	40 (39%)
Quartile 1 (1 - 25 NPCT)	26 (29%)	44 (43%)
Total	91	102

NOTE: Figures report numbers and percents of students in each quartile based on achievement.

1990 Iowa Tests of Basic Skills Performance by Individual School Site

	APP SITE #1 #/% STUDENTS	APP SITE #2 #/% STUDENTS
Quartile 4 (76 - 99 NPCT)	15 (10%)	15 (9%)
Quartile 3 (51 - 75 NPCT)	33 (22%)	23 (13%)
Quartile 2 (26 - 50 NPCT)	49 (33%)	64 (37%)
Quartile 1 (1 - 25 NPCT)	51 (35%)	71 (41%)
Total	148	173

NOTE: Figures report numbers and percents of students in each quartile based on achievement.

1991 Iowa Tests of Basic Skills Performance by Individual School Site

	APP SITE #1 #/% STUDENTS	APP SITE #2 #/% STUDENTS
Quartile 4 (76 - 99 NPCT)	9 (8%)	15 (9%)
Quartile 3 (51 - 75 NPCT)	20 (18%)	29 (17%)
Quartile 2 (26 - 50 NPCT)	39 (36%)	67 (39%)
Quartile 1 (1 - 25 NPCT)	41 (38%)	60 (35%)
Total	109	171

NOTE: Figures report numbers and percents of students in each quartile based on achievement.

March 3, 1986

T-1 IDENTIFICATION AND PLACEMENT PROCEDURE

In an attempt to ensure that there is consistency among NNPS, that children are properly placed in T-1 classes, and that the same criteria is used in all schools, the Transitional First Grade Study Group and Elementary Curriculum Personnel have formulated the following T-1 identification and placement procedure.

The essential components and time lines are provided for K and T-1 teachers, parents and building administrators, to ensure successful identification and placement of T-1 candidates.

Vital components for this procedure include:

1. A clear understanding of characteristics of the transitional first child.
2. A clear understanding of developmental placement philosophy.
3. A clear understanding of identification and placement procedures.
4. A planned program for working with parents of T-1 candidates.
5. Appropriate curriculum program consistent in all NNPS based on the T-1 curriculum guide.
6. An on-going, working interface between K, T-1 teachers, reading resource teachers and building administrators.

The following time line offers specific activities and resources to carry out a successful T-1 identification and placement procedure.

Timeline:

October: Presentation of primary program progression to parents - possibility of using a PTA meeting, or separate session for K and new primary student parents.

T-1 class needs to be shown as natural step in development progression - and basic concepts of program given here.

Resources: Gesell film - "School Readiness"
K, T-1 teachers
Elementary curriculum office personnel

November: In-house review of T-1 characteristics and criteria for identification/placement process for K, T-1, 1 teachers, reading resource teachers and building administration.

Resources: Building personnel
Elementary curriculum office personnel
T-1 Curriculum Guide
T-1 Identification/Placement Procedures

March 3, 1986

January: List of possible T-1 candidates identified as part of retention policy date line notification; schedule parent conferences for those students. The majority of students not ready for regular first grade, would benefit more from being placed in a T-1 class, rather than be retained in kindergarten. We recognize there may be an exception where a student would benefit from a second kindergarten experience. However, students who have been in kindergarten for 2 years are NOT to be automatically placed in T-1 classes, but referred to child study for identification of specific problems. Correct placement for these students will be determined by the Child Study Committee. Flexibility for placement under these circumstances is desired.

February/March: Orientation meeting for parents of T-1 candidates to fully explain T-1 class program and outline remaining steps in identification process.

March/April: Parent visitation in T-1 classes.

End April, 1st May: T-1 candidates given the Gesell School Readiness Test.

May: Final decision made on T-1 placement. (Use retention letter forms for T-1 placement.)

June: Send idea packet home for summer with T-1 students - a system wide packet will be available.

June/August: Students entering NNPS without prior school experience must be screened on an individual basis. Building testers should begin with kindergarten level assessment tools, and then use T-1 criteria if appropriate.

All new incoming first grade students be given the Gesell test before placement is made. Reading resource teachers need information and training on placement of 6 year old students.

An additional source of T-1 information will be found in the kindergarten registration material. Spring K registration material brochures will contain information on primary program progression including T-1 class/program. If your school does a spring orientation for upcoming K parents, you will want to include discussion of K, T-1, 1 primary program progression.

T-1 CHARACTERISTIC CHECKLIST

Child's Name _____ School _____

Birth Date _____ Teacher _____

JANUARY - Mark scale from 1 to 5 on behaviors observed in classroom setting.

MAY - Mark scale from 1 to 5 to show any changes/growth or to show continued behaviors.

- 1 - does not apply to this child
- 2 - occasionally applies to this child
- 3 - generally applies to this child
- 4 - frequently applies to this child
- 5 - highly applies to this child

JAN.	MAY	
3	3	SOCIALLY 1. Self concept not well developed 2. Reluctant to participate at the beginning of the school year 3. Immature - often clings to mother 4. Relates best to younger children 5. Not apt to assume leadership role 6. Can be extremely outgoing 7. Can be extremely verbal or extremely quiet
4	2	
5	3	
2	2	
5	4	
1	3	
1	1	
3	3	EMOTIONALLY 1. Cries easily 2. Lacks self confidence to do many things 3. Sometimes fears physical contact with peers 4. May be over anxious about "being right" 5. Short attention span - may escape by daydreaming
4	4	
2	2	
1	2	
5	5	
1	1	PHYSICALLY 1. Tires easily, especially in the afternoon 2. Fine muscle coordination is generally poor (difficulty with scissors, crayons, pencils) 3. Gross muscle coordination is generally poor (difficulty with skipping, hopping, jumping) 4. Frequently absent 5. Visual perception inaccurate and inconsistent (skips or reverses lines or words) 6. Physical appearance resembles that of a 4½ to 5 year old
1	2	
3	3	
2	2	
2	2	
4	4	
2	2	INTELLECTUALLY 1. Has difficulty completing work 2. Takes longer to develop study habits 3. Needs rigid daily schedule 4. Lacks understanding of time-space concept 5. Lacks understanding of language experiences 6. Inconsistent in attending skills 7. High or average intelligence may be accompanied by low academic achievement
3	3	
3	3	
4	4	
4	4	
3	3	
5	5	

COMMENTS:

SAMPLE

CONFERENCE HELD: _____

GESELL SCHOOL READINESS SCREENING

Each child has a rate and pattern of growth which is individually right. Developmental age is the age at which the child is functioning as a total being -- the social, emotional, intellectual and physical areas are all related. A child's developmental age may or may not correspond with his/her chronological age.

The Gesell School Readiness Screening observes children's responses to given tasks. There are no right or wrong answers; each child is successful at a given developmental level. These behaviors (responses) are recorded as being typical of a given developmental stage such as 4, 4½, 5, 5½ years old. An overall developmental age range is determined from this screening.

The tasks assess all areas of development including:

Cubes - Fine motor skills, visual perception, ability to understand and follow directions, attention span, hand dominance, manual dexterity, and adaptive behavior.

Copy Form - Eye-hand coordination, maturity of visual perception, awareness of detail and ability to execute.

Name and Numbers - Developmental pace of attaining skills, acquisition of linguistic and mathematical symbols and fine motor skills.

Incomplete Man - Awareness of detail, social awareness, cognitive style (clues that offer an awareness to understanding) and fine motor skills

Interview - Speech, information organization, ability to stay on task, level of verbal language, emotional and social understandings.

Animal and Interests - Cognitive organization, ability to sustain, speech and language.

Knowing developmental age provides parents with information needed to make an informed decision about school entrance; and provides teachers with information necessary for providing an appropriate classroom environment to enable daily success at school.

GESELL KINDERGARTEN SCREENING RESULTS

Child's name _____ Date of birth _____

Chronological Age _____ C. A. in September of current year _____

Date Examined _____ Examiner _____

Developmental (Behavior) Ages

Developmental tasks	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7
Cubes	•	•	•	•	•	•	•	•	•	•	•
Copy Forms	•	•	•	•	•	•	•	•	•	•	•
Incomplete Man	•	•	•	•	•	•	•	•	•	•	•
Other tasks											
Name/Numbers	•	•	•	•	•	•	•	•	•	•	•
Interview	•	•	•	•	•	•	•	•	•	•	•
Animals	•	•	•	•	•	•	•	•	•	•	•
Interests	•	•	•	•	•	•	•	•	•	•	•
(Visual 1)	•	•	•	•	•	•	•	•	•	•	•

Developmental (Behavior) Age: _____

Recommended Placement: _____

Comments (Actual placement, Parent conference information): _____

Newport News Public Schools
PROMOTION/RETENTION ASSESSMENT SHEET

Student Name _____ School _____ Year _____
 Student Number _____ Teacher _____ Grade _____

(To be used as one component for those students for whom retention is being considered.)

Assess the child objectively, circling the most appropriate sub-statement to the major topic. Scores are assigned in relation to research indicators of the factor's potential assets to retention. The higher the score, the greater the likelihood of the child being helped; the lower the score, the less likely. Items scored 0 are poor indicators.

Academic Level		12. Student Attitude	
One year below grade level in all areas	(5)	Aware of low performance and positive about retention	(5)
More than one year below grade level in all areas	2	Disinterested in whether or not retention should occur	2
At grade level in one area and one year below in other areas	2	Agrees about retention only with parental persuasion	2
At or above grade level in reading and spelling	1	Objects to retention, but recognizes low performance	1
At or above grade level in all areas	0	After counseling by teacher, principal, or parent, is still upset about retention	0
Sex		13. Experience Level	
Male in grades K-3	5	Background has offered little or no opportunities for involvement in non-school activities/experiences	5
Female in grades K-3	(3)	Limited community experience and involvement in non-school activities/experiences	(3)
Male in grades 4-7	2	Many experiences in non-school activities (church, travel, scouting)	2
Female in grades 4-7	1	14. Ability to communicate in English	
Age		Good skills using the English language	5
Birthday July 1 - Dec. 1	(5)	Limited English language but acquires skills quickly	(3)
Birthday Dec 2 - June 30	3	Little or no English language and not acquiring skills	0
or		15. History of Learning Disabilities	
One year older than students in present grade	1	Has been through eligibility and there is no evidence of learning disability	5
More than one year older than students in present grade	0	Teacher does not suspect a learning disability	(3)
Size		Teacher does suspect the child has a learning disability	1
Much smaller than same age peers	5	Has been through eligibility and was diagnosed as having a learning disability	0
Slightly smaller than same age peers	3	16. Motivation	
Same size as most same age peers	(1)	Spends most of available time working on assignments, even if too difficult	5
Much larger than same age peers	0	Works on assignments interested in	(4)
Present Grade		Disinterested, but works when encouraged	2
Kindergarten	(5)	Disinterested and needs one-to-one encouragement to complete assignments	1
First Grade	4	Avoids assignments at appropriate level even when offered individual assistance	0
Second or Third Grade	3	17. Maturity	
Fourth thru Sixth Grade	2	Associates with children two or more years younger	5
Seventh or Eighth Grade	0	Associates with children one year younger or the same age	(2)
History of Retentions		Associates with children of same age	2
Never retained	(5)	Associates with children who are older	0
Started school late (parents held child out from regular kindergarten entrance)	2	18. Behavior	
One or more retentions	0	No history of antisocial behavior	(5)
Others/31stars (circle the highest applicable score)		Has occasional difficulty following school rules	4
One	5	Often has problems on playground or in classroom	2
Being more than 3 grades above or below this grade	(3)	History of problems at school and home, but no contact with law enforcement	1
Being two grades above or below	2	History of problems at school and home, and has had contact with law enforcement	0
Being one grade above or below	1	72-90 Excellent candidate for retention	
Being at the same grade or one grade below	0	48-71 Good candidate for retention	
Stability		41-47 Fair candidate for retention	
Attended only one school since beginning	(5)	32-40 Marginal candidate for retention	
Attended 2-3 schools over past 3 years	2	10-31 Poor candidate for retention	
Attended 4-6 schools over past 3 years	1	0-9 Student should not be retained	
Attended 7 or more schools in past 3 yrs.	0	Standards	
Attendance		Exceeds 25 days or more in a school year	(5)
Exceeds 25 days or more in a school year	5	Exceeds 11-24 days of a school year	3
Exceeds 11-24 days of a school year	3	Exceeds 3-10 days of a school year	2
Exceeds 3-10 days of a school year	2	Exceeds less than 3 days a school year	1
Exceeds less than 3 days a school year	1	Teacher Perception of Intellectual Ability	
Teacher Perception of Intellectual Ability		Average	5
Average	(1)	Below average	(1)
Below average	1	Significantly below average	0
Significantly below average	0	Significantly above average	0
Significantly above average	0	Parent Attitude and Involvement	
Parent Attitude and Involvement		Actively involved in school, attend or request conferences (in person or by phone), and are supportive of staff	5
Actively involved in school, attend or request conferences (in person or by phone), and are supportive of staff	5	Partially involved in school but attend or request conferences (in person or by phone)	(3)
Partially involved in school but attend or request conferences (in person or by phone)	(3)	Not involved in school and very few teacher conferences and rarely request conferences	2
Not involved in school and very few teacher conferences and rarely request conferences	2	Does not attend or request conferences	1
Does not attend or request conferences	1	Attends or request conferences and are non-supportive of staff	0
Attends or request conferences and are non-supportive of staff	0		

Total Score 66
 Comments:

SAMPLE

PRE-READING SKILLS

1. INTELLECTUAL DEVELOPMENT

- a. Appears interested in books and reading. (Looks at a book from front to back, left to right, top to bottom progression.)
- b. Can draw something to demonstrate an idea.
- c. Arranges in sequence a series of 3 to 4 pictures about a story, after hearing a short story.
- d. Tells a story in the correct order.
- e. Listens or works a reasonable length of time without restlessness.
- f. Creates original stories.
- g. Interprets pictures.
- h. Anticipates what may happen in a story, or provides a logical ending to an incomplete story.
- i. Recognizes the main point in a story, or selects a picture which illustrates the main idea.
- j. Classifies and associates colors, objects, pictures and gives names for groups of classifications.
- k. Knows the relationship of words such as up and down, big and little, top and bottom, full and empty, etc.
- l. Uses left to right, top to bottom progression.
- m. Gives verbally: name, age, address, telephone number, siblings.
- n. Identifies red, yellow, blue, orange, purple, brown, white, black, and green.
- o. Identifies cause and effect using appropriate pictures.
- p. Distinguishes between fact and fantasy.

2. LANGUAGE DEVELOPMENT

- a. Speaks clearly.
- b. Speaks in logical sentences when making statements or asking questions.
- c. Has a good vocabulary.
- d. Identifies antonyms when given pairs of familiar words, some of which are antonyms.
- e. Relates an event or personal experience to the teacher and then to the whole group.
- f. Discuss a story or poem.

3. VISUAL DISCRIMINATION

- a. Sees likenesses and differences in shapes.
- b. Sees likenesses and differences in letters.
- c. Sees likenesses and differences in words.

4. VISUAL MEMORY

- a. Reproduces shapes from simple to complex.
- b. Reproduces patterns of letters.
- c. Remember which section has been removed or changed from a total picture which has been viewed.
- d. Recall orally the individual objects in a set after they have been removed from the field of vision.
- e. Remember the correct sequence of a series of cards which have been shown in sequence.

5. AUDITORY DISCRIMINATION

- a. Identifies common sounds. (gross and fine sounds)
- b. Distinguishes differences in sounds, i.e. high and low, soft and loud, fast and slow.
- c. Identifies rhyming words.
- d. Hears likenesses and differences in letter sounds.
- e. Names a word to rhyme with a given word.

6. AUDITORY MEMORY

The student will:

- a. Imitate familiar sounds.
- b. Repeat one, two, and three syllable words.
- c. Repeat sentences of increasing length.
- d. Repeat a series of functional digits. (i.e. house number, bus number, and phone number)
- e. Follow simple one-step directions which gradually increase to two-step and three-step directions.
- f. Repeat familiar rhymes. (i.e. nursery rhymes, finger plays)

7. FINE MOTOR SKILLS

- a. Executes the following: buttons, zips, ties, cuts.
- b. Writes upper and lower case letters.
- c. Writes first and last name.
- d. The student will increase eye-hand coordination in tasks such as:
 - using crayons, paintbrush, scissors, spoon, and fork.
 - assembling puzzles, manipulating blocks, stringing beads, and playing simple musical instruments.
 - folding, pasting, painting, drawing, coloring, stitching, and weaving various materials.
 - clay modeling and constructing designs with two and three dimensional materials.

8. GROSS MOTOR SKILLS

- a. Executes the following: walk on a line, jump on both feet, hop on right foot, hop on left foot, skip.
- b. Throws and catches a ball with reasonable ease.
- c. Increases coordination in stopping, starting, clapping, and climbing.

9. IDENTIFICATION OF BODY PARTS

Identifies the following: head, eyes, nose, mouth, teeth, chin, shoulder, arm, hand, wrist, elbow, legs, knee, ankle, back, stomach, waist, hips.

10. DIRECTIONAL/POSITIONAL SKILLS

Uses the following terms correctly: up, over, above, in, out, top, behind, under, beside, front, back, next to, forward and backward, right and left.

11. ALPHABET RECOGNITION

- a. Identifies and names capital letters.
- b. Identifies and names lower case letters.
- c. Matches capital and lower case letters.

12. SOUND-SYMBOL RECOGNITION

- a. Knows that printed letters stand for sounds.
- b. Knows that groups of letters stand for words.
- c. Gives the correct sound for each consonant.
- d. Identifies the correct consonant when given the sound. (initial and final consonant)

NAME:

SCHOOL:

TEACHER:

YEAR:

GRADE:

STAGE I ASSESSMENT

Stage I students are characterized by not having a sense of word.

Spelling Awareness (Alphabetic Principle)

G							
F							
E							
D							
C							
B							
A							
Date							
Session	1	2	3	4	5	6	7

Key:

- A = Random marks *AB*
- B = Waves *~~~~*
- C = Letter like *h b*
- D = Random letters *hS9*
- E = Initial consonant *B*
- F = Initial and final consonant *BP*
- G = Vowel by letter name *BOP*

Voice to Print Match (Sense of Word)

G							
F							
E							
D							
C							
B							
A							
Date							
Session	1	2	3	4	5	6	7

Key:

- A = No discernible unit or direction
- B = Moves left to right; no discernible unit
- C = Points to letters for each stress unit
- D = Points to a word for each stress unit in speech
- E = Points to a word for each syllable in speech
- F = Self corrects
- G = Tracks accurately

Sense of Story

100%							
88%							
75%							
63%							
50%							
38%							
25%							
13%							
Date							
Session	1	2	3	4	5	6	7

Key:

- Story Elements
1. Beginning (once upon a time, one day the three bears...)
 2. Setting (in a house, in the woods...)
 3. Characters (names significant characters, for example, Goldilocks, the bears, rather than they it...)
 4. Sequences (includes at least three events in logical sequence)
 5. Feelings (at least one feeling of a character is described)
 6. Description (uses descriptive words at least twice)
 7. Conversation (gives at least one example of the characters speaking)
 8. Ending (jumped out the window, ran away, never came back...)
- Total: % /8

Language Development

E							
D							
C							
B							
A							
Date							
Session	1	2	3	4	5	6	7

Key:

- A = 1 or 2 word statements
- B = Phrases
- C = Complete sentences
- D = Complete sentences with subordinate clauses
- E = Written language grammar and usage honored

Notes:

Alphabet Tracking

E							
D							
C							
B							
A							
Date							
Session	1	2	3	4	5	6	7

- A = Cannot recite alphabet accurately
- B = Can recite alphabet accurately
- C = Cannot track through the alphabet accurately in serial order
- D = Can track through most of the alphabet in serial order
- E = Can track through the alphabet in serial order

Letter Recognition

E							
D							
C							
B							
A							
Date							
Session	1	2	3	4	5	6	7

- A = Can recognize less than 1/2 of letters presented randomly
- B = Can recognize 1/2 of letters presented randomly
- C = Can recognize more than 1/2 of letters presented randomly
- D = Can recognize all of letters presented randomly
- E = Can recognize with automaticity letters presented randomly

Identifies:

A B C D E F G
H I J K L M N
O P Q R S T U
V W X Y Z

.....
a b c d e f g
h i j k l m n
o p q r s t u
v w x y z

STAGE II ASSESSMENT

Stage II students are characterized primarily by having a sense of word. Although they represent vowels rationally and systematically, they lack a correct understanding of how vowels are represented in English spelling. They have very limited sight vocabularies and can read only with support.

Sight Words (Word Banks)

150											
120											
90											
60											
30											
Date											
Session	1	2	3	4	5	6	7				

Spelling Awareness

E											
D											
C											
B											
A											
Date											
Session	1	2	3	4	5	6	7				

Key:

A = Letter name spelling, using vowel substitutions

BAKE spelled BAK, SHIP spelled SEP

B = Beginning blend and digraphs in place

SHIP spelled SHEP

C = Correct short vowel in place

BACK spelled BAK

D = Ending blends, digraphs, and nasals represented

STAGE III ASSESSMENT

Stage III students are characterized by having an instructional level in reading.

Word Knowledge (Spelling)

	%	%	%	%	%	%	%
VI							
V							
IV							
III							
II							
I							
Date							
Session	1	2	3	4	5	6	7

Word Recognition in Isolation (optional)

Level							
Flashed							
Date							
Session	1	2	3	4	5	6	7

Word Recognition in Context

Level							
%							
Fluency							
Date							
Session	1	2	3	4	5	6	7

Fluency key: ✓ + very fluent

✓ appropriately fluent

Word Recognition in Isolation (optional)

Level							
Flashed							
Date							
Session	1	2	3	4	5	6	7

Word Recognition in Context

Level							
%							
Fluency							
Date							
Session	1	2	3	4	5	6	7

Fluency key: ✓ + very fluent

✓ appropriately fluent

✓ - word by word reading

NOTES:

Pre-reading Stages
Characteristics and Instructional Strategies

Phase I: (Prephonetic Stage).

Characteristics (shown through diagnostic assessment)

- Lacks sense of word
- Shows no use of phonetics in writings

Desired Indicators/Outcomes

This beginning reader knows that books are a source of information and enjoyment and expects to be successful in learning to read. He/she is able to use oral language to do what an author does with print - describe, explain, report, or justify. Readers at this stage understand that the function of print is to preserve and transmit meaning.

- Shows an interest in handling books
- Enjoys listening to literature
- Notices environmental print
- Uses literature as a basis for dramatic play or painting
- Has favorite stories and wants to hear them repeatedly
- Reconstructs own version of stories in familiar books
- Can retell past experiences
- Volunteers comments or speaks readily when spoken to
- Can relate a sequence of events
- Shows a desire to see his/her words written down
- Role plays reading by attempting to match his/her memory of the selection with the actual words on the page
- Reads back short-experience stories written by the teacher
- Can follow a line of print in an enlarged text
- Realizes that print has constant or fixed meaning
- Understands directionality of print (left-to-right, top-to-bottom)
- Enjoys repeating chants and rhymes
- Can identify certain words, letters
- Picks out own name

Teaching Strategies for Phase I Readers

Help children discover that print can be a source of enjoyment, information, and personal enrichment.

Help children increase the reservoir of meanings that they will need in order to understand print. Provide related experiences before reading to build up the children's semantic background.

Create situations where the children need to use language for different purposes.

Read to the children. Involve them through discussion, drama, and choral speaking.

Demonstrate the link between written and spoken language. Write down the children's words, use environmental print in the classroom, involve the children in shared reading.

Publish the children's writing. Make books for the other children to read. Help the children read selections by themselves. First, read the selections aloud; second, have the children listen to it and read along with a tape; third, have them reread the selections with a partner.

Provide materials with repeated syntactic patterns and strong context clues. Teach the children to look for meaning in the pictures.

Phase II (Early Phonetic)

Characteristics (shown through diagnostic assessment)

- Lacks sense of word (accurate tracking)
- Beginning to use initial (and ending) consonants in writing

Indicators/Outcomes

Readers at this stage are beginning to understand sound-symbol relationships, and are paying close attention to the print in order to decode words. Oral reading is often slow and meticulous. This reader is looking for meaning and self-corrects when the text does not make sense.

- Understands print is the base for deriving meaning
- Relies heavily on author's print when reconstructing story
- Wants to read to people
- Can identify familiar words in a variety of contexts
- Recognizes some phonic generalizations (rhyming words, words that start or end the same, blends)
- Uses some conventions of print in writing
- Reads some things independently
- Is building a store of sight words in reading and writing
- Makes meaningful substitutions when reading
- Makes meaningful predictions using context and syntax clues
- Comprehends what has been read and can retell a story
- Has command of key elements of story structure

Teaching Strategies for Developing Readers

- Have the children participate in a shared reading of big books, overheads, or chart stories.
- Help the children read independently by reading the selection aloud, by having them listen to it and read along with a tape, and by having them reread it with a partner or group.
- Engage the children in group writing activities, with the teacher as scribe.
- Draw the children's attention to various features of words and sentence patterns.
- Encourage the children to use context clues to predict words.
- Encourage silent independent reading.
- Involve the children with literature through drama, choral reading, discussion, painting, and writing.

Phase III (Phonetic)

Characteristics

- Has sense of word (tracks accurately)
- Has an instructional level in reading

Indicators/Outcomes

This reader is able to read material at the appropriate level without assistance.

- Reads silently but sometimes sub-vocalizes when the text is difficult
- Reads past and current dictated stories independently with a high degree of accuracy

- Makes predictions about a word and is likely to be using all three cueing systems
- Identifies some unfamiliar words with the aid of word attack skills
- Has approximately 150 different word bank words
- Self corrects when reading does not make sense
- Comprehends at different levels (literal, interpretive, and critical)
- Encodes ideas in creative writing attempts with a good degree of phonological accuracy
- Uses invented spelling that approximates standard spelling
- Can process print details automatically
- Can read at a rate appropriate to the print form

Teaching Strategies for Independent Readers

- Involve the children in shared reading.
- Encourage silent independent reading.
- Provide a variety of reading materials, so that the children may extend their reader stories and poems with further reading.
- Engage the children in rehearsed oral reading.
- Continue to publish the children's writing.
- Provide activities that foster a deeper understanding of literature.
- Begin transition into basal approach.

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CERTIFICATION: Virginia Postgraduate Professional

PROFESSIONAL MEMBERSHIPS AND HONORS:

Member, American Educational Research Association
Member, National Council on Measurement in Education
Member, Virginia Educational Research Association
Outstanding Graduate Student in Psychology (ENMU, 1984)
Psi Chi Graduate Award (ENMU, 1984)

WORK EXPERIENCE:

1984 - PRESENT

Supervisor of Research and Program Evaluation, Newport News Public Schools, Newport News, Virginia. Responsibilities for administering standardized testing programs in grades K-12, including nationally published norm-referenced tests and supervising the development and administration of locally developed criterion-referenced tests and performance assessments. The analysis of performance data by system and schools is required with annual reports of results made to school board, school officials, and media. The design and implementation of appropriate evaluations for innovative programs is required. Training of various teacher groups and administrators in the interpretation of individual and group standardized tests is also required. Other activities related to research, program evaluation and student assessment are carried out in collaboration with instructional departments.

1982-Jan. 1984

Graduate Assistant. Eastern New Mexico University College of Education and Technology. Primary responsibilities include teaching undergraduate psychology and measurement courses and serving as research assistant for students and faculty. Research duties involve collating data, analyzing results, and interpreting statistics for students and faculty members. Programming with statistical packages SAS and SPSS was also required.

1980-1981

Title I Program Specialist. Clay County School System (Green Cove Springs, Florida). Responsibilities included supervision of Title I Reading and Math Programs; evaluating teachers in ten Title I Schools; carrying out needs assessment and program planning; ordering and inventory materials and equipment; completing evaluation procedures and compiling results.

1970-1978

Teacher. (Grades 4-9) Teaching assignments included elementary self-contained classrooms, team-teaching and individualized structures, departmentalized intermediate math, and remedial math and reading instruction. Also served three years as grade level chairman and member of Budget and Screening Committee for Exceptional Children.

PRESENTATIONS AND PUBLICATIONS:

Journal Article - Impara, J.C., Divine, K.P., Bruce, F.B., Liverman, M.R. & Gay, A. (1991). Does interpretive test score information help teachers? Educational Measurement: Issues and Practices, 10 (4), 16-18.

Journal Article - Divine, K.P. & Whanger, R. (1990). Use of a Computer Learning Laboratory with At Risk High School Students. Educational Technology, 30, 46-48.

Journal Article - Shaughnessy, M.F., Divine, K.P., Roche, K. (1987). Levels of Processing: Effects of Interference in Word Learning Over Time. Psychological Reports, 60 (2), 551-554.

Paper presented at the annual conference of the National Council on Measurement in Education Meeting April, 1990: Impara, J.C., Divine, K.P., Bruce, F.A., Liverman, M.R., & Gay, A. "Utility of Interpretive Information in Helping Teachers Interpret Standardized Test Score Reports: The Virginia State Assessment Program".

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