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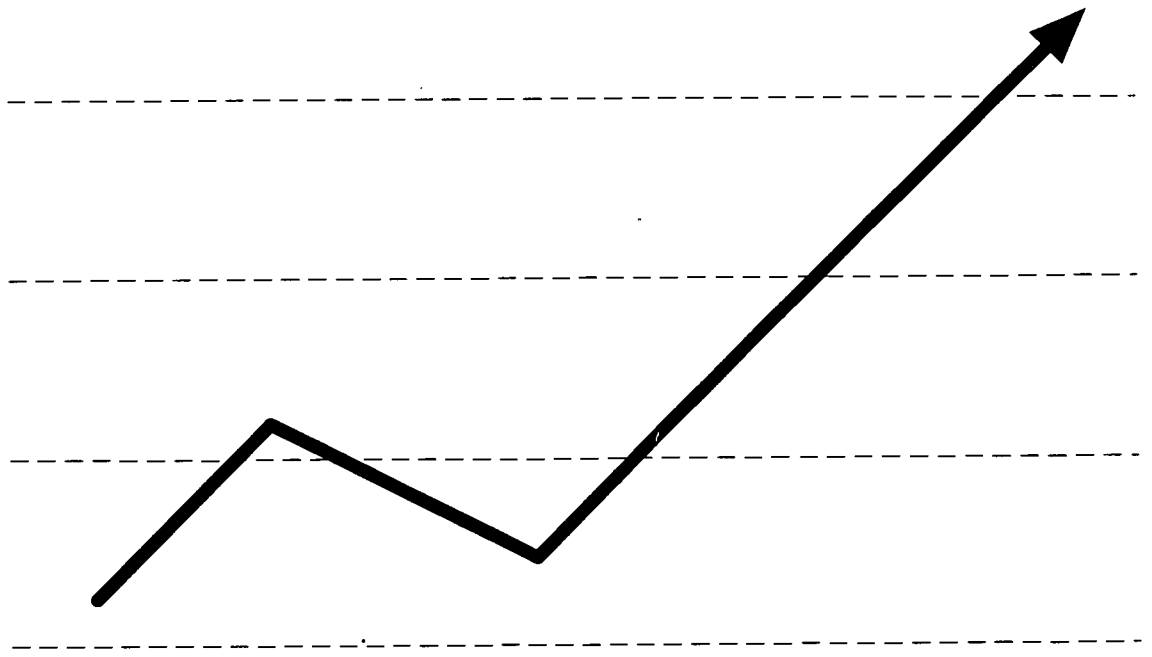
ABSTRACT

This study examined five broad research areas related to first grade in Texas public schools: (1) characteristics of first graders; (2) teachers' views of children's readiness, behavior, and academic growth; (3) programs and practices used in schools and classrooms; (4) the relation of student progress in Grade 1 to student characteristics, teacher perceptions, and reported programs and practices; and (5) long term indicators of performance related to Grade 1 students' characteristics, teacher perceptions, and reported programs and practices. Surveys were completed by 466 teachers in 99 elementary schools about their instructional practices and about each of the students (about 9,500 students across all teachers). Findings indicated that over one-half of students were ethnic minorities and almost one-half were economically disadvantaged. Teachers reported that about two-thirds of students began school ready to learn, that most showed desired learning-related behaviors in class most of the time, and that most were making average or better progress in learning. Eighty percent of teachers considered their pupil-teacher ratios to be adequate. Better student learning was associated with moderate teacher influence in site-based decision-making, at least moderate administrative support, adequate counseling and guidance programs, parent contact and parent-teacher conferences, daily enrichment activities, learning centers, and matching teaching to student learning styles. Five appendices include demographic information, learning principles for young children, the data collection instruments, and teacher survey items and data. (Contains approximately 150 references.) (KB)

First Steps in School: An Examination of Grade 1 in Texas Public Schools *Technical Report*



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FIRST STEPS IN SCHOOL: AN EXAMINATION OF GRADE 1 IN TEXAS PUBLIC SCHOOLS

TECHNICAL REPORT

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Report Highlights

First Grade in Texas in 1995-96

- 303,928 students and 17,787 teachers
- Students were:
  — over one-third Hispanic and over one-half ethnic minorities
  — almost one-half economically disadvantaged
  — almost one-third at risk
  — about one-fifth limited English proficient
  — about 8% identified for special education

Teachers' Views of Readiness, Behavior, and Growth

- Two out of three first graders began the year ready to learn
- 73% were on/above grade level in oral reading and reading comprehension
- 82% were on/above grade level in mathematics
- Most exhibited desired learning-related behaviors in class, most of the time
- 3% were sent to alternative learning settings, generally for short periods
- Most were making average or better progress in learning
- A majority had mastered most or all of the grade-level curriculum
- Teachers thought 77% should be promoted

Teachers' Descriptions of School and Classroom Features, Programs, and Practices

- 80% considered their pupil:teacher ratios to be adequate
- Moderate influence in site-based decision making was associated with better student learning
- Moderate or better administrative support was associated with better student learning
- Adequate counseling and guidance programs were associated with better student learning
- Parent contact and parent:teacher conferences were associated with better student learning

- Daily incorporation of enrichment activities into instruction was associated with better student learning
- Using learning centers and matching teaching to student learning styles were associated with better student-level results
- Grouping students for instruction needs to be considered carefully in future research

Complex Relationships between Contexts, Inputs, Processes, and Student Academic Results

- Two contextual factors — *district type* and *classroom pupil:teacher ratio* — and three process factors — student classroom *behavior ratings*, reported frequency of student *referrals for discipline*, and *student attendance* rates — helped to statistically predict teacher ratings of student learning by subject area
- Other combinations of features still need to be explored for relationships to student learning

FIRST STEPS IN SCHOOL:
AN EXAMINATION OF GRADE 1 IN TEXAS PUBLIC SCHOOLS
TECHNICAL REPORT

EXECUTIVE SUMMARY

This report summarizes work done to supplement the on-going Statewide Texas Educational Progress Study (STEPS), with the support of Title VI federal funds. The focus is on first grade, which traditionally has been viewed as the beginning of formal schooling. Until this work was done, little information specific to Texas public school first graders was available, such as summary descriptions of their characteristics, of the kinds of schools they attend, or how they are taught. These information needs are at the heart of this research effort, which included accessing the existing knowledge base pertaining to Grade 1 (both published literature and the agency's Public Education Information Management System, or PEIMS) and collecting original survey data from a representative sample of Texas public schools serving Grade 1.

Texas in the 1995-96 school year had 303,928 first-grade students attending 3,521 campuses in 1,044 districts. In the spring of 1996, agency research staff compiled PEIMS and survey data on approximately 9,000 first-grade students on 100 elementary campuses in 85 schools districts across the state, to explore the following broad research questions.

(a) What does first grade look like in Texas?

(b) How do the teachers view the children's readiness, behavior, and academic growth?

(c) What programs, practices, and other features do first-grade teachers report using in their schools and in their classrooms?

(d) How is student progress in Grade 1 related to each of the previous three areas (student characteristics; teacher perceptions of readiness, behavior, and academic growth; and reported programs and practices)?

(e) What long-term indicators of performance are related to Grade 1 students' characteristics; teacher perceptions of readiness, behavior, and academic growth; and reported programs and practices?

The last question cannot be addressed until longer-term performance data are available, within the next two years. To address the remainder, two survey forms were administered to all Grade 1 teachers on the participating campuses, one about their classrooms and instructional practices, the other about each child in their rooms (given parental consent when local policies required this). These data then were combined with PEIMS data, and the findings from the combined data sets are summarized below, in relation to each of the research questions.

What does first grade look like in Texas?

The following descriptive profile applies to first grade in the state of Texas during the 1995-96 school year.

Students

- There were 303,928 first-grade students.
- Over one-third of the children were Hispanic, and over one-half were members of an ethnic minority group. The proportion of minority children entering first grade has risen steadily over the last 5 years.
- A little less than half of all first graders were economically disadvantaged. This, too, has increased over the last 5 years.

- Nearly one-third of all first graders were identified by districts in PEIMS submissions as being at risk of school failure or of dropping out.
- About 40 percent of first graders were served in Title I programs (federally sponsored programs serving economically and educationally disadvantaged students).
- About one-fifth of first graders were identified as having limited English proficiency (LEP).
- Eight percent of first-grade students participated in special education programs.
- The sample drawn from PEIMS for additional data collection was comprised of students who, by and large, were very typical of first-grade students statewide.

Teachers

- There were 17,787 first-grade teachers.
- Ninety seven percent were female; 75 percent were White.
- Seventy two percent had five or more years teaching experience; 5 percent were first-year teachers.

Districts and Campuses

- There were 3,521 campuses serving Grade 1.
- Students at schools rated as *Exemplary* were judged by teachers as having learned the most Grade 1 content; students at *Low Performing* campuses were judged as making the most overall progress in school.
- Students in non-metropolitan, fast growing districts consistently were reported by teachers as having best learned all subjects, and as showing the greatest overall progress in school.

How do the teachers view the children's readiness, behavior, and academic growth?

These are some of the main findings regarding teachers' perceptions of the first graders in their classrooms.

- About 2/3 of the children were thought to have arrived ready to learn the first-grade curriculum.
- Nearly 3/4 of the children were reported as functioning on or above current grade level in both oral reading proficiency and reading comprehension; even more (82%) were said to be working on or above grade level in mathematics.
- Nearly all first graders (96%) were viewed as often or always behaving desirably in class, by participating in class activities, conversing freely at school, demonstrating self-help skills in learning, and so on.
- Only 75 out of about 9,000 first-grade students represented in the study were reported to have been suspended one or more times over the course of the school year.
- Almost 2/3 of the children were described as having made average or better academic progress over the course of the school year.
- Teachers thought that over 3/4 of the first graders in the sample should be promoted into second grade.
- Although first graders in the sample who had attended Texas public school Prekindergarten (PreK) programs were more likely to be limited English proficient (LEP) and economically disadvantaged than their peers who had not been in PreK, teachers thought that similar percentages of children in the PreK and non-PreK groups should be retained in first grade.

What programs, practices, and other features do first-grade teachers report in their schools and in their classrooms?

Teachers provided the following information about their schools, classrooms, and work lives.

- The vast majority of teachers indicated that they, as well as first-grade children and their families, had the support of local administration.
- Roughly 3/4 of the teachers believed they had moderate or extensive influence in site-based decision making.
- About half the teachers (51%) viewed their school's counseling and guidance programs as adequate for their students.
- Over 3/4 of the teachers said the actual working pupil:teacher ratio in their classrooms was adequate; and about 1/5 of the teachers reported having instructional aides in their classrooms, most of whom were bilingual in English/Spanish.
- About 1/4 of the teachers were "home room" teachers, in that their students were taught core subjects by teachers other than themselves.
- While over half the teachers said their schools did not provide them with personal computers (PCs), nearly all (96%) indicated that their *students* had access to PCs.
- Most teachers (a minimum of 61% across categories) judged the staff development they had received over the course of the school year to be timely, relevant, adequate in amount, supported upon returning to their classrooms, and inclusive of all who needed the training. Teachers consistently gave more favorable responses about staff development that was *not* related to technology. However, teachers gave favorable responses for all staff development (69%-81% for non-technology and 61%-69% for technology-related staff development).
- The great majority (71%) of the teachers reported having contact with their students' parents two or more times each week.
- Among the common instructional techniques teachers reported using were the following: matching student learning styles, grouping children for special programs instruction, grouping children relative to their skills/abilities (both ways — to increase similarity *and* to increase diversity), using enrichment activities, using manipulatives to support instruction, and using multiple strategies to teach reading, including whole-class instruction, reading aloud to students, phonemic awareness instruction, having a wide assortment of children's books, and providing uninterrupted reading time for children.

How is student progress in Grade 1 related to each of the previous three areas (student characteristics; teacher perceptions of readiness, behavior, and academic growth; and reported programs and practices)?

School context. Several site-specific or contextual features of schools bore strong relationships with teacher perceptions of Grade 1 students' performance. Each of the following contextual features, as described by teachers, was associated with relatively higher percentages of first graders reported to have mastered all or most Grade 1 essential elements, and higher percentages of students expected to be promoted.

- an adequate working pupil:teacher ratio
- moderate teacher influence in site-based decision making
- moderate administrative support for Grade 1 teachers, and students and their families
- having a 46- to 50-minute planning period (not less, and not more time)
- having shared planning periods with other Grade 1 teachers

Finally, based on the limited sample of five schools, the year-round campuses in this study showed some trends suggesting slightly higher student performance and slightly fewer disciplinary incidents.

Resources and constraints bearing on the educational environment (system "inputs"). The circumstances that affect the school environment can be thought of as "inputs," and these can be gauged in at least two ways. First, inputs can be what professional educators bring to their districts, schools, and classrooms (resources, organizational structures, teaching methods, and so on). Second, they can be what students bring with them to their classrooms (characteristics, learning needs, and so on). The qualities described by teachers that were *most associated* with higher reported percentages of students mastering most or all of the first-grade curriculum, and/or with higher percentages of students expected to be promoted to second grade, are listed below.

- an adequate counseling and guidance program at school
- fewer instances of "pull outs" for special programs instruction
- having students who had participated in Texas public school Prekindergarten programs
- having sufficient quantities of instructional materials
- having culturally and developmentally appropriate materials
- having materials that were rated as providing excellent to very good coverage of the Grade 1 essential elements
- having timely staff development
- not having an instructional aide (which may simply reflect learning needs of the classes that *do* have instructional aides)
- having and using, on a daily basis by students and teachers, personal computers (PCs; for promotion rates only)
- classrooms in which the teachers taught the core subjects themselves (for mastery of essential elements only)

Classroom practices (or "processes"). Classroom practices represent a tremendous array of techniques, tools, strategies, and methods of engagement by teachers and students through which learning is accomplished — all are *processes* directed towards learning. These teacher-reported practices were *most strongly associated* with relatively better student outcomes, as gauged by teacher views of student mastery of the essential elements and likely promotion to Grade 2.

- including enrichment activities in instruction on a daily basis
- frequent use — 2 to 4 times per week or more — of different learning modalities such as sight, sound, and touch in instruction (related to mastery of the essential elements but not to promotion)
- use of learning centers within the classroom
- relatively less frequent use of grouping strategies reflective of abilities/skills (either to increase diversity or to increase similarity)
- having students read orally up to 10 minutes each, per day
- completing parent:teacher conferences
- *not* making home visits (note that such relationships do <u>*not*</u> imply causality, but likely reflect responses to children's learning needs)
- *not* using manipulatives for instruction in science and social studies

Features associated with student outcomes as judged by first grade teachers. Both teachers and researchers are aware that typical classrooms differ dramatically from carefully controlled laboratory studies. In classroom learning, a multiplicity of features and events influence results, often, one suspects, more powerfully in combination than when examined separately. These relationships also probably are dynamic over time — an example for teachers might be access to a sufficient amount of professional development in a given teaching technique at a point in time that permits the teachers, in turn, to effectively apply the technique for a sufficient length of time to have a meaningful and measurable impact with children. When considered simultaneously, these combinations of contexts, inputs and processes were predictive of teacher ratings of overall student progress in Grade 1: district urbanicity, student social behavior, student discipline, and **student attendance** (not in order of strength of relationships). Also considered simultaneously, the following combinations of contexts, inputs and processes were predictive of teacher ratings of student mastery of Grade 1 essential elements (again, not in order of strength of relationships): district urbanicity, classroom pupil:teacher ratios, student social behavior, student discipline, and **student attendance**.

Recommendations

Direct measures of student progress, such as the TAAS test or experimental controls, do not exist at the first-grade level. Multiple indirect indicators must then be collected to compensate for the lack of direct measures, and to increase the credibility of results. Patterns found in multiple indicators, then, can lead to informed judgments regarding educational practices, methodologies, and policies. The following recommendations stem from a combination of prior research findings, and the relationships that were observed in this study between student performance in Grade 1 and school contexts, resources and constraints, and practices as reported by first-grade teachers.

Grade 1 teachers and students should be supported in learning in each of the following ways.

- promoting access to high quality Prekindergarten programs
- maintaining small class sizes whenever possible, and supporting teachers' acquisition of effective classroom management techniques to positively direct children's behavior
- providing optimal amounts of time for planning periods that are shared with grade level team members
- maintaining or enhancing school counseling and guidance programs
- integrating instruction to minimize "pull outs" from class
- making technology accessible and supporting its use on a high-frequency basis
- encouraging daily use of enrichment activities in classroom instruction
- continuing to provide teachers with materials that are both culturally and developmentally appropriate, and ensuring that sufficient quantities of materials are available for instruction
- supporting teachers and parents in ways that increase the likelihood of completing parent:teacher conferences

Further research in several areas is justified by virtue of some unanticipated, unverifiable, or equivocal findings in the SER project. These include the following possibilities:

- Examine these students' Grade 3 instructional and TAAS performance, in relation to the programs and practices experienced while in first grade, to detect possible aggregate differences.
- Conduct more focused research on instructional grouping practices in Texas public school classrooms, to better gauge their effectiveness.
- Conduct a follow-up study to determine how many of the sample students actually were promoted or retained.

- Continue exploring the existing data for relationships between combinations of variables that help explain student learning.
- Investigate year-round (YRE) school calendar effects on student performance and discipline beyond the five YRE schools selected for this current study.

It is further recommended that, because of (a) its *significant* predictive value in understanding student achievement at Grade 1 and (b) the absence of other indicators that capture performance in primary grade levels, attendance should continue to be included as a base indicator in the accountability system used to determine district accreditation status and campus accountability ratings. Last but not least, agency research staff strongly endorse the cost efficiency made possible through primary reliance upon PEIMS when designing studies so that "custom" data collection is kept to a minimum, even as information yields and representativeness of the data are maximized.

INTRODUCTION

First grade traditionally has been viewed as the beginning of formal schooling, and at the heart of this report are Texas' first grade students and teachers. The Systemwide Elementary Reform (SER) project explores their characteristics by accessing the existing knowledge base pertinent to Grade 1 (both published literature and the Texas Education Agency's (TEA) Public Education Information Management System, or PEIMS) and collecting original survey data from a representative sample of Texas public schools housing Grade 1. SER, with the support of Title VI funds, is intended to respond to a number of information needs that have been identified in research-based literature and in TEA policy regarding accountability for performance, decentralization of authority, and improvement systemwide. Specifically, this project is part of the on-going Statewide Texas Educational Progress Study (STEPS). STEPS is concerned with aggregate student performance over time in Texas; SER focuses on the primary grade levels (Grade 1-3) targeted for reform under Academics 2000 (TEA, *Academics 2000: Education improvement plan*, 1995a), with particular emphasis on Grade 1. The primary grade levels have the fewest pertinent performance indicators included in the TEA's Academic Excellence Indicator System (AEIS).

This technical report supplements a summary report (TEA, 1997a). It is in two parts: (a) a literature review and (b) the research study of PEIMS data and survey data about Texas Grade 1 teachers and students. The literature review focuses specifically on the following four questions.

- **Who are today's first graders?** This is a general look at first graders from both a national and Texas perspective.

- **How do first-grade students learn and grow?** Information is presented concerning the complex ways in which young children typically develop and learn, the issues surrounding their readiness for school, how their development can be nurtured, and other issues relevant to the corresponding readiness of schools to meet the needs of young children. Attention is devoted to the importance of effective reading instruction and the importance of developmentally appropriate practice throughout the primary grades.

- **How can the success of first-grade students be promoted?** Strategies for promoting success of first-grade students are highlighted, including professional development for teachers, parental involvement, and the use of early, effective intervention methods.

- **How can the success of first-grade students be assessed?** Developmentally appropriate assessment is discussed.

The results of the 1995-96 teacher surveys are then presented. In the 1995-96 school year, 466 teachers in 99 elementary schools answered two surveys about their instructional practices and about each of their students (about 9,500 students across all teachers) pertaining to the students' academic progress, discipline, and other areas. No data were collected for students whose parents/guardians declined consent for participation in the study. This section presents survey results to answer the following research questions.

- **What characteristics do today's first graders in Texas bring into the classroom?**

- **How do the teachers view the children's readiness, academic growth, and behavior, and how do these relate to overall student progress during the first grade?**

- **What programs and practices do first grade teachers report being used in their schools and in their classrooms, and how do these relate to student progress in Grade 1?**

- **What combinations of student characteristics, school/classroom practices, and system resources are most associated with satisfactory overall student progress in Grade 1?**

REVIEW OF RELEVANT LITERATURE

The first grade as a distinct entity has received relatively little attention in research-based literature. Most work tends to focus on either elementary grades taken collectively, or on early childhood education, generally thought to span from Prekindergarten through Grade 3. The latter body of literature frequently seems to emphasize Prekindergarten or Kindergarten to the relative exclusion of the primary grades. Therefore, this review serves two purposes. First, it organizes and summarizes available literature concerning Grade 1 and early childhood education in an easy-to-use format. Topics addressed include the state and national sociodemographic trends among first graders, the ways in which young children typically develop and grow, the many concepts of readiness, the assessment of first graders' learning, and some strategies for promoting the success of first-grade students. Second, the review constructs an interpretive framework for the survey findings that follow it.

Who Are Today's First Graders?

National Trends

National Center for Educational Statistics data (NCES, 1995) show that while school enrollment *rates* for children ages six to 14 are essentially 100 percent, total school enrollment for children ages three to five has increased substantially since 1970. In 1993, the percentage of three- and four-year old children enrolled in school was 27 percent and 54 percent, respectively, up from 13 percent and 29 percent in 1970. The percentage of five-year old children enrolled in 1993 was 92 percent, up from 81 percent in 1970. It is now the norm for children to attend Kindergarten before starting first grade.

Seventy-two percent of children in first grade in 1993 had attended some form of child-care or preschool program before Kindergarten. While African American and White first graders in 1993 had similar participation rates (73% and 76% respectively), Hispanics had much lower rates of participation (57%). Enrollment increases since 1971 also varied across ethnic groups. Specifically, the increase was larger for Whites than for African Americans and Hispanics. Of those attending child-care or preschool programs, children from families with incomes over $50,000 were more likely than children whose family incomes were at or below $50,000 to have attended these programs for two years or more.

Access to preschool may be affected by family income because nursery schools are primarily private — accounting for 62 percent of preschool enrollment in 1992 — and they charge tuition. In 1993, 52 percent of three- and four-year old children from high income families were enrolled in preschool compared to 24 percent of those from low income families. This difference was larger than it was in the early 1970s. However, in 1993, more than 60 percent of first graders whose family income was under $20,000 had attended some form of child-care or preschool program before Kindergarten.

Texas Trends

A look at five years of Public Education Information Management System (PEIMS) statewide data, from 1991 through 1995 inclusive, shows a rapidly growing student population in Texas. During that period, the total number of first-grade students increased by almost 20,000 children. Of the five major ethnic groups represented in Texas — White, Hispanic, African American, Asian American, and Native American — the one group that increased significantly was Hispanics. The percentage of Hispanic first graders grew from 35 percent in 1991 to 38 percent in 1995, representing an increase of more than 15,000 Hispanic children at that grade level. First graders identified as limited English proficient (LEP) increased by four percent over the period, accounting for slightly over 19 percent of all first graders by 1995. The federally funded Title VII bilingual program correspondingly served 11 percent of all first-graders in 1991 and 14 percent in 1995.

Statewide in 1995, about 27 percent of all public school first graders in the state had attended Texas public Prekindergarten programs in 1993, but as was the case in the national data, the representation varied with ethnicity. For example, in 1995, 42 percent of all Hispanic first graders had attended Texas Prekindergarten programs in 1993, but only 11 percent of all White first graders had done so. It should be noted that in Prekindergarten programs in Texas, priority is given to children who have limited English proficiency (LEP), and/or who are economically disadvantaged. These variations reflect a targeting of services to intended participants under the law, by the districts that are required to offer the programs.

The number of Grade 1 students considered to be economically disadvantaged has increased dramatically over the five-year period. ***In fact, the percentage of economically disadvantaged first graders in Texas constituted the majority in 1992, and it continued to increase to slightly over 55 percent in 1995.*** An even greater increase can be found in the percentage of first graders considered to be at risk of school failure. These numbers have grown sharply from 20 percent in 1991 to 33 percent in 1995, at the same time that the numbers of children who are ***not*** eligible for Chapter 1/Title I services has declined (represented by a percentage reduction of nearly 17 points). Another dramatic change over the five-year period was that the number of first-graders considered to be at risk of school failure increased by almost 44,000 students. Appendix A contains the demographics of Texas first-graders from 1991 to 1995.

In sum, Texas now has more first graders than it did five years ago, and they are presenting more educational challenges to the system than before, in terms of (a) coming from disadvantaged backgrounds, and (b) their increased eligibility for supplemental programs and services at a time when such resources may be level or reduced.

How Do First-Grade Students Learn and Grow?

Child Development

Before beginning a discussion of the many issues involved in the first-grade school experience, it is helpful to briefly review the stages of physical, mental and psychosocial development at which the typical first-grade child begins the school year. Appendix B contains a brief summary of the six steps of how children learn as delineated by the Southern Early Childhood Association (1990). The following information, which profiles a typical first-grade student, is drawn from a 1993 issue of the *Child Study Journal* (Howe, 1993, pp. 253-263).

Physical development. During the first-grade school year, children experience an explosion of growth. High energy is the hallmark of their physical development, and while it may cause some distractibility for students, it also sets the stage for rapid new learning. Asking first-grade children to sit still, listen, and do seat work is understandably challenging for them, and for this reason, their teachers strongly recommend the use of learning centers that both capture their attention and provide the opportunity for physical movement every so often.

Cognitive and linguistic development. The National Association of Elementary School Principals (NAESP) has offered the following comments on this topic:

> *Children in the three-to-eight age range acquire knowledge in ways that are significantly different from the way older children learn. Younger children learn best through direct sensory encounters with the world and not through formal academic processes. Since early childhood is a period of rapid mental growth and development, children seek out the stimuli they need to nourish these developmental abilities. ... Young children acquire knowledge by manipulating, exploring, and experimenting with real objects. They learn almost exclusively by doing, and through movement* (NAESP, 1990, per SREB, 1994, p. 8).

While still very concrete in their thinking, first graders are beginning to learn much more in the areas of reading, mathematics, science, and social studies. Their attention span is about 15 - 20 minutes, although with

material that is interesting and developmentally appropriate this can be extended. First graders work to organize the world into patterns that make sense to them. They are able to deal more successfully with abstractions and with literal and figurative language, although they generally are still very literal. They are more interested in and more effective at problem solving than preschoolers are, asking "why" questions more often, and grasping cause and effect relationships more clearly.

Language, especially in the area of reading, shows rapid development during the first grade. When students encounter difficulty with reading, it affects their academic progress not only in reading, but also in other subjects which are dependent upon reading ability.

In the area of mathematics, first graders are learning addition and subtraction. Still operating mentally at a concrete level, they are likely to learn effectively only when the lesson is presented in a physical form. Therefore, many hands-on learning experiences in all subject areas are needed in this grade. Hands-on learning and the use of manipulatives also meld well with the children's need for physical activity.

Having made the Kindergarten transition into school, first graders now have embarked on the more academic nature of school. Those children who got off to a good start in Kindergarten are likely to continue to do well in first grade. Those children who encountered difficulties in Kindergarten are likely to continue to have difficulties in first grade, unless they have an exceptionally effective program intervention and/or first-grade teacher. Effective teachers and programs are committed to early intervention with children who are experiencing difficulties, in an effort to overcome a natural tendency for continuity with prior performance in the elementary grades (Howe, 1993, p. 253).

Social development. Erickson (1963) characterizes this period as a time when children develop a sense of industry if they are successful in their new learning, or a sense of inferiority if they are unsuccessful. In other words, with the progress in mental development comes a greater self-confidence for the first grader. Self-confidence, in turn, is best bolstered through considerable reassurance. Verbal praise and small rewards, such as stickers, work effectively to reinforce classroom work.

Psychosocially, the typical first grader has made the adjustment to the school environment, and feels more comfortable both with peers and with the teacher. Interpersonal skills have improved since Kindergarten, as has the ability to talk about personal concerns and to share. The first-grade student has learned to become a member of a group and can be depended upon. The more mature first-grade students become more responsible and independent, resulting in fewer notes being lost on the way home, more assignments being completed, and more directions being followed. Close friendships form, though they may change rapidly. A first grader may become very sensitive and defensive when criticized even though he or she is more amenable to accepting blame than before, and may even become somewhat self-critical at times. First-grade children have become more aware of the expectations of others. They are more knowledgeable about what is socially acceptable and are developing tact. Because students in first grade begin to test the classroom limits more, firm but sensitive discipline can provide them with a sense of security there.

Getting Children Academically Ready

General academic readiness. As noted earlier, children's general intellectual, developmental, and social backgrounds must be taken into account in any consideration of ways to help children prepare for school. For example, children are more likely to feel competent in school if they can understand and use the language of the peers and adults they meet in school. They are more likely to have confidence in their own ability to cope with school if they can relate to the ideas and topics introduced by the teacher and other children in class discussion and activities. Parents and preschool teachers can strengthen intellectual preparedness by providing children ample opportunity for conversation, discussion, and cooperative work and play with peers who are likely to start school with them. Parents of children not enrolled in a preschool program can help by talking to the staff at the child's future school about the kinds of stories, songs, and special activities and field trips usually offered at the school and by introducing related topics to their children (Katz, 1991, p.2).

Readiness for reading. An area of tremendous importance in terms of young children's potential for success in school is building a foundation for acquiring prereading, and then reading skills. In the 1996 book, *Teaching our children to read*, Honig (p. 35) emphasizes the importance of acquiring prereading skills in preschool to prepare children for reading instruction in Kindergarten and first grade. In Honig's opinion, any successful reading program must start with a skills strand in preschool or Head Start, and another in Kindergarten. These skills strands must explicitly include activities that teach the names and shapes of letters and, as much as possible, their simplest sounds, because some have more than one. It must include beginning phonemic awareness along with print and syntactic awareness, in addition to the strands that stress oral language; listening to, discussing, and retelling stories; and writing group stories. Activities to develop oral language and print awareness have become widespread. Most preschools and Kindergartens incorporate shared reading of stories with big books that enable a class of children to follow along. Many teachers read and discuss children's literature and write down dictated stories from the children, or have children learn to write letters and try to write stories. According to Honig, what also is needed — not to the exclusion of the activities just mentioned — is a *systematic* strategy for developing an increasing knowledge of the other important prerequisites for reading, such as knowing the names of letters, their shapes, and the more simple sounds associated with them; understanding the internal phonological structure of spoken words; and, a basic understanding of syntax.

Getting Children Socially Ready

Children are more likely to cope successfully in first grade if they already have had positive experiences in a group away from their homes and familiar adults. They also are more likely to adjust easily to school life if they have experienced satisfying interactions with a group of peers, and have acquired such social skills as taking turns, making compromises, and approaching unfamiliar children. Parents and preschool teachers can contribute to social readiness by offering children positive experiences in group settings outside of the home and by helping children strengthen their social skills and understanding (Katz & McClellan, 1991). As outlined by McClellan and Katz (1992), early childhood educators traditionally have given high priority to enhancing young children's social development. Confirming the priorities of these educators, during the last two decades a convincing body of evidence has accumulated to indicate that unless children achieve minimal social competence by about the age of six years, they have a high probability of being at risk throughout life.

Hartup suggests that peer relationships contribute a great deal to both social and cognitive development and to the effectiveness with which people function as adults (Hartup, 1992, per McClellan & Katz, 1993, p.1). He proposes that *the single best childhood predictor of adult adaptation is not IQ, not school grades, and not classroom behavior, but the adequacy with which the child gets along with other children.* Children who are generally disliked, who are aggressive and disruptive, who are unable to sustain close relationships with other children, and who cannot establish a place for themselves in the peer culture are seriously "at risk" (Hartup, 1992, per McClellan & Katz, 1993, p.1). The many long-term risks identified in research include poor mental health, dropping out of school, low achievement and other school difficulties, and poor employment history (Katz & McClellan, 1991, per McClellan & Katz, 1993, p.1).

Pellegrini et al. (Pellegrini, Galda, & Rubin, 1984, per Pellegrini & Glickman, 1991, p. 2) observed children on the school playground at recess through both their Kindergarten and first grade years. The behavioral data presented a clear picture: passive children were less competent than peer-oriented children who engaged in social games with rules. Games may predict achievement, according to the researchers, because the social interaction characteristics of games tap a number of linguistic, social, and cognitive dimensions that are incorporated into later achievement. For example, the ability to use reasoned arguments in games necessitates the use of language forms that also characterize most tests and school literacy lessons (Pellegrini, Galda, & Rubin, 1984, per Pellegrini & Glickman, 1991, p. 2).

Given apparent life long consequences, relationships probably could be counted as the first of four "R's" in education, according to Katz and McClellan (1991). Because social development begins in the early years, it is appropriate that all early childhood programs include periodic assessment of children's progress in the acquisition of social competence. Pellegrini and Glickman (1990, per Pellegrini & Glickman, 1991, p. 1)

define social competence as the degree to which children adapt to their school and home environments and state that it is best assessed with a combination of measures, including behavioral measures, peer nominations, teacher ratings, and standardized tests. The Social Attributes Checklist (see Appendix D) includes items based on research identifying elements of social competence in young children, and items based on studies in which the behavior of well-liked children has been compared to that of less well-liked children (Katz & McClellan, 1991, per McClellan & Katz, 1993, p.1). If assessments based on the checklist are to be reasonably reliable, judgments of a child's overall pattern of functioning over a period of about a month is required.

Healthy social development does not require that a child be a "social butterfly." The quality rather than quantity of a child's friendships is what matters. Teachers can observe and monitor interactions among children, and let children who rarely have difficulties attempt to solve conflicts by themselves before intervening. If a child needs help, the adults responsible for his or her care can implement strategies that will help him or her to overcome or outgrow social difficulties and establish more satisfying relationships with other children. Parents and preschool teachers can contribute to social readiness by offering children positive experiences in group settings outside of the home, and by helping children strengthen their social skills and understanding (Katz & McClellan, 1991, per McClellan & Katz, 1993, p.2).

It is important to bear in mind that children vary in their social behavior for a variety of reasons. Research indicates that children have distinct personalities and temperaments from birth. Nuclear and extended family relationships obviously also affect social behavior. What is appropriate or effective social behavior in one culture may be less effective in another culture; therefore children from diverse cultural and family backgrounds may need help to bridge their differences and find ways to learn from and enjoy the company of one another. Teachers have a responsibility to be proactive in creating a classroom community that is open, honest, and accepting.

Views on Readiness Held by Kindergarten Teachers and Parents

In 1993, the National Center for Education Statistics (NCES) conducted a survey to determine Kindergarten teachers' views on children's readiness for school. As part of the survey, a nationwide sample of more than 1,400 public school Kindergarten teachers was asked to rate the importance of 15 qualities for school readiness. The surveyed teachers averaged 14 years of teaching experience overall and nine years of Kindergarten experience, and 54 percent of them had majored in early childhood education. Figure 1 presents the top three qualities that Kindergarten teachers indicated were very important or essential for readiness.

Figure 1. Qualities Kindergarten Teachers Considered Very Important or Essential for School Readiness

The top three qualities these Kindergarten teachers rated as **very important** or **essential** for readiness were:

1. The child is physically healthy, rested, and well nourished (96% of respondents);
2. The child is able to communicate needs, wants, and thoughts verbally *in the child's primary language* (84% of respondents); and
3. The child is enthusiastic and curious in approaching new activities (76% of respondents).

A majority of these teachers (88%) responded with **agree** or **strongly agree** to the idea that "readiness comes as children grow and mature, you can't push it." However, 94 percent of these teachers also believed that they "can enhance children's readiness" by providing appropriate experiences to help build important skills, consistent with Honig's (1996) view of preparation.

NCES compared the results of the above survey of Kindergarten teachers with the results of its 1993 National Household Education Survey (NHES). Consistent with earlier research, the comparison shows discrepant patterns in parent and teacher responses concerning the emphasis placed on different skills and attributes, and their attitudes and opinions about Kindergarten. For example, parents placed a greater emphasis on the child's social and emotional maturity than on school-related academic skills when deciding whether or not the child is ready for Kindergarten (Eisenhart & Graue, 1990). Compared with teachers, however, parents generally placed greater importance on academic skills in Kindergarten, such as counting, writing, and reading. Furthermore, in contrast to the balance suggested by current research, parents preferred classroom practices that were more academically oriented (Knudson-Lindauer & Harris, 1989).

Knudson-Lindauer and Harris (1989) have suggested that the disparity between parent and teacher beliefs illustrates the need for greater parent and teacher dialogue, as well as parent education programs to assist parents and teachers in defining similar goals. They state that continuity and clarity of goals are imperative to children's successful transition into school, and the higher the degree of similarity that parents and teachers achieve in their goals and expectations, the stronger the effect these expectations will have on children's performance.

Getting Schools Ready for Children

Having looked at some key issues surrounding the readiness of children for school, the reverse perspective must be considered — the readiness of schools for children. In a study of school readiness and children's developmental status (Zill & Collins, et al., 1995), the authors note that 98 percent of all children now attend Kindergarten before entering first grade (a higher figure than that reported by NCES, 1995). They also note that because the children are increasingly diverse in terms of language, ethnicity, and cultural and family backgrounds, there is a tremendous need for innovative approaches in providing early education services, particularly for children from low-socioeconomic circumstances. Although existing preschool programs are known to have beneficial effects in the areas of emerging literacy and numeracy, Zill and Collins found that these programs do not appear to be ameliorating the behavioral, speech, and health difficulties of preschoolers. The implications of this finding are many and profound: failure to address children's needs in all five dimensions of learning and development leads to the prediction that early academically-related gains will not be sustained over time, which in turn could translate to eventual economic losses for the nation.

Consequently, the most important public policy strategy for addressing the school readiness goal is to prepare schools to be responsive to the wide range of experiences, backgrounds, and needs of the children who are starting school (SREB, 1994). A position statement on school readiness issued by the National Association for the Education of Young Children (NAEYC) points out that, given the nature of children's development, "the curriculum in the early grades must provide meaningful contexts for children's learning rather than focusing primarily on isolated skills acquisitions" (1990, p. 22). The curriculum should (a) emphasize informal work and play as the primary vehicle for learning; (b) include a wide range of activities related to the children's direct, firsthand experiences; (c) provide ample opportunities to apply skills being learned in meaningful contexts; and (d) use a wide variety of teaching methods.

Programs that focus exclusively or predominantly on isolated skills development, and rely on long periods of whole-group instruction or abstract paper-and-pencil activities, are unlikely to meet the needs of young children. In contrast, programs that emphasize concepts and processes, use small group instruction and active manipulation of relevant, concrete materials, and use interactive learning provide a solid foundation for academics within a context of meaningful activity. This is not to deny the value of, or exclude totally from practice, skills-based instruction. Rather, such instruction is put into a balanced framework reflective of children's needs. Similarly, many national organizations (i.e., National Council of Teachers of Mathematics, International Reading Association, NAESP, NASBE) call for schooling to place greater emphasis on (1) active, hands-on learning; (2) conceptual learning that leads to understanding, along with acquisition of basic skills; (3) meaningful, relevant learning experiences; (4) interactive teaching and cooperative learning; and (5) a broad range of relevant content, integrated across traditional subject-matter divisions. At the same time, these

organizations also unanimously criticize over reliance upon rote memorization, drill and practice on isolated academic skills, teacher lecture, and repetitive seatwork (Bredekamp & Rosegrant, 1992).

Teachers are more likely to be able to accommodate the diversity of experiences, backgrounds, languages, and interests of their students if their classes are small, or if they have the services of a qualified full-time aide. Having two adults in each class makes it easier to staff classes with speakers of more than one language. Small child-to-staff ratios provide teachers with increased opportunity to spend unhurried time with every child, to address each child's unique needs, and to develop good relationships with parents (Katz, 1991). Research that now is a decade old substantiates the importance of reduced class size in primary grade education (Word, et al., 1991).

Even more important than staffing patterns, a critical component in making schools ready for children is hiring staff who understand the ways young children learn. That is, they should have formal preparation in early childhood education (Texas Education Agency, 1992; 1995b). Alternatively, extensive staff development opportunities should be given to current primary grade teachers, to learn how to teach based on the ways young children learn.

Without developmentally-appropriate primary programs for young children to enter, the benefits of high quality preschool programs can be very quickly lost (SREB, 1994). Even more importantly, the failures that children experience because of unrealistic and inappropriate expectations in Kindergarten and the primary grades can have lasting effects. *Children's attitudes toward themselves as learners and their expectations about their chances for success in school are well established by the end of Grade 3* (SREB, 1994).

As stated in the summary of the Second National Policy Forum on Early Childhood Education (US Departments of Education & Health and Human Services, 1992), the nation is increasingly realizing the importance of children's readiness for school and schools' readiness for children. This readiness is considered to be essential for all children, especially for those at risk of school failure. It is a challenge faced by the great diversity of programs, agencies, and organizations whose responsibility is the education and care of young children and their families, particularly as increasing proportions of our youngest citizens are growing up in poverty (Stallings, 1995).

Facilitating Growth and Development Through Appropriate Practice

The National Association for the Education of Young Children (NAEYC) believes that a high quality early childhood program provides a safe and nurturing environment that promotes the physical, social, emotional, and cognitive development of young children while responding to the needs of families. A major determinant of program quality is the extent to which knowledge of child development is applied in program practices — the degree to which the program is developmentally appropriate (Bredekamp, 1987). Figure 2 presents the NAEYC principles of appropriate practice for primary-age children.

Figure 2. Principles of Appropriate Practice for Primary-Age Children

- Teachers of young children must always be cognizant of "the whole child."
- Throughout the primary grades, the curriculum should be integrated.
- Children in the primary grades should be engaged in active rather than passive activities.
- The curriculum must provide many developmentally appropriate materials for children to explore and think about, and opportunities for interaction and communication with other children and adults.
- The content of the curriculum must be relevant, engaging, and meaningful to the children themselves.
- Primary-age children should be provided opportunities to work in small groups on projects that provide rich content for conversation, and teachers should facilitate discussions among children by making comments and soliciting children's opinions and ideas.
- Teachers must recognize the importance of developing positive peer group relationships, and must provide opportunities and support for cooperative small group projects that not only develop cognitive ability but promote peer interaction.
- The younger the children, and the more diverse their backgrounds, the wider the variety of teaching methods and materials required.
- Curriculum and teaching methods should be designed so that children not only acquire knowledge and skills, but they also acquire the disposition or inclination to use them.

Source: Bredekamp, S. (Ed.) (1987). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8*, pp. 63-66.

Figuring out what does or does not constitute developmentally appropriate practice involves looking at every practice in context and making judgments about each child and the environment in which he or she is functioning. The NAEYC describes developmental appropriateness in terms of children's ages and individual characteristics. In the Texas Education Agency's five-year Prekindergarten study, it specified that cultural appropriateness was another feature of the broad concept of developmentally appropriate practice (TEA, 1995b). According to Marjorie Kostelnik (1993, p. 3), the essence of sound, developmentally appropriate practice with young children can be expressed as: 1) taking into account everything we know about how children develop and learn, and matching that to the content and strategies planned for them in early childhood programs; 2) treating children as individuals, not as a cohort group; and 3) treating children with respect by recognizing their changing capabilities, and viewing them in the context of their family, culture, and community, and their past experience and current circumstances. Each of these will be discussed in turn.

Taking into account how children learn. Specialized knowledge about child development and learning is the cornerstone of professionalism in early childhood education. It encompasses recognizing common developmental threads among all children, as well as understanding and respecting significant variations across cultures. Lillian Katz (1990), a leader in the field of early childhood education, has stated that the younger the child, the more skilled the educator must be. Therefore, staff development is a critical factor in the successful implementation of any early childhood program. Teachers with this required knowledge and expertise are better equipped and more likely to engage in developmentally appropriate practices; are more likely to accept typical variations among children and accurately recognize potential problems that may require specialized intervention; and are more likely to understand the degree of developmental readiness children need to achieve particular goals.

Children's play is a primary vehicle for and indicator of their mental growth and learning. Play enables children to progress in cognitive development (Fein, 1979; Fromberg, 1986; Piaget, 1952; Sponseller, 1982), and serves important functions in children's physical, emotional, and social development (Herron & Sutton-

Smith, 1974). Therefore, teachers must support child-initiated and child-directed play as the central vehicle for learning and growth in young children (Fein & Rivkin, 1986).

Young children construct knowledge from their own experiences. In schools employing appropriate practices, young children are provided with many challenging opportunities to use and develop thinking skills and to identify and solve problems that interest them. In addition, teachers in these schools recognize that some thinking skills, such as understanding mathematical place value and "borrowing" in subtraction, are beyond the cognitive capacity of children who are developing concrete operational thinking, so they do *not* introduce these skills to most children until they are eight or nine years of age (Kamii, 1985) — about the third grade for most youngsters.

Gardner's work (1983) demonstrates that individuals also differ in the strength of various abilities and in the ways different intelligences are combined to complete different tasks, solve various problems, and progress in various domains. This complex view of intelligence helps to explain some of the enormous variation that is observed in children's early learning. *Children whose styles and ways of knowing more closely approximate the challenges of school may appear to be more cognitively competent.* Less obvious is the fact that cultural preferences and patterns are reflected in these cognitive tasks. As more is learned about cultural patterns in approaches to learning, styles of learning, and individual variation, greater overall understanding is gained concerning the ways that cognition and general knowledge are manifested by different children. In the meantime, it is most equitable to assume that all children can learn, and that it is incumbent upon the schools to adapt to the individual needs, interests, and learning styles of children so that all of them can succeed.

Treating children as individuals. In their efforts to guide children's instruction and establish appropriate expectations, teachers must weigh such variables as the children's experiences, knowledge and skills, age, and level of comprehension. Contextual factors, physical resources, and the amount of time available can also affect teachers' decision making. As NAEYC sees it, the challenge for curriculum planners and teachers is to ensure that the content of the curriculum is taught so as to take optimum advantage of the child's natural abilities, interests, and enthusiasm for learning (Bredekamp, 1987, p. 62).

Several years ago, David Elkind reported on an educational phenomenon that had serious implications for the quality of early childhood programs. In his book, *The hurried child* (1988), Elkind described how exposing children to developmentally inappropriate teaching practices, over time, extinguished children's natural curiosity and motivation to learn. Elkind was concerned that when adults intrude in young children's self-directed learning, insisting on their own priorities, children may be learning to become dependent on adult direction and not trust their own initiative. Sound early education encourages children to feel good about themselves as a consequence of their own achievement, not for performing on adult-directed agendas (Elkind, 1986).

At about the same time that Elkind was calling for self-direction in young children's learning, Goodlad (1984, 1987) reported that the dominant pattern of teaching within the classroom was teacher-directed. Teachers were called upon instead to support the development of active thinking in children, fostering skills of analysis, synthesis, and evaluation, rather than emphasizing memorization of information (Pooler & Perry, 1985).

Treating children with respect and in context. When children enter school, their self-esteem comes to include the school's opinion of their family. When children sense that teachers respect and value their families, and respect the particular cultural patterns by which their family lives, their own sense of self-esteem and competence is enhanced. It is developmentally appropriate to view parents as integral partners in the educational process. Teachers should communicate frequently and respectfully with parents and welcome them into the classroom. Teachers need to recognize that cultural variety is the American norm and that children's abilities are most easily demonstrated through familiar cultural forms (Hilliard, 1986).

Respect also involves having faith in children's ability to eventually learn the information, behavior, and skills they will need to constructively function on their own. Having respect implies believing children are capable of changing their behavior and of making self-judgments. Teachers manifest respect when they allow children to

think for themselves, make decisions, work toward their own solutions to problems, and communicate their ideas. Respect for children's increasing competence involves (a) allowing them to experience the exhilaration of accomplishment, and (b) recognizing that self-control is an emerging skill that children achieve over time, given adequate support and guidance. With this in mind, children's transgressions are handled as gaps in knowledge and skills, not as character flaws.

At about age six, most children begin to internalize rules of behavior and thus acquire a conscience. Children's behavior often shows that they find it difficult to live with and by their new self-monitoring and that they need adults' assistance. *Teachers and parents need to help children accept their conscience and achieve self-control.* In appropriate classrooms, teachers use positive guidance techniques, such as modeling and logical consequences, to help children learn appropriate behavior, rather than punishing, criticizing, or comparing children. In addition, teachers involve children in establishing and enforcing the few, basic rules necessary for congenial group living. Sensitive teachers ask children what they think of their work or behavior. The teacher points out how pleased the child must feel when a goal is accomplished, and if achievement is lacking, the teacher empathizes with a child's feelings and solicits his or her ideas as to how to improve the situation.

During the early years, children are not only learning knowledge and skills, they are acquiring dispositions toward learning and school that could last a lifetime (Elkind, 1987; Gottfried, 1983; Katz & Chard, 1989). Dispositions are "relatively enduring habits of mind and action, or tendencies to respond to events or situations" (Katz & Chard, 1989). Compelling evidence exists that overemphasis on mastery of narrowly defined reading and arithmetic skills and excessive drill and practice of skills that have been mastered threaten children's dispositions to use the skills they have acquired (Dweck, 1986; Katz & Chard, 1989; Schweinhart, Weikart, & Larner, 1986; Walberg, 1984). It is important for children to acquire the desire to read during the primary grades as well as for them to acquire the mechanics of reading. Similarly, it is important for children both to want to apply math to solve problems and to know their math facts. The primary grades hold the potential for starting children on a course of lifelong learning. Whether schools achieve this potential for children is largely dependent on the degree to which teachers adopt principles of developmentally appropriate practice.

Thus, from a developmental perspective, experiences planned for children and expectations for children should reflect the notion that early childhood is a time of life qualitatively different from the later school years and adulthood. The basic tenets outlined above provide a common foundation for defining high quality early childhood programs. Such programs are ones in which children of all abilities, ages, races, cultures, religious beliefs, and socioeconomic backgrounds feel lovable, valuable, and competent.

Methods That Are Central to Developmentally Appropriate Practice

Research has identified numerous instructional practices that either are, or are not, consistent with the concept of developmental appropriateness. Because such practices are considered effective in promoting children's learning, a few of them will be described below, including problem solving, cooperative learning and reciprocal teaching, and multi-age, multi-grade grouping. This is not an exhaustive discussion of developmentally appropriate practices; its purpose is to heighten the reader's awareness of the diversity of forms such practices can assume.

Problem solving. Problem solving is the foundation of a young child's learning (Britz & Richard, 1992). Piaget (1952) states that children understand only what they discover or invent themselves. It is this discovery within the problem-solving process that is the vehicle for children's learning. It must be valued, promoted, provided for, and sustained in the early childhood classroom. Opportunities for problem solving occur in the everyday context of a child's life. By observing the child closely, teachers can use the child's social, cognitive, physical, and emotional experiences to facilitate problem solving and promote strategies useful in the lifelong process of learning. Problem solving empowers children, by helping them to make sense of the environment and, in fact, control it. The process allows children in an increasingly diverse world to be active participants and to implement changes. Children versed in problem solving are given a life-long skill that is useful in all areas of learning (Britz, 1993).

The process of problem-solving — in which individuals or groups make choices and learn from them—is facilitated by teachers who observe, listen, and ask open-ended questions that further the process such as, "What will happen if...?" and "What other ways can you think of?" Problem solving is a skill that can be learned and must be practiced. It is facilitated by a classroom schedule that provides for integrated learning in large blocks of time, space for ongoing group projects, and many open-ended materials. The teacher provides the time, space, and materials necessary for in-depth learning (Britz, 1993). Both individual and group processes should be included in the early childhood classroom. Becoming skillful at problem solving is based on the understanding and use of the following steps: (1) identifying the problem, (2) brainstorming a variety of solutions, (3) choosing one solution and trying it out, and (4) evaluating what has happened.

Problem solving becomes a cycle of learning when mistakes are made and different solutions have to be tried. This discovery process allows children to construct their own learning. Goffin and Tull (1985) provide teachers with guiding questions that will help them identify appropriate problems for young children, such as: (1) Is the problem meaningful and interesting? (2) Can the problem be solved at a variety of levels? (3) Must a new decision be made? (4) Can the actions be evaluated?

Changing through problem solving is modeled by adults (Bloom, Sheerer, & Britz, 1991) and facilitated by the teacher in the classroom environment. A curriculum that accommodates a variety of developmental levels as well as individual differences in young children sets the stage for problem solving (Bredekamp, 1987). Choices, decision making, and a curriculum framework that integrates learning, such as Katz and Chard's project method (1989), are especially appropriate for young learners. Donna Ogle's K-W-L (what you *know*, what you *want* to know, and what you have *learned*) is another method of organizing work that promotes problem solving (Britz & Richard, 1992). Themes, units, and webbing are all ways of organizing curriculum that can support problem solving (Britz & Richard, 1992). Beginning with the needs and interests of children, problem solving develops from meaningful experiences important to the children. The teacher-designed curriculum provides the classroom basis for these experiences.

Cooperative learning and reciprocal teaching. Cooperative learning is defined by Cohen (1994) as students working together in a group small enough for each student to participate in a clearly assigned collective task. Students are expected to carry out the task without direct and immediate supervision by the teacher. Among the key features of a cooperative learning environment outlined by Fehring (1987) are: the fostering of interpersonal and small group skills, positive interdependence, face-to-face interaction, and individual accountability.

Cooperative learning has gained increasing acceptance as a strategy for fostering learning gains, developing higher-order thinking, and encouraging prosocial behavior. Cooperative learning also has gained acceptance as a way to manage academic heterogeneity in classrooms with a wide range of basic achievement skills. In fact, most models of cooperative learning advocate the use of heterogeneous groups, and there is considerable research showing that cooperative learning in heterogeneous groups is particularly beneficial for low-achieving students (Cohen, 1994).

Research and practice strongly support cooperative learning as an effective method of developing reading ability across the curriculum. Researchers such as Ann Brown and Annemarie Palincsar (1986) have shown that cooperative learning can influence individual knowledge acquisition. Their work suggests that group participation aids learning, that group settings force learning with understanding to produce conceptual changes, and that individual thought processes originate in social interaction.

Nancy Madden and her colleagues (Madden, et al., 1986) found that student achievement in reading and writing can be increased if state-of-the-art principles of classroom organization, motivation, and instruction are used in the context of a cooperative learning program. Robert Slavin (1987a) reviewed research indicating that when the classroom is structured in a way that allows students to work cooperatively on learning tasks, they benefit academically as well as socially. He emphasizes that cooperative learning methods are usually inexpensive, easy to implement, require minimal training of teachers, and can be instrumental in reorganizing classrooms into exciting, high-achieving places. Lowell Madden (1988) asserts that cooperative reading teams,

that group together students of varied reading levels, motivate poor readers to learn by developing positive feelings about reading. Carl Smith (1989) describes how shared learning activities, including cooperative learning, collaborative learning, and small group learning, can develop critical reading and problem-solving skills.

Another instructional approach, reciprocal teaching, also encourages students to provide instructional support for each other. Designed to improve reading comprehension, reciprocal teaching is a collaborative learning procedure used to support the discussion of a text's meaning and thus the development of comprehension skills (Brown & Palincsar, 1984; Rosenshine & Meister, 1994). The instruction occurs primarily in the context of a dialogue between the teacher and the students and among the students themselves. All members of the group take turns leading the discussion. When the members are not leading the discussion, they support it by providing additional explanation of the content, requesting clarification, and solving any misunderstandings. Though the teacher initially assumes major responsibility for this dialogue and stimulates the participation of each student, the goal is to gradually transfer control of the discussion to the students (Palincsar, Stevens, & Gavelek, 1989).

Ability grouping. Ability grouping in classrooms — grouping students for instruction or achievement to create homogeneous instructional groups — has traditionally been viewed as a rational way for schools to organize instruction. However, recent research has indicated that ability grouping does not enhance student achievement and in fact that it may have negative effects on the self-concepts of the students in lower groups. There is a growing body of evidence indicating that (1) ability group placements are fallible, in that students with similar levels of academic potential may be placed in different ability groups (Dreeben and Barr, 1988), and (2) the placement of children in different ability groups may heighten inequalities in children's academic achievement (Oakes, 1986; Reuman, 1989). Harp (1989b) also noted several negative effects of ability grouping, while Slavin (1987c) concluded that ability-grouped class assignment was the most harmful method of student grouping.

Results of an investigation by Pallas, Entwisle, Alexander, and Stluka (1994) add to this literature in two ways. First, further evidence was found that children with comparable levels of measured academic performance and social backgrounds were often placed in reading groups that ranked them anywhere from near the top of their class to near the bottom. This research is consistent with the view that ability-group placements result from the interaction of individual student characteristics with school organizational processes and constraints. Second, the researchers found that *first-grade ability-group placement could have persistent effects on children's achievement in school over a period of several years and could shape the expectations for children's performance held by significant others, such as parents and teachers*. Specifically, these perceptions may structure the educational opportunities that parents and teachers subsequently make available to children, as well as the social-psychological resources they extend to such children. The very existence of ability grouping creates shared misunderstandings about individual competencies.

Barbara Park (1986) similarly pointed out that although traditional teaching methods have been replaced by more effective methods for the majority of students, they are still used for some low-ability students. These students are in need of the best materials available and of teachers who are knowledgeable about current educational theories.

Addressing the issue of alternatives to ability grouping, Emmer (1984) describes a variety of methods that can be used for instructing classes with students whose abilities and backgrounds vary widely. These methods include team teaching and modifying whole-class instruction. Harp (1989a) presents the following two alternatives to ability grouping: flexible grouping (based on students' level of independence as learners), and cooperative learning groups, per the previous section of this report.

Multi-grade, multi-age grouping. The following information comes from a comprehensive review done by Simon Veenman (1995). He reviewed the results of 56 studies on the cognitive and noncognitive effects of multi-grade and multi-age versus single-grade and single-age classes in elementary schools. According to Veenman, the students in the multi-grade classes do not appear to learn more or less than their

counterparts in the single-grade classes. No consistent differences were found with respect to reading, mathematics, language, or composite scores. A general lack of differences also emerged for the studies with noncognitive measures. In a few of the studies, significant differences were found in favor of the multi-grade classes, suggesting that in affective areas such as attitudes towards school, self-concept, and personal and social adjustment, students sometimes fare better in multi-grade classes than in single-grade classes.

Results of the studies concerning multi-age grouping were consistent with those for multi-grade classes: students in multi-age classes learned neither more nor less than those in single-age classes. With regard to noncognitive outcomes, the number of significant positive findings exceeded the number of studies in which no significant differences were found. Students in the multi-age classes tended to score higher on attitudes toward school, personal adjustment, and self-concept. As with the other method, however, the affective and psychosocial differences between the students in the multi-age classes and those in the single-age classes proved to be very small.

Veenman concludes his findings by highlighting the following four factors, that may help to explain why student learning in multi-grade or multi-age classes does not differ from student learning in single-grade or single-age classes. First, it is unlikely that the grouping alone will affect student learning. *Successful learning is less dependent on organizational strategies than on the quality of the instructional practices.* Second, there may be bias in the composition of multi-grade classes. When students are selected for these classes, such criteria as independent work habits, cooperation, and lack of behavioral or emotional difficulties are frequently mentioned. Third, teachers in multi-grade classes may be inadequately prepared to teach two or more grades at the same time, and may not have teaching materials that are appropriate for multi-grade teaching. Fourth and finally, most of the teachers indicated that multi-grade classes (a) impose a greater workload, (b) require more preparation time, and (c) demand better classroom management skills. Given no change in resources and the demanding nature of multi-grade classes, teachers may have little opportunity or energy for the use of potentially more effective grouping arrangements, and so revert to using the same practices as they did in single-grade classes (Veenman, 1995).

Studies by Slavin (1987b) and Gutierrez and Slavin (1992) have shown that cross-grade grouping *can* result in consistent positive achievement effects for programs involving just one subject area. The features that appeared to be important to almost all of the successful nongraded programs included flexibility of student grouping, frequent assessment of mastery, increased amounts of teaching time for homogeneous instruction groups, subject areas organized by levels, and use of texts written in accordance with those levels. Gutierrez and Slavin also examined nongraded programs that incorporated a great deal of individualized instruction, and found them to be consistently less associated with achievement gain than other nongraded programs. Extensive reliance on individualization, seatwork, and written materials did not appear to enhance student learning. They reported that individualized instruction, learning stations, learning activity packets, and other individualized or small group activities reduced direct instruction time with little corresponding increase in appropriateness of instruction to individual needs. Research on effective instruction has consistently shown that elementary grade student learning is enhanced by direct instruction from teachers, as opposed to extensive reliance on individualization, seatwork, and written materials (Brophy & Good, 1986; Rosenshine & Stevens, 1986). The move to greater individualization in multi-age classes at the expense of direct instruction also might explain why student learning in the multi-age classes, as reviewed by Veenman, does not differ from that in single-age classes. His findings correspond with those of Gutierrez and Slavin (1992), who evaluated nongraded programs incorporating individualized instruction. Related research by Thomas and Shaw (1992) identified certain instructional techniques as essential for effective multi-grade teaching. These techniques were (1) self-directed learning, (2) peer tutoring, (3) careful lesson planning, and (4) variation in methods of instructional delivery.

As a result of interest in multi-age grouping, continuous progress education (in which traditional grade levels do not exist and children progress as they achieve) has regained attention as an educational practice (Nason, 1991). Lolli (1993) argued that when the school organization is based on a factory model of uniformity, children do not have the opportunity to develop critical, creative thinking skills and fulfill their own potential. According to Lolli, however, by using a multi-age setting appropriately, mindless conformity based on grade-level expectations can be avoided.

Another non-traditional classroom option that has been investigated is the nongraded cluster. A growing body of literature recommends the move toward developmentally appropriate, nongraded clusters (Davis, 1992; Goodlad & Anderson, 1987; Katz, Evangelou, & Hartman, 1990; Pavan, 1992). In a synthesis of 27 studies reported between 1948 and 1981, cluster programs were found to have more advantages than traditional classrooms (Pratt, 1983). Pratt reported that in most of the studies, multi-age grouping in the primary grades offered both academic achievement and social development advantages over age-graded grouping. The most likely explanation for these positive findings, in contrast with Veenman's conclusions, is that the nongraded clusters *require* effective functional grouping of students — an element Veenman believed to be absent from many past attempts to implement multi-grade classrooms. Further, Pratt observed that the clusters may be more cost-efficient to implement than entire multi-grade classrooms.

Reading Instruction

Controversy and confusion in the literacy field today center around how best to teach children to read. An often reiterated question is whether skills should be taught directly in an organized and explicit skills development program as part of beginning-to-read instruction, or whether students will acquire these skills more indirectly by being read to, immersion in print, and learning skills in the context of reading for meaning — among the key characteristics of an approach known as whole language instruction. In recent years, leading experts in the literacy field have argued against having this divisive controversy about skills-based versus whole language methods of teaching reading, in which the issue is viewed as an "either/or" question (Adams, 1990, 1991; Adams & Bruck, 1995; Beck & Juel, 1995; Clay, 1991, 1994; Juel, 1994; Pearson, 1993; Pressley & Rankin, 1994; Share & Stanovich, 1995; Stahl, 1992; Williams, 1991; McPike, 1995). Instead, they advocate a *balanced approach* — one that combines the language- and literature-rich activities associated with whole language (aimed at enhancing meaning, understanding, and the love of language) with explicit teaching of the skills needed to develop fluency with print (including the automatic recognition of a growing number of words and the ability to decode new words) — for an effective, comprehensive reading program for all children.

Bill Honig's 1996 book makes explicit the notion that *both* a literature-driven and language-rich language arts program to foster deep engagement with a text, *and* a comprehensive, organized skill development program to develop fluency and automaticity with print, are essential in order for students to become avid and proficient readers. Acknowledging that there is ample literature detailing the issues involved in organizing classrooms and schools for language-rich activities, Honig states that what has been missing is a comprehensive compilation of research and best practice on the specifics of skill development and how skills should be organized, taught, and integrated into the language arts program. Emphasized in his book (p. vii) is "...the importance of skill development strands in teaching children to read and...the instructional and curricular issues that must be addressed if we are to successfully integrate whole language principles with the necessary foundation skills and successfully teach all our children to read." Figure 3 contains Honig's recommended benchmark reading standards.

Figure 3. Recommended Benchmark Reading Standards

1. At the end of Kindergarten, almost all children should know most letter names and shapes, some sounds, and possess defined levels of basic phonemic, print, and syntactic awareness.
2. By the middle of first grade, almost every child should know a significant number of letter/sound correspondences, decoding, and word-attack skills; reach designated levels of phonemic and syntactic awareness; be fluent with a specified number of sight words and families; and know how to spell a specified number of words. At this stage, the student should be able to read from actual books, decode, and self-correct.
3. By the end of first grade, children should be able to read a grade-level book with 95% accuracy and appropriate speed and inflection, and understand what was read. They should have read at least 100 little books or stories. They should reach specified levels of knowledge with more complex letter/sound correspondences, spelling, syllabication, vocabulary, and writing grammar and mechanics.
4. For subsequent grades, children should meet appropriate standards for that grade in the given strands, i.e., read 25 to 35 fiction and informational books at grade level from acceptable lists. Students should also reach specified levels of performance appropriate to their grade in the additional standards of word roots and affixes and the more complex skills such as syllabication, spelling, mechanics, grammar, etc.

Source: Honig, W. (1996). *Teaching our children to read: The role of skills in a comprehensive reading Program*, p.110

In their 1994 research, Pressley and Rankin visited the classes of hundreds of the nation's most effective reading teachers — those whose classes consistently performed best on reading achievement tests. They learned that no matter what individual teachers called their methods (whole language or skills-based), what they actually did was remarkably similar. They consistently used a balanced approach that incorporated direct and organized skill instruction into a broader language-rich and literature-comprehensive language arts program.

In a 1995 journal article, Julianne Turner and Scott G. Paris described their study of motivation for literacy among 6-year-olds, half of whom were in integrated language arts classrooms, and half of whom were in skills-based classrooms. The major finding of the study was that the *most reliable indicator of motivation was not the type of reading program that districts follow, but the actual daily tasks that teachers provided students in their classrooms*. Tasks that provided opportunities to use reading and writing for authentic purposes, that conveyed the value of literacy for communication and enjoyment, and that allowed students to be actively involved in constructing meanings and metacognitions about literacy were most successful in motivating students. Additionally, open-ended tasks were more likely to provide appropriate challenges, genuine choices, some student control over learning, and opportunities both to collaborate with others and to construct meaning through reading and writing. These activities were found to support student motivation through positive, affective consequences and by fostering students' determination, effort, and thoughtful engagement (Turner & Paris, 1995).

Bill Honig cites Robert Slavin's research-based Success for All (SFA) program as one of the most successful comprehensive reading programs. Success for All uses a strategy of having children retell stories to develop active engagement with books. The program is designed to bring *every* student to grade level in reading by third grade. An examination by Ross and Smith (1994) of first-year results of the SFA program in an inner-city school of Kindergarten through second-graders found that SFA benefits on reading achievement were most significant at the Kindergarten level. Teachers were highly accepting of the program, who identified its strengths as including cooperative learning, regrouping, tutoring, early reading instruction, writing, and active learning.

The research and techniques of Marie Clay of New Zealand offer what NAEYC considers "perhaps the most useful strategies we have found," asking the teacher to identify and build on children's literacy strengths through intervention and instruction. Clay, like other current researchers in reading and writing, no longer debates whether phonics and sight words or "whole language" are the tools of choice. Instead, she offers the teacher a variety of ways to help the child develop a repertoire of strategies and cueing systems to decode and gain meaning from text. Children are challenged to develop a wide range of strategies and to articulate those strategies so that they become automatic or habitual (Clay, 1979).

A recent study addressed the problem of making accurate descriptions of how teachers in first-grade classrooms help their students learn to read and write (Stahl, 1994). Findings showed that many of the differences among first-grade classrooms within any type of approach to reading instruction arise from differences in implementation. Observations and discussions confirmed the belief that most teachers of beginning reading are eclectic in their approaches, engaging their students in activities that have been found to be effective, regardless of whatever program, approach, or method they profess to be using. *In general, teachers were observed to pull from the repertoire of activities that came from their own experience and convictions*, and to fashion programs that vary according to the needs of the children in their classrooms within that repertoire. They are influenced by theory, but adapt it to their own ways of working with students. Similarly, the findings of another study (Feng & Etheridge, 1993) indicated that teachers consistently identify their own classroom experiences as the single most important influence in what they believed about reading and reading instruction.

Identification of predictors of children's eventual success in learning to read has been an active area of research (Adams, 1990). Three powerful predictors that have been identified are (1) preschoolers' ability to recognize and name letters of the alphabet, (2) their general knowledge about text — which is the front of the book and which is the back, whether the story is told by the pictures or the print, and which way to turn the pages of the book; and (3) their awareness of phonemes — the speech sounds that correspond roughly to individual letters. While a preschooler's phonemic awareness may be the best single predictor of how much that child will learn about reading in school, the best predictor of a preschooler's awareness is how much he or she has already learned about reading. Reading aloud with children is known to be the single most important activity for building the knowledge and skills they will eventually require for learning to read. If one adds regular doses of educational television such as "Sesame Street," reading/writing/language activities in preschool, and casual language development (i.e., time spent playing with magnetic letters on the refrigerator, playing word or spelling games in the car, on the computer, with crayons, etc.), such children will have experienced several thousand hours of literacy preparation before entering first grade.

Before formal instruction begins, children should possess a broad, general appreciation of the nature of print. They should be aware of how printed material can look and how it works; that its basic meaningful units are specific, speakable words; and that its words are comprised of letters. Of equal importance, children should have a solid sense of the various functions of print — to entertain, inform, communicate, record — and of the potential value of each of these functions to their own lives. To learn to read, a child must learn first what it means to read and that he or she would like to be able to do so. Classrooms from preschool on, should be designed with these concepts in mind.

Adams' (1990) review of the research revealed that overall, a child's success in learning to read in the first grade appeared to be the best predictor of his or her ultimate success in schooling as well as all of the events and outcomes that correlate with that. *Children's first-grade reading achievement depends most of all on how much they know about reading before they get to school.* Differences in reading potential were not shown in Adams' review to be strongly related to poverty, handedness, dialect, gender, IQ, mental age, or any other such difficult-to-alter circumstances. Instead, they were due to learning and experience with print and print concepts. They were due to differences that teachers can teach away — provided they have the knowledge, sensitivity, and support to do so.

Interventions Used With Students at Risk of Failure

Intervention describes the instructional practices, staff, or other resources that are provided for children who for one reason or another are not making adequate progress. Extra attention most often targets literacy development in children from homes where literacy is not practiced or emphasized, or in children who score in the lowest quartile on a variety of informal qualitative measures. Intervention can include special education assistance, Title I services in the classrooms, and extra time focusing on literacy with the classroom teacher, among other possibilities.

Exclusion and retention: Practices to avoid. Exclusion (delaying children's entry into school) and retention (requiring children to repeat an entire grade) have been two of the most widely used strategies for dealing with children who are deemed "not ready" for first or second grade. Both can be viewed as simplistic or one-sided responses to a complicated problem (SREB, 1994, p. 17). These practices both result in a child's being over-age relative to his/her grade level, a factor that has repeatedly been found to be associated with dropping out of school (Paredes & Sanchez, 1992). One review of the research on retention concluded that it "would be difficult to find another educational practice on which the evidence is so unequivocally negative" (Shepard & Smith, 1989, per SREB, 1994, p. 22). In fact, most available research indicates that both exclusion and retention are ineffective strategies that may worsen a child's chances of educational success. After reviewing existing research on achieving the readiness goal, the United States Department of Education's Office of Research (1993, per SREB, 1994, p. 17) concluded recently that:

> *Current "improvement" strategies related to Kindergarten and the early elementary grades often focus on changing external conditions: raising the entry age, delaying entry, and readiness testing are examples...Instead of such external strategies, research suggests that improvement efforts should focus more on the nature and quality of what happens inside early education programs—on children's actual educational experiences.*

According to SREB (1994), in virtually all school systems, a disproportionate share of retention occurs in Kindergarten and the primary grades. Available data from PEIMS show that in Texas public schools retention occurs at first grade significantly more than at any other elementary grade, and retention at ninth grade is by far the greatest of any of the grades (TEA, 1996, p. 11). A variation of grade retention that has been used in some schools is to place children in "transitional" classes for a year before promoting them to the next grade. The stated goal of both retention and transitional classes is to give children who have encountered difficulty an extra year to become better prepared for the demands of the next regular grade. But available evidence suggests that neither approach is effective in achieving that goal.

Studies of children whose families choose to have them promoted even though teachers recommended retention or placement in transitional classes have found that *the promoted children consistently perform as well as or better than their retained peers* (SREB, 1994, p. 22*)*. SREB's meta-analysis of these studies revealed that children who have been retained typically report less school enjoyment, demonstrate lower third-grade achievement test scores, and are more likely to drop out of school than those who have not been retained. Many children who have been retained are rated below average in social maturity by their first grade teachers the second time around, despite the fact that they are now a year older (SREB, 1994, p. 24), which means that retention fails to help children mature emotionally or socially. Results of a study which assessed first- and fifth-grade teachers' perceptions of student retention (Tanner & Combs, 1993) found an unwritten policy among some teachers advocating retention of students as beneficial. Respondents believed that retention improved academic performance or facilitated student growth and increased learning success. *These results suggest a serious gap between research findings on grade retention and teachers' actual practice.*

Given the consistent negative research findings, reducing or eliminating Kindergarten and primary grade retention should be a goal of every school system. It can only be successful, however, if accompanied by

realistic expectations and a developmentally appropriate curriculum. Unless teachers are trained to address the needs of diverse groups of children, the banning of retention is likely to result in social promotion. Children who would once have been retained may languish if teachers are not adequately trained to respond to their unique needs; still others might be referred inappropriately to special education.

Schools that retain fewer children tend to have cooperative arrangements between teachers at different grade levels and to share a philosophy that "you take children where you find them and move them to the extent of their abilities." Teachers in these schools generally believe they have a responsibility to pick up instruction with each child where the previous teacher left off, including working on prerequisite skills whose absence would be considered a deficit warranting retention in another school. These schools also tend to use developmentally appropriate instructional strategies and individualized support services that have been proven effective in promoting learning and development (SREB, 1994).

To briefly review Texas' student retention policy, from 1984 to 1996, Texas state laws and State Board of Education (SBOE) rules pertaining to the retention and promotion of students moved from (a) establishing consistent promotion policies to (b) recognizing repercussions of retention to (c) advocating alternatives for assisting students to (d) funding retention reduction programs. With each of these revisions, greater flexibility was provided to districts in making decisions about the most appropriate academic settings for individual students (Texas Education Agency, 1996; Texas Education Code, 1996).

Texas enacted a retention reduction grant program as Texas Education Code §21.562 in 1993 (TEC 1994). A $5 million appropriation allowed 54 Texas school districts to pilot extended instructional programs to eliminate retentions in the first grade during the 1993-94 school year. The pilots were extended to the second grade in 1994-95. The retention reduction grants provided school districts with alternatives to retention such as lengthening the school day, week, and year, in order to provide additional instruction to students who needed extra assistance to master the essential elements of the state curriculum for their grade level. Statewide data show that the greatest decrease in the percentage of students retained between 1992-93 and 1993-94 occurred at Grade 1. The significant decrease (two percentage points) in the 1993-94 school year can be partly attributed to the Retention Reduction Pilot Programs instituted in the 1993-94 school year. These programs have been shown to be a cost efficient, viable alternative to the practice of retaining students for a full year (Texas Education Agency, 1996).

Tutoring and reduced class size. In their review of early intervention programs at the primary school level, Slavin and his colleagues focused on prevention of early reading failure (Slavin, Karweit, & Wasik, 1993). They found that one strategy stood out clearly from all others in terms of effectiveness — one-to-one tutoring, beginning in the first grade, for children identified as having reading problems. They concluded that *"all forms of tutoring were more effective than any other first-grade reading strategy,"* but those that used certified teachers as tutors were most beneficial. At least three different models using teachers as first-grade reading tutors have been extensively studied and found to be effective, chief among them being Reading Recovery, Prevention of Learning Disabilities, and Success for All. "[These] programs have been found to produce gains in reading that averaged 75 percent or more at the end of first grade" (SREB, 1994, p. 25). Programs using specially trained non-teachers as tutors produced gains that were more modest, but still substantially better than those from any other intervention. Equally important, follow-up studies suggest that the gains from these tutoring programs persist at least up to the end of third grade.

Reading Recovery, described earlier in this text, was developed by Marie Clay of New Zealand. The program offers teachers a variety of ways to help children develop a repertoire of strategies and cueing systems to decode and gain meaning from text (1979). This program uses highly trained teachers and a systematic set of procedures to tutor first graders who are having difficulty learning to read. Success for All is a comprehensive program that uses research-based beginning and intermediate reading programs, one-to-one tutoring for targeted students, family support, and other elements to provide support for all students in the targeted elementary school. Reading Recovery and Success for All are two programs (among others) that have gained national attention for producing significant and sustained positive effects on the reading performance of at-risk children. An examination of the processes and outcomes associated with implementation of Reading Recovery

and Success for All in comparable first-grade classrooms was conducted by Ross, Smith, Casey, and Slavin (1995). Results showed that Reading Recovery strongly benefited tutored students, particularly on passage comprehension. Success for All was more beneficial for special education students and for students in whole class instruction, especially on word attack measures. School climate and teacher attitude results also showed advantages of Success for All's comprehensive approach in integrating the reading curriculum with family support and schoolwide restructuring.

Other interventions, such as reduced class size and reciprocal teaching, also can have positive effects on early school success. However, according to Slavin et al. (1993, per SREB, 1994, p. 26), the gains tend to be smaller. In the case of class size, the reductions must be significant to be meaningful for achievement. For example, reductions in class size on the order of 35 percent or more have been found to produce gains of around 10 percent in reading performance. Reciprocal teaching (mentioned earlier in this review) is another successful method of improving both listening and reading comprehension in first-grade students, according to Brown & Palincsar (1986).

Systemwide reform. Both one-to-one tutoring and reducing class size are high-cost strategies for supporting student learning. However, it is important to bear in mind that no single intervention will be likely to improve school performance over time unless it is accompanied by general improvements in curriculum and instruction. In the words of Slavin and his colleagues, "*Intensive* early intervention must be followed by *extensive* changes in basic classroom instructional practices if all students are to succeed throughout their elementary years" (SREB, 1994, p.26). In other words, the short-term gains achieved by individual students will not last in the long run unless the learning environment for all children improves. Similarly, intensive early learning interventions like one-to-one tutoring will have only limited effects unless other factors that impede learning also are addressed. Children who are unhealthy, malnourished, or who have inadequate support at home will have difficulty taking full advantage of any opportunities they are offered. Strategies that focus on individual children as deficient while ignoring the importance of the social infrastructure that supports learning are doomed to limited impact at best. And the benefits of even the most effective interventions can be quickly reversed unless steps are taken to ensure continuity and follow-up in later years (SREB, 1994, p. 27).

An overwhelming proportion of students at-risk are economically disadvantaged, from single-parent homes, and members of minority groups (Mullis & Jenkins, 1990; Slavin, 1989; Swadener, 1991). Although effective programs for learners at-risk are needed at all educational levels, it is reasonable to assume that the earlier a program starts, the greater its potential impact; if early learning deficits are prevented, there is less chance that failure will occur and, concomitantly, less likelihood that additional special interventions will be needed in higher grades.

Learning to read is critical to every child's success in school. Students who cannot read at or near grade level will almost certainly experience difficulties with skills in most other school subjects. *In the early grades, school success is essentially identical to reading success*; few children are retained or assigned to special education solely on the basis of failure in subjects other than reading. Furthermore, research has shown that failure to read adequately by third grade is associated with significantly higher risks of not graduating from high school, early pregnancy, delinquency, and other problems (Kellam, 1990; Kohlberg, Ricks, & Snarey, 1984; Lloyd, 1978). In a related study, Bottomley and Osborn (1993) report that many reading programs for use with academically at-risk students emphasize one aspect of reading, either decoding or comprehension, at the expense of the other. Their research reiterates the effectiveness of a reading program with a balanced approach that can address the wide array of learning needs now present in primary grade classrooms.

Long-Term Benefits of Early Interventions

Lawrence Schweinhart (1994) reviewed a number of longitudinal studies of preschool programs serving young children living in poverty who were at special risk of school failure. He found that more than other educational innovations, high-quality programs for young children living in poverty have demonstrated the promise of lasting benefits and return on investment. Among the findings of these studies were that program participants had significantly better intellectual performance during the program and for a year or two thereafter. Regarding

the fading of positive effects over time, he reports that clear evidence of the gradual disappearance of effects has been found only for gains in children's scores on tests of their intellectual performance, and not for the other positive effects of programs, which included such things as significantly fewer special education placements and grade retentions, and significantly better high school graduation rates for females. One intensive study, the High/Scope study as reported by Schweinhart, et al. (1993), found evidence that program participation had positive effects such as a lower crime rate, higher earnings and wealth, lower dependence on welfare, and stronger commitment to marriage for participants relative to non-participants. Schweinhart, et al., analyzed the High/Scope preschool program and determined that the program returned to taxpayers $88,433 per participant due to: (1) savings in schooling, due primarily to reduced need for special education services; (2) higher taxes paid by program participants; (3) savings in welfare assistance; and (4) savings to the criminal justice system and to potential victims of crimes. Schweinhart (1994) found that *high-quality programs for young children produce significant long-term benefits* because they (1) empower young children by encouraging them to initiate their own learning activities; (2) empower parents by involving them as partners with teachers in supporting their children's development; and (3) empower teachers by providing them with inservice curriculum training and supportive curriculum supervision, which help them engage in practices that support children and parents.

Other research investigations have demonstrated evidence of positive effects of early intervention, especially for children considered to be at risk of school failure. Among these is the evaluation of the long-term intellectual and academic benefits of the Carolina Abecedarian Project that followed economically disadvantaged African American children over a ten-year period of schooling, until they were 15 years of age (Campbell & Ramey, 1995). Some students participated in this program from preschool, while others did not begin participating until elementary school. Results showed significantly higher academic performance for students given the earliest treatment in preschool, and most importantly, these advantages were maintained seven to ten years after the intervention's conclusion.

The long-term results from the Abecedarian and High/Scope Projects underscore the need for high quality learning environments for impoverished young children. If children are given high-quality educational experiences during the preschool and primary grade years, their academic performance and school progress may be significantly enhanced through mid-adolescence. It is the hope of all of these investigators that the benefits reaped by participants eventually will be reflected in their achieving better life circumstances in adulthood.

But more recently, there has been a growing consensus that the key to effective services for young children is less through careful transitioning between different types of programs (see, for example, Lombardi, 1992), and more through ensuring continuity in certain key elements that characterize *all* good early childhood programs. This notion of continuity is not new. In the late 1960s and early 1970s, efforts such as Project Developmental Continuity and Follow-Through were designed to ensure that the principles of good early childhood programs continued into the early years of elementary school. But today's concept of continuity has changed in several respects. First, there is more consensus in the field regarding what constitutes appropriate practice in early childhood programs. Second, there is growing recognition that parent involvement is a key to a child's success and should be encouraged as children move on to elementary school. Third and finally, the need for supportive services for both children and families has intensified as increasing proportions of young children are living in poverty. Family support and health services likely will become increasingly critical to success throughout the early years. See Figure 4 for a summary of barriers-to-transition issues.

Figure 4. Barriers to Transition: Challenges Typically Faced by Children Moving from Preschool to Elementary School

1. Adjusting to an elementary school environment that is likely to place more emphasis on formal educational experiences (such as acquiring reading and mathematics skills) than on their prior developmental experiences;
2. Being misplaced or retained in an elementary grade or program if the school does not build on the child's successes and level of competence, but instead focuses on the child's failures, lack of readiness, and the remediation of deficits;
3. Moving with their families from early intervention programs that integrated various child and family services to a school program that only provides educational services; and
4. Attending an educational program in which parental involvement is circumscribed, after having parents highly involved during the preschool years.

Source: US Departments of Education, & Health and Human Services. (1992). *Sticking together II: Strengthening linkages and the transition between early childhood education and early elementary School,* Summary of the 2nd National Policy Forum on Early Childhood Education, p. 1.

Parental Involvement in Support of Children's Learning

The SREB states in its 1994 report on school readiness that parents are the most powerful and permanent forces in children's lives. They provide continuity for growth by helping children integrate what they learn both inside and outside of school. They influence their children's attitudes and dispositions toward school, and possess information about their children that is invaluable in helping schools meet the needs of the individual children. Parents should be partners with schools and teachers, and should be involved in decision-making about their children's education. Schools must create an environment that not only encourages parents to become involved, but also rewards teachers for helping them to do so. Such involvement goes well beyond the common role of parents as volunteers or teachers' helpers. This type of partnership requires that both parents and schools recognize that both are necessary to the success of children and that neither can do the job alone.

Incorporating parental involvement into effective practice is difficult. Too often, meaningful collaboration between parents and schools may be hampered by a lack of trust. Parents, especially those whose own school experiences were less than positive, may feel uncomfortable with schools in general, and that discomfort inevitably will be communicated both to their children and to teachers. Teachers, on the other hand, may view parents as uncaring or uninformed in their ideas about what their children need. These problems may be exacerbated when parents and teachers come from different cultural backgrounds. Chrispeels (1991, p. 368) among many others (Chavkin and Williams, 1988; Comer, 1991; Krasnow, 1990; and Epstein, 1991), notes that low expectations and negative attitudes on the part of school staff, particularly regarding low-income or non-English-speaking families, impedes both program development and implementation. Parent activities need to be responsive to the language and culture of the family and to be tailored to meet the specific needs of teen parents, single parents, working parents, blended families, and families with special service needs.

Davies (1990) and Epstein (1991) both describe the need to make schools hospitable to parents, often in ways as simple as providing a place for parents to gather that is equipped with a telephone. Other potential barriers to parental involvement include: lack of transportation, lack of time for involvement (for parents and teachers), inadequate child care arrangements, inflexible employer leave policies, lack of access to parent and community involvement materials, lack of knowledge and information about the best practices for involvement, and lack of sufficient funding for programmatic involvement efforts (TEA, 1989, p. 13). The essential first step toward increasing parental involvement is an acknowledgment that parents, teachers, and schools all want essentially the same things for their children. They want them to be motivated to learn, to master basic academic skills,

and to be socially competent. They want them to succeed in school, although they may differ in their understanding of what it takes to achieve that success (SREB, 1994, p. 28).

Schools can do a variety of things to make parents feel welcome and to foster parental involvement. Communication is essential. Parents must be informed regularly about the philosophy, curriculum, goals, and progress of the school and its programs. This is especially critical when schools are implementing developmentally appropriate curriculum changes. Parents must know that their reactions and comments are valued, and that their concerns are taken seriously. Teachers should be available to meet with parents and every effort should be made to accommodate parents who visit or contact the school. Family members should participate in ways that go well beyond traditional parent activities such as fundraising and annual parent-teacher conferences. Parents can be involved as decision makers, volunteers, and staff. They can participate in parent education and support groups, be encouraged to observe the classroom, and in general, take a more active role in their child's education both at school and at home. Teachers and schools should help parents become more effective in working with their own children and in reinforcing classroom experiences. Schools must actively support families in seeking comprehensive services to alleviate economic, health, social and emotional problems, and they must acknowledge the impact of such problems on children (SREB, 1994, pp. 27-30).

How Can the Success of First-Grade Students Be Assessed?

Developmentally Appropriate Assessment

NAEYC describes **assessment** as the process of observing, recording, and otherwise documenting the work children do and how they do it. The results of this process are used as a basis for a variety of educational decisions that affect the child, including planning for groups and individual children and communicating with parents. Assessment encompasses the many forms of evaluation available to educational decision makers. When used in the service of curriculum and learning, assessment requires teachers to observe and analyze regularly what the children are doing in light of the content goals and attendant learning processes.

The purpose of assessment in early childhood programs is to help educators, parents, and caregivers better understand, appreciate, and respond to the growth, development, and unique characteristics of each child in their care (Leavitt & Eheart, 1991). Assessment of individual children's development and learning is essential for program planning and implementation of developmentally appropriate programs, but should be used with caution to prevent discrimination against individuals and to ensure accuracy (Bredekamp, 1987).

Along with calling for changes in curriculum, major national organizations also have raised concerns about the negative effects of traditional methods of assessment, particularly standardized paper-and-pencil, multiple-choice achievement tests (National Association of Early Childhood Specialists in State Departments of Education, 1987; NAEYC, 1987; National Council of Teachers of Mathematics, 1989; Fair-Test /National Center for Fair and Open Testing, 1990; Kamii, 1990; National Commission on Testing and Public Policy, 1990). There is increasing recognition that curriculum reform must be accompanied by testing reform. National organizations, objecting to what they consider to be overuse, misuse, and abuse of formal, standardized testing, are now calling for more performance-based assessments that align with current views of curriculum and more accurately reflect children's learning. The emerging consensus about needed curriculum and assessment reform, although encouraging, has been slow to result in real change in curriculum or assessment practices in the early grades (Bredekamp & Rosegrant, 1992).

According to the SREB (1994), the use of standardized norm-referenced achievement tests to assess either individual progress or potential of primary-age and younger children is not appropriate. By definition, such tests compare children with each other as if development were uniform. In contrast, the younger the age group, the more dramatic the variations in development typically are within the group, and the more likely that differences in test scores reflect factors other than ability. In addition, researchers such as Pellegrini, Dresden and Glickman (1988) report that test scores predict only 50 percent of the variance in selected criterion measures, meaning that other factors are equally as important in determining performance.

According to the SREB (1994), few parents, teachers, or administrators fully understand the limitations of standardized tests. As a result, test scores are often used to draw inappropriate conclusions about individual children's strengths and weaknesses and therefore to make inappropriate decisions about their educational careers. Parents and teachers may erroneously lower their expectations for some children, and the general perception that test results that fall below the norm are equivalent to failure can have a devastating impact on the expectations and self-esteem of the children themselves. The damage is compounded when results on standardized tests are used to hold primary school teachers accountable for their effectiveness. Test results may come to be viewed as ends in themselves, leading to a curriculum that focuses too narrowly on "teaching to the test." In many cases, this has meant extending curriculum models that may be appropriate for older children down to ages where they are not appropriate. What used to be taught in second grade may now be taught in first grade, what used to be taught in first grade may now be taught in Kindergarten, and what used to be taught in Kindergarten may now appear on tests used to determine children's "readiness" for school (Texas Education Agency, 1992).

The inappropriateness of standardized norm-referenced achievement tests for evaluating individual young children does not mean that their progress should not be assessed. But assessment should be a natural and ongoing part of learning, and assessment techniques should meet the same standards for developmental appropriateness as curricula. In Kindergarten through Grade three, each child's progress should be compared primarily to his or her own prior performance and to standards for the development of critical skills (SREB, 1994, p.15). Comparisons to other individual children — especially those based on norm-referenced test scores — should be discouraged. Criterion-referenced scales can be used to compare the performance of individual children with state or national standards. This comparison provides guidance on the child's overall progress without promoting counter-productive competition among young children (or their parents) at different developmental levels.

The most meaningful approach to assessment of individual young children is through continual observation by teachers and parents of children's progress in all developmental domains, including social, emotional, physical, and cognitive. Performance inventories and portfolios of children's work may provide richer pictures of young children's progress than do standardized test results. Similarly, narrative reports by teachers outlining children's progress probably are more useful at the primary level than numeric or letter grades, since they provide information for parents to help their children at home (SREB, 1994, p. 16), and for teachers at subsequent grade levels in planning appropriate instruction. Figure 5 presents the eight characteristics of developmentally appropriate assessment for your children.

Figure 5. Characteristics of Developmentally Appropriate Assessment for Young Children

1. It is continuous.
2. It is directed to all developmental areas.
3. It is sensitive to individuals and cultural diversity.
4. It is completely integrated with curriculum and instruction.
5. It is based on a defensible theory of child development and learning.
6. It is collaborative between teachers and parents.
7. It is helpful to teachers in their planning to meet the needs of children and the goals of the program.
8. It is unequivocally in the best interests of the children.

Source: Bredekamp & Rosegrant (Eds.) (1992). *Reaching potentials: Appropriate curriculum and assessment for young children (Vol. 1)*, p. 61

GRADE 1 TEACHER AND STUDENT SURVEYS

Purposes and Description of the Study

The Systemwide Elementary Reform (SER) project is intended to respond to a number of information needs that have been identified in research-based literature and in TEA policy related to (a) accountability for performance, (b) decentralization of authority, and (c) a general demand for systemwide improvement. Specifically, the project supplements the scope of work for STEPS. The latter project, STEPS, is concerned with aggregate student performance over time in the state of Texas; the SER project focuses on the primary grade levels that are targeted for systemic reform under Academics 2000 (TEA, 1995a), with particular emphasis on Grade 1. These grade levels have the fewest pertinent performance indicators included in the Academic Excellence Indicator System or AEIS (TEA, 1995c). By gathering this supplemental information, the SER project can address the following broad areas of concern.

- Establish demographic, program participation, and performance trends so that the impact of policy changes (if any) can be monitored in relation to established trends.
- Build models of the more complex and dynamic relationships among *inputs* (e.g., resources, student groups, staff development efforts), *contexts* (e.g., district size, wealth, student mobility, etc.), *processes* (e.g., attendance rates, instructional methods, staff development), and *products* (e.g., promotion rates, Texas Assessment of Academic Skills (TAAS) pass rates, teacher ratings) in the Texas public education system.
- As a result of the first two areas, develop a fuller understanding of the progress of the public education system as a whole.

Flowing from these areas of concern are discrete evaluation questions that form the SER project's focus. The five main questions listed below delimit the project's scope of work.

(a) What does first grade look like in Texas?

(b) How do the teachers view the children's readiness, behavior, and academic growth?

(c) What programs, practices, and other features do first-grade teachers report using in their schools and in their classrooms?

(d) How is student progress in Grade 1 related to each of the previous three areas (student characteristics; teacher perceptions of readiness, behavior, and academic growth; and reported programs and practices)?

(e) What long-term indicators of performance are related to Grade 1 students' characteristics; teacher perceptions of readiness, behavior, and academic growth; and reported programs and practices?

The last question cannot be addressed until longer-term performance data are available, within the next two years.

Sampling Methodology

One hundred campuses that served Grade 1 were selected for inclusion in the study on the basis of a number of discrete criteria. In September 1995, all superintendents in the state were asked if they did *not* want schools in their respective districts to be included in the study. Those few districts whose superintendents asked to be excluded were ruled out before the sample was drawn. From the remaining districts, campuses that served Grade 1 were selected on several bases:

- A group of five campuses that received 1995 campus accountability ratings of *Exemplary* were selected randomly from all 225 campuses so rated in 1995;

- A group of five campuses that received 1995 accountability ratings of *Low Performing* were selected randomly from all 268 campuses so rated in 1995; and,

- Five more campuses were selected randomly from all 134 campuses in the state identified for AEIS purposes as being on year-round calendars.

After these were selected, a 4 x 4 matrix was formed by cross referencing the four levels of district urbanicity (imputed to be the same for every campus in a district) — urban, suburban, non-metropolitan, and rural — with the four quartiles of a composite demographic variable. This composite variable was comprised of information about (a) the percentage of economically disadvantaged students on campus, weighted 35 percent; (b) the percentage of minority students on campus, also weighted 35 percent; (c) district wealth, weighted six percent; (d) the percentage of limited English proficient students, weighted 12 percent; and (e) the percentage of mobile students (defined as the number of students who have missed at least one six-week period at a particular school, divided by the number of students who were in membership at any time during the school year (*AEIS glossary,* TEA, 1995c)). The remaining 85 campuses housing Grade 1 students were drawn to fill this 16-cell matrix. Sampling weights were applied to the campus-level data in all subsequent campus-level analyses. This helped ensure that the raw data were treated in a manner that preserved the proportionality of the total matrix population, thereby maximizing representativeness and generalizability of the sample data relative to the state as a whole. See Tables D-1 and D-2 in Appendix D for specifics about the sampling matrix and weights used.

Although the final sample consisted of more of the larger urban and suburban districts and fewer of the rural and non-metropolitan districts, when compared to the state, the sample is fairly typical of the state in terms of such major characteristics as district wealth, percent of minority students and economically disadvantaged students enrolled, per-pupil expenditures, percent of minority teachers, teachers' average salary, and teachers' average years of experience.

A total of 99 campuses returned survey forms with data for analyses. The discrepancies between the numbers of schools and students drawn in the sample, and the actual numbers participating, also are captured in Table D-1 in Appendix D. In some instances, a greater number of survey forms were received than there were students in the initial sample. This reflects the instruction given to teachers to complete surveys for new students who arrived in their classrooms after their districts had completed fall PEIMS data submissions.

Data Sources and Collection

Data sources. The study was constructed to combine data from those available from the agency with one round of original data collection. Two sources of data were (a) the PEIMS files maintained at the agency, and (b) computer files that maintain teachers' Examination for the Certification of Educators in Texas (ExCET) scores. New data were collected through the administration of two survey forms to all Grade 1 teachers on participating campuses (see Appendices E and F). The first survey was to obtain information from teachers about their schools and classes that could not have otherwise be obtained from the PEIMS database. The second survey was to obtain detailed information about each child in each teacher's class, again that could not be obtained from PEIMS.

Survey development and administration. The surveys were developed over a six-month period beginning in fall 1995. A preliminary set of items was prepared for each form. Resulting draft survey forms were subject to review by the agency's Data Approval Committee (TEADAC), which specified that staff in key areas of the agency (Special Education, Bilingual Education, and Curriculum, Instruction, and Professional Development) review the forms. All three units were given the forms, and input received from staff guided further refinement of the items. Two school districts were then contacted to request permission to pilot test the survey forms. These were districts whose superintendents had specifically requested to be included in the study, but that were not drawn in the sample. Central office staff in those two school districts made

arrangements with two elementary schools each (for a total of four schools) to have Grade 1 teachers complete the forms.

The teachers in the pilot test were asked to complete one Draft First-Grade Teacher Questionnaire each, and one Draft Individual Student Questionnaire for each child in their classes (*without* providing any identification information about the children, so it was not possible to match individual children to particular draft survey forms). Teachers also were asked to provide specific and open-ended feedback about the forms, including (a) stating their preferences for alternate wording of selected items, (b) identifying important information the agency might be overlooking, (c) identifying areas of confusion not anticipated by the agency, and (d) reporting how much time it took them to complete the forms. Their responses were employed to bring the surveys to near final versions that were furnished to an agency contractor for conversion into scannable documents.

In the process of converting the drafts to scannable documents, the contractor offered additional advice concerning the layout and sequencing of the survey items, as well as recommending minor changes of punctuation and wording reflective of the company's extensive experience with large-scale data collection using scannable forms. After all changes were approved, in March 1996, the contractor printed the final versions of the forms. Facsimiles of the two surveys are included in Appendices E and F, with the number and percent of students for whom teachers made each response.

Following the time to decline participation in the survey, superintendents and campus principals were notified in writing in February 1996 of their selection into the study. In two instances, because of unforeseen circumstances, a campus requested to be replaced. These requests were honored and replacements were selected within the confines of the sampling strategy, that is, they were drawn from the same cell of the sampling matrix so that representativeness was preserved.

In March 1996, all selected campuses were furnished sample copies of the survey forms to preview. Further, local district staff were advised to obtain informed parental consent if local policies warranted this, *before* teachers had received the forms. At this time, the agency pre-coded survey forms for the individual Grade 1 teachers and students on the selected campuses, so that the answers on the forms could later be linked back to other information in PEIMS about the individuals, such as basic demographics and program participation information — saving teachers valuable time and minimizing error in completing identification information.

The pre-coded survey forms were grouped separately for teachers and students, and were packaged in alphabetic order by campus within district. Included in the packages were detailed instructions and postage-paid return envelopes, so that teachers could seal their classrooms' completed survey forms and return them directly to the agency. The forms were mailed to the schools in the first week of April, and were due back at the agency on May 13, 1996. This provided teachers with approximately four to five weeks in which to complete the surveys.

Upon their return to the agency, forms for each teacher and his/her respective class were logged in and manually prepared for scanning. This preparation included several quality control measures, including removal of stray pencil marks, completing duplicate clean forms for those that had been inadvertently torn or stained by the respondents, physically turning all forms to the same orientation, and ensuring proper sequence of the forms before scanning. The contractor picked up sealed cartons of prepared batches of forms, scanned them in July 1996, and returned both the raw data and two copies of the scanned data files to the agency by the end of that month.

SURVEY RESULTS

Results from the survey are summarized in this portion of the report. The survey reflects approximately 9,500 first-grade students on 99 elementary campuses in 85 school districts across the state. Discussion of the findings, which serves to cast them in an interpretive framework, follows in a separate section (see page 63).

Research Question (a): What does first grade look like in Texas?

First-Grade Students in Texas

Table 1 displays the percentages of students in the sample compared with the state across several student characteristics. The sample and the state percentages are very similar.

Table 1. 1995-96 First-Grade Students: Characteristics of the Sample and the State

Student Characteristics	Sample N = 9,489	State N = 303,928
Gender		
Female	49%	49%
Male	52%	52%
Ethnicity		
White	47%	45%
Hispanic	40%	38%
African American	12%	15%
Asian American	1%	2%
Native American	Less than 1%	Less than 1%
Economically Disadvantaged	47%	48%
At Risk	33%	32%
Served by Title I	40%	41%
Limited English Proficient (LEP)	21%	20%
Served by bilingual program	16%	14%
Served by ESL program	4%	4%
Served by special education	8%	8%
Identified as gifted/talented	3%	3%
Prior participation in PreK	28%	29%

The following descriptive profile applies to first-grade students in Texas during the 1995-96 school year.

- There were 303,928 first-grade students.
- Over one-third of the children were Hispanic, and over one-half were members of an ethnic minority group. The proportion of minority children entering first grade has risen steadily over the last 5 years.

- A little less than half of all first graders were economically disadvantaged. This, too, has increased over the last 5 years.
- Nearly one-third of all first graders were identified by districts in PEIMS submissions as being at risk of school failure or of dropping out.
- About 40 percent of first graders were served in Title I programs (federally sponsored programs serving economically and educationally disadvantaged students).
- About one-fifth of first graders were identified as having limited English proficiency (LEP).
- Eight percent of first-grade students participated in special education programs.

These sociodemographic trends are similar to those reported for the nation as a whole. Of the students in the sample, only one percent were cited by teachers as having been considered homeless at some point during the school year. Additionally, teachers responding to the survey indicated that 74 percent of first-grade students in the sample lived with both parents, and 20 percent lived with only their mothers. The remainder of the students lived with other relatives (3.5%), father only (2%), legal guardians (.4%), or others (.6%). Comparable home information is not available statewide.

Prior participation in Prekindergarten or Early Childhood Education. Of the first graders for whom surveys were received, 3,345 were identified as having participated in either early childhood education (ECE), public school Prekindergarten (PreK), or Kindergarten during the 1993-94 school year, two years prior to the survey. Prekindergarten programs target students who are limited English proficient or economically disadvantaged. The ECE program is for students with identified special education needs.

Of these 3,345 students, 2,650 students (79%) were enrolled in PreK two years prior to the Grade 1 survey, 162 students (5%) were enrolled in ECE two years prior to the survey, and 533 students (16%) were enrolled in Kindergarten two years prior to the survey.

In 1995, 55 percent of first-graders in the nation had attended *some form of child-care or preschool program* before Kindergarten (National Education Goals Panel, 1995a), while in Texas, 29 percent of all first-graders in 1995 had attended Texas public PreK programs. Table 2 presents summary characteristics of the 2,650 students in the sample who attended Prekindergarten and the 162 students who attended the ECE program in 1993-94 (collectively 30% of the sample), as well as summaries of the performance indicators as reported by their first-grade teachers. Five hundred and thirty-three students in the sample of first graders were enrolled in Kindergarten two years prior to the survey; these data are not presented. *As a cautionary note, all numbers may not total to either 2,650 or 162, due to some information not being available for every student.*

Table 2. Former Prekindergarten and ECE Students Compared With Remainder of Sample on Certain Characteristics

Student Characteristics	Former PreK (N=2,650)		Former ECE (N=162)		Remainder of Sample* (N=6,149)	
From PEIMS Data for Grade 1	Number	Percent	Number	Percent	Number	Percent
Limited English proficiency	979	38%	6	4%	788	14%
Economically disadvantaged	2,156	81%	73	45%	2,238	40%
Served by special education	181	7%	133	82%	328	7%
Served by a bilingual education program	747	28%	3	2%	604	11%
Served by an ESL program	146	6%	1	1%	149	3%
Identified for gifted/talented programs	55	2%	2	1%	198	4%
Served by a Title I program	1,836	69%	60	37%	2,321	41%
From Survey Data						
Entered ready to learn †	1,576	62%	61	43%	4,050	69%
Overall progress during first grade: †						
Excellent or above average	613	24%	56	40%	1,154	20%
Average	1,110	44%	54	38%	2,307	39%
Below average or poor	817	32%	31	22%	2,397	41%
Oral reading proficiency: †[a]						
Performing above grade level	441	17%	13	9%	1,506	26%
Performing on grade level	1,317	52%	55	39%	2,915	50%
Performing below grade level	782	31%	73	52%	1,420	24%
Promotion status:**†						
Expected to be promoted	1,861	73%	78	57%	4,624	79%
Expected to be placed	187	7%	30	22%	392	7%
Expected to be placed	258	10%	12	9%	428	7%

* Students may appear in more than one row but not in more than one column.
** Not all categories are included, therefore the percentages will not total 100% (see page 34).
† Numbers may not sum to consistent totals due to some information not being available for every student.
[a] Results for reading comprehension and mathematics proficiency were comparable to those for oral reading.

When teacher perceptions about those first graders who had participated in Prekindergarten two years prior to the study were compared to their perceptions about the remainder of the sample, a smaller percentage of PreK participants (62% PreK vs. 69% Remainder) was perceived to have begun the school year ready to learn; a higher percentage of PreK participants (68% PreK vs. 59% Remainder) was seen as making average or above average progress; and a somewhat similar percentage of PreK participants (73% PreK vs. 79% Remainder) was expected to be promoted. Teachers believed similar percentages of students who either had or had not attended PreK should be retained in Grade 1 (10% vs. 7%).

When teacher perceptions about those first graders who had participated in ECE two years prior to the study were compared to their perceptions about the remainder of sample, a smaller percentage ECE participants (43% ECE vs. 69% Remainder) was thought to have begun the school year ready to learn; a larger percentage of ECE participants (78% ECE vs. 59% Remainder) was seen as making average or above average progress; and a smaller percentage of ECE participants (57% ECE vs. 79% Remainder) was expected to be promoted.

Teachers rated student mastery in the seven subject areas for which there is a state-adopted curriculum, including English language arts, mathematics, science, social studies, health, physical education, and fine arts. The first four are considered core or foundation subjects; the last three comprise the enrichment curriculum.

Most of the former PreK students were viewed as having mastered most or all of the essential elements in each of the seven skill areas (ranging from 62% in language arts to 87% in physical education). Relatively fewer of the students who had participated in Early Childhood Education were viewed as having mastered most or all of the essential elements (ranging from 48% in language arts to 68% in physical education).

First-Grade Educators in Texas

Of the 17,787 Grade 1 teachers in 1995-96, 466 were surveyed to gather information about their classrooms. In Table 3 the characteristics of the sample and of all first-grade teachers statewide are compared. In terms of demographic percentages by ethnicity, gender, and years of teaching experience, the sample very closely approximated Grade 1 teachers statewide, with the sample being comprised of slightly fewer White teachers and slightly more teachers with 20 or more years of teaching experience. Teaching experience ranged from less than one year to 41 years in the sample and from less than one year to 46 years statewide.

Table 3. 1995-96 First-Grade Teachers: Characteristics of the Sample and the State

Teacher Characteristics	Sample N = 466	State N = 17,787
Gender		
Female	98%	97%
Male	2%	3%
Ethnicity		
White	72%	75%
Hispanic	19%	18%
African American	8%	7%
Asian American	0%	Less than 1%
Native American	1%	Less than 1%
Years of teaching experience		
4 years or less	27%	28%
5-9 years	17%	20%
10-14 years	17%	18%
15-19 years	14%	14%
20 or more years	24%	19%

The vast majority (88%) of the teachers surveyed described their classes as regular Grade 1 classes (not transitional or developmental classes). No differences were found between novice and experienced teachers (those with five or more years of experience) in terms of the numbers of challenging or diverse students they had in their classrooms, such as economically disadvantaged students, limited English proficient students, and so forth.

Research Question (b): How do the teachers view the children's readiness, behavior, and academic growth?

Readiness

Sixty-six percent of the students in the sample were perceived by their teachers to have begun first grade ready to learn the grade-level curriculum. Teachers indicated that 73 percent of the students was functioning on or above current grade level in both oral reading proficiency and in reading comprehension at the time this survey was completed. In mathematics instruction, an even higher percentage (82%) of the first-grade students was reported as functioning on or above current grade level.

Student Behaviors

Teachers rated the frequency of specific learning-related behaviors demonstrated by children in their classrooms. These ratings were given numeric values for consistency, so that higher values reflected the most desirable behaviors, and then the numbers were summed. According to the teachers, the majority of the students often exhibited the desired behaviors at school, such as conversing freely at school and participating in class activities. From the 9,038 responses, a small percentage of the students (7%) was identified as always exhibiting the desired behaviors. An even smaller portion (4%) was identified as either seldom or never exhibiting the desired behaviors. These data are summarized in Table 4.

Table 4. Overall Frequency of Desirable Student Behaviors in Learning

Overall Frequency	Number	Percentage
Always	656	7%
Often	5,128	57%
Sometimes	2,873	32%
Seldom	375	4%
Never	6	Less than 1%

Discipline

To facilitate opportunities for students to learn in a safe environment, the *Texas Education Code* (TEC, 1996 §37.002) requires districts to implement policies for removing from class those children who do not meet the local code of conduct, and to provide them with alternative settings for behavioral management. Teachers have the prerogative to remove such children from the classroom for disruptive behavior. The large numbers of students who were referred outside the classroom for disciplinary action (N = 1,710) and sometimes referred to alternative settings (N = 291) may be a response to the "safe school" policy in the law that became effective May 30, 1995.

Teachers reported that the vast majority of students (82%) were *not* referred outside the classroom for disciplinary action during the part of the school year covered by the survey. Only eight percent were said to have been referred outside the classroom once; however, 11 percent reportedly were referred outside the classroom twice or more during the school year. Generally, students whom teachers said were disciplined outside the classroom were less likely to be rated by teachers as performing on or above grade level in reading and mathematics than students whom teachers said were not disciplined outside the classroom. Of the students teachers said were *never* referred for disciplinary action, 82 percent were reported as making average to excellent progress in first grade; however, only 67 percent of the students whom teachers said were referred for disciplinary action received similar ratings.

According to the teachers, very few of the students in the sample (3%) were sent to an alternative learning setting for disciplinary actions during the year. Of these, most (68%) reportedly were sent to an in-school suspension center. Survey data showed that nine students (3%) were sent to an alternative campus and 68 students (23%) were sent to some other type of alternative setting. Thirteen students (5%) were said to have been sent to a combination of settings over the course of the year.

Over half of the students (53%) that teachers said were sent to alternative settings spent less than one day there, but 109 (38%) of the students' surveys were coded to show that they had spent anywhere from one to five days in an alternative setting during the first grade. Teachers reported that 13 first graders (5% of those coded for alternative settings) spent 21 days or more in alternative learning centers.

Physical aggression and discipline. There were 664 students (7%) in the sample who were categorized as having been either often or always disciplined for physical aggression towards their peers. Of those 664 students, 407 (61%) reportedly were referred out of the classroom for disciplinary action twice or more during the year and 317 students (48% of the 664 students) were referred outside the classroom three or more times.

Suspension. Teachers reported that nearly all of the students in the Grade 1 survey (99%) were not suspended from school during the year. Otherwise, teachers' responses indicated a total of 75 students (less than 1%) was suspended once during first grade; of the 75, only 50 students (less than 1%) were suspended twice or more.

Ten percent of the students identified by teachers as having been disciplined often or always for physical aggression were also reported as having been suspended at least once during the year, while six percent were said to have been suspended twice or more during first grade. According to the teachers, ten of these students (less than 1%) were suspended *four or more* times during first grade. Eight of the 10 students reported as suspended four or more times also were rated by their teachers as seldom or never seeking appropriate assistance from adults at school, and six of them were rated as seldom able to make and maintain friendships with classmates.

Progress

On average, the majority of students were described by teachers as making satisfactory progress during the school year. More specifically, teachers indicated that 41 percent of the students in their classes made average progress, while 16 percent were said to have made above average progress, and six percent made excellent progress during the year. According to their teachers, 14 percent of the students made poor progress during the year, and 23 percent made below average progress.

Promotion Status

Teachers believed that most of the students in the survey should be promoted to Grade 2 (77%). Teachers also thought that almost the same number of students (8%) should be placed (a trial promotion) in Grade 2 as should be retained in Grade 1 (8%). [Statewide in 1994-95, the Grade 1 retention rate was 5.5% (TEA, 1996).] Teachers indicated one of the following four outcomes for the remainder (7%) of the students: (a) promotion

from a transitional program (in which a student is given accelerated instruction and then moved into the regular assigned grade level when he or she is ready) to regular Grade 1; (b) placement in a transitional program; (c) re-evaluation following completion of a summer program; or, (d) a future determination of promotion status (after the time of the survey). Because the great majority of the students fell into one of the first three categories described (promote to Grade 2, place in Grade 2, or retain in Grade 1), further discussion will focus only on these three promotion categories.

Perceived Mastery of Essential Elements and Anticipated Promotion Status

In all seven subject areas in the state-adopted curriculum (see Table 5), more than 86 percent of the students who were expected to be promoted to the second grade also were rated as having mastered most or all of the essential elements. In all subject areas except English language arts, at least 94 percent of those students who were expected to be promoted to Grade 2 were thought to have mastered most or all of the essential elements. Table 5 compares results for students to be promoted, placed, or retained as perceived by teachers. Table 5 compares results for students to be promoted, placed, or retained as perceived by teachers.

Table 5. Perceived Student Mastery of the Essential Elements by Subject Area and Anticipated Promotion Status

	Percent Mastering All or Most Essential Elements That Teachers Thought Should Be:		Percent Mastering Half or Fewer Essential Elements That Teachers Thought Should Be:
Subject Area	Promoted to Grade 2	Placed in Grade 2	Retained in Grade 1
English Language Arts	86%	12%	84%
Mathematics	94%	38%	79%
Science	94%	46%	73%
Social Studies	95%	48%	71%
Fine Arts	95%	59%	62%
Physical Education	96%	68%	52%
Health	96%	60%	60%

Table 6 compares students' overall mastery levels, as gauged by their teachers, across all subject areas in terms of anticipated promotion, placement, and retention status.

Table 6. Perceived Student Overall Mastery of the Essential Elements in Relation to Anticipated Promotion Status

Mastery Ratings Across All Subject Areas	Promoted to Grade 2		Placed in Grade 2		Retained in Grade 1	
	Number	Percent	Number	Percent	Number	Percent
All	1,948	28%	3	Less than 1%	0	0%
Most	4,033	58%	166	23%	37	5%
About 1/2	888	13%	346	49%	248	35%
Few	47	1%	175	25%	350	50%
None	0	0%	19	3%	72	10%
Total	6,916	100%	709	100%	707	100%

Classroom Participation

Based on the number of student surveys returned by each teacher, on average, between 80 percent and 100 percent of their students participated in all class activities during the day. The teachers further indicated that between six percent and 20 percent of the students in a class was routinely off-task, and between 12 percent and 20 percent of the students was routinely disruptive. It is important to note that in some cases, the number of surveys returned did not equal the number of students in the classroom (for instance, when parents may have declined study participation); consequently, the averages may not accurately reflect all student behavior in the classrooms.

Attendance

While attendance remained fairly constant throughout the year, the results indicate higher rates of mobility in the first two months of the school year than in any other period, a finding consistent with other information published by the agency (TEA, 1997a).

Tardiness

Teachers reported that half of the students in the survey (51%) were never tardy (late by 15 minutes) during the school year. For 37 percent of the students, tardiness was said to have occurred one to five times during the year, and seven percent of the students were reported as tardy six to ten times during the year. There were 522 students (6%) reported to be tardy 11 times or more during the year.

Student Behaviors and Academic Performance Ratings

Teachers rated student performance as above, on, or below grade level in the three areas of 1) oral reading proficiency, 2) reading comprehension, and 3) mathematics performance. These ratings were analyzed in relation to the teachers' perceptions of different student behaviors. Overall academic progress for both boys and girls was moderately related to the behavior of *seeking appropriate assistance from adults at school*. For both boys and girls across all ethnic groups, demonstrating *adequate self-help skills in learning* was strongly related to grade-level performance in all three areas of oral reading, reading comprehension, and mathematics, as judged by their teachers.

Table 7 presents the correlations found between mastery of the essential elements, other student performance indicators, and behavioral indicators. Spearman's r was computed to determine the correlation. Moderate correlations are generally considered in the .4 - .6 range, and a strong correlation is generally thought to be a .7 or higher out of 1.0 possible. A correlation of zero (0.0) would indicate no association between any two given variables. Therefore, the reader is cautioned to keep in mind that a "moderate" correlation indicates that while there is some associative relationship, some other factors influence the measures at least as much as the ones explored here.

Table 7. Correlations of Teacher Ratings of Student Mastery of the Essential Elements With Student Performance and Behavioral Information

	Areas of Essential Elements							
Performance / Behavioral Information	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	Total
Beginning Readiness	.63	.56	.49	.49	.40	.36	.41	.56
Progress During Year	.73	.70	.64	.64	.55	.49	.55	.69
Oral Reading Proficiency	.73	.64	.59	.59	.50	.44	.50	.65
Reading Comprehension	.73	.65	.60	.60	.50	.45	.50	.66
Mathematics	.62	.71	.58	.58	.50	.46	.51	.63
Tardy	.18	.18	.17	.17	.16	.15	.16	.18
Discipline	.15	.14	.14	.14	.13	.11	.12	.15
Suspension	.09	.08	.09	.09	.08	.06	.07	.09
Converses Freely	.34	.35	.32	.32	.28	.27	.29	.34
Seeks Assistance	.36	.36	.33	.33	.30	.30	.32	.36
Fears Mistakes	.17	.17	.15	.14	.13	.12	.12	.17
Physical Aggression	.18	.18	.18	.18	.17	.16	.16	.20
Participates in Class	.45	.46	.43	.43	.39	.37	.39	.46
Self-help Skills	.64	.61	.56	.56	.49	.46	.50	.62
Makes Friends	.39	.40	.38	.38	.35	.35	.36	.41

Readiness, Learning, and Overall Progress

The relationships were examined between students' reported mastery of the essential elements in all subject areas, and their teachers' ratings of 1) student readiness for first grade, and 2) overall progress during the school year. For first-grade boys and girls, both readiness and progress were related to mastery of the essential elements in all "core" subject areas (English language arts, mathematics, science, and social studies). In the areas of fine arts, physical education, and health, the moderate to strong relationships between reported mastery of the essential elements, readiness to learn, and overall progress were stronger for boys than for girls.

Research Question (c): What programs, practices, and other features do first-grade teachers report using in their schools and in their classrooms?

Staffing Patterns

About one-fourth of the teachers reported that their students were taught core subjects by a teacher other than themselves. In comparing perceived student mastery of the essential elements by whether they were taught core subjects by their own teacher (as in typical self-contained elementary classes) or by another teacher, no differences were observed between the groups in the areas of language arts and fine arts. Consistently across the five areas of mathematics, science, social studies, physical education, and health, teachers who said they taught the core areas themselves reported higher overall percentages of students as having mastered all or most of the essential elements (range: 79% - 88%) than did teachers who said their students were taught core areas by other teachers (range: 75% - 86%). No differences were shown for the percentages of students expected by their teachers to be promoted to Grade 2 or retained in Grade 1.

About one-fifth of the teachers reported having an instructional assistant in their classroom, the majority of whom were bilingual in English and Spanish. Across all the subject areas, teachers perceived higher percentages of students in classes *without* instructional assistants as having mastered all or most of the essential elements (range: 70% - 88%), compared to students in classes with assistants (range: 63% - 86%). A slightly higher percentage of students was expected to be promoted (67% vs. 64%) in those classrooms without an instructional assistant. Rather than indicating that instructional aides are either ineffective or, worse still, detrimental to student learning, findings such as this one typically indicate *appropriate* targeting of instructional resources in response to students' learning needs. That is, aides typically are assigned to those classes where incoming students have the greatest academic needs, and where the students otherwise would be operating at a great disadvantage. See the NAEYC quality criteria (see page 9 and TEA, 1995d) for information highly supportive of low adult:child ratios in early education.

Most (80%) of the teachers considered their pupil:teacher ratios (PTR) to be adequate. Except for mathematics (in which there were no differences between the groups), teachers who indicated having an adequate pupil:teacher ratio consistently reported higher percentages of students mastering all or most essential elements across the subject areas (range: 69% - 88%) than did teachers who indicated an inadequate pupil:teacher ratio (range: 65% - 85%), though the differences were relatively small.

Administrative Support

Support for teachers. When asked how supportive their school administrators were of first-grade teachers, more than half (55%) of the teachers described the administrators as extremely supportive, and over one third (36%) described them as moderately supportive. A small percentage (8%) described the administrators as slightly supportive, and less than one percent described them as not at all supportive. Consistent trends across subject areas were found in teacher ratings of their students' mastery of all the essential elements, as compared to teachers' perceived level of support by their school administrators. That is, teachers who reported their school administrators were slightly to moderately supportive of first-grade teachers also consistently reported the highest percentages of students mastering all or most essential elements (range: 69% - 88%), while teachers who indicated they had *no* support reported the lowest percentages (range: 52% - 70%). Similarly, teachers who reported *moderate* support from administrators also reported the highest percentage of students expected to be promoted (78%). Those teachers who reported having no administrative support reported the highest expected placement (26%) and retention rates (20%).

When asked about the amount of influence teachers had in site-based decision making (SBDM) on their campuses, very few teachers (3%) reported having no influence, about one fourth (24%) reported limited influence, about one half (49%) reported moderate influence, and about one fourth (24%) reported extensive influence. With the exception of language arts, teachers who reported having *moderate* influence in decision making reported the highest percentages of students who had mastered all or most of the essential elements in

the various subject areas (range: 80% - 88%); teachers who reported having either *no* influence or *extensive* influence reported the lowest percentages of students mastering all or most of the curriculum (range: 75% - 86%). Teachers reporting no influence in SBDM also expected the lowest percentage of students to be promoted (73%) and the highest percentages of students to be placed (10%) or retained (10%). Teachers who reported either *limited* or *moderate* influence expected the highest percentages of students to be promoted (both 77%).

It is important to note that these are rough descriptions based on teacher judgments. No corroboration of the teachers' definitions or perceptions of terms like "administrative support" was obtained. Therefore, the findings just described should not be used as the basis for policy decisions or for altering current school level practices.

Support for first graders and their families. When teachers described how supportive their campus administrators were of first-grade students and their parents, 54 percent described them as extremely supportive; 39 percent described them as moderately supportive; seven percent described them as slightly supportive; and less than one percent described them as not at all supportive. The highest percentages of students perceived to be mastering all or most of the essential elements were in classrooms where teachers viewed their administrators as being *moderately* to *extremely* supportive of first-grade students and their families (range: 69% - 88%); the lowest percentages (63% - 82%) were observed among teachers reporting *slight* support. Teachers who described the degree of administrative support on their campuses for Grade 1 students and their families as *moderate* reported the highest percentage of students expected to be promoted (78%), while those who described this support as *slight* reported the highest expected placement (9%) and retention (9%) rates for their students.

Support services. Fifty-one percent of the teachers considered their school's counseling and guidance program adequate for their students. Teacher ratings of student mastery of the essential elements were examined in light of perceived adequacy of the school's counseling and guidance program. Teachers who considered their school's counseling and guidance program to be adequate to meet the children's needs identified slightly more students for promotion (78% vs. 76%), fewer students for placement (7% vs. 8%), but similar proportions of students for retention (8% vs. 8%) compared to teachers who considered it to be inadequate.

Planning Periods

Teachers were asked about the length of their planning periods each day, and most (71%) reported having a planning period of up to 45 minutes in duration. Fourteen percent of the teachers reported having 46 - 50 minutes for planning, and another 13 percent said they had between 51 and 60 minutes for daily planning. The remaining two percent of the teachers reportedly had a daily planning period lasting 61 or more minutes. A planning period of at least 45 minutes is required by law, so the survey did not specifically inquire about smaller time intervals for planning. Nearly all (92%) of the teachers reported sharing their planning periods with other first-grade teachers.

In comparing the length of teachers' reported planning periods to their perception of student mastery of the essential elements across the subject areas, the highest percentages of students having mastered all or most essential elements (range: 79% - 95%) were reported by teachers with 46 - 50 and 51 - 55 minute planning periods; the lowest percentages were reported by teachers with shorter or longer planning periods, of up to 45 minutes, or of 61 or more minutes (range: 65% - 86%). Furthermore, the teachers who reported having either the shortest or longest planning periods also identified the greatest percentages of students having mastered half or fewer essential elements (range: 14% - 34%), relative to teachers whose planning periods were said to be from 46 to 55 minutes in length (from 5% - 21% of their students were said to have mastered half or fewer of the essential elements). In comparing mastery levels by whether or not teachers shared planning periods, teachers who reported a shared planning period also reported higher percentages of students having mastered all or most of the essential elements (range: 69% - 88%) than those who said they did not have a shared planning period (range: 60% - 85%).

Similar to perceived student mastery, teachers whose planning periods were reportedly 46 - 50 minutes in length expected the highest promotion rate for their students (82%); those who reported a planning period of at least 61 minutes' duration expected the highest placement (9%) and retention (10%) rates for their students. Further, teachers who said they shared their planning periods with other first-grade teachers expected higher promotion rates (77% vs. 73%), higher placement rates (8% vs. 6%), and lower retention rates (8% vs. 9%) for the students in their classrooms than teachers who said they didn't have shared planning periods.

Again, caution is advised. It would not be appropriate to use the associations observed here, based on teacher judgments, as justification for altering current practice and/or policy. Instead, closer study — particularly at the local level — is advised.

Staff Development

Teachers were asked questions about both technology-related and non-technology-related staff development offered to them during the school year. Questions about both categories elicited positive responses from the majority of teachers, with the non-technology-related topics clearly and consistently eliciting favorable responses from more of the teachers. The teachers' responses are summarized in Table 8.

Table 8. Teachers' Responses to Questions About Technology-Related and Non-Technology-Related Staff Development*

Was Staff Development.....	Technology-Related	Non-Technology-Related
Timely?	63%	74%
Relevant?	69%	81%
Adequate in amount?	61%	73%
Supported during application?	65%	69%
Inclusive of all who needed it?	67%	77%

*Percentages are for teachers' "yes" answers only

Across the five questions (timely, relevant, etc.) about staff development, teachers who generally were satisfied with the staff development they had received also were slightly more likely to indicate that students had learned the grade-level curriculum. This was true for both technology-related and other staff development. Similar trends existed in the relationships between expressed satisfaction with staff development and the percentages of students whom teachers expected to be promoted, placed, or retained, with most differences again being very small. The largest difference was noted between anticipated promotion rates for teachers who considered their non-technology-related staff development to be timely versus those who said it wasn't (78% vs. 73%, respectively).

Student Referrals for Special Education Assessment

Teachers reported that few students (8%) were referred for special education assessment during the 1995-96 school year. The highest reported number of students referred for assessment from any one of the surveyed teachers' classrooms was eight. In most cases, if any referrals from a classroom were made, only 1-2 students were involved. As one would expect, perceived mastery of essential elements was lowest across subject areas (22% - 63%) among students referred for special education assessment, relative to students not referred (73% - 90%) or for whom the teachers were unsure about referral (24% - 56%). The converse also was true: that is, the greatest percentages of students perceived to have mastered half or fewer of the essential elements in each subject area (37% - 78%) were among those referred for special education assessment.

There also were striking differences in anticipated promotion, placement, and retention rates based on whether or not teachers said students had been referred for assessment. As a group, students reportedly referred for assessment had a much lower expected promotion rate (28% vs. 82%), a much higher expected placement rate (30% vs. 6%), and a much higher expected retention rate (24% vs. 6%) than students whom teachers had not referred for assessment.

Eliciting Parental Involvement

The teachers were asked how often they initiated contact with the parents of their students. Almost half of the teachers (46%) reported weekly contact with parents; a fourth of the teachers (25%) reported parent contact two to four times a week; and smaller percentages of teachers reported either extreme of daily or monthly contact (14% and 13%, respectively). A very small percentage of teachers (2%) reported contacting parents less often than monthly. While teachers reported having completed parent:teacher conferences with the parents or guardians of nearly all of their students (91%), teachers rarely reported visiting students' homes (3%).

Parental contact and perceived mastery, promotion, placement, and retention. Regarding content learning, the lowest percentages of students mastering all or most essential elements were reported by teachers who said they initiated *monthly* parent contacts (range: 63% - 84%). The highest percentages were reported by teachers who said they initiated parent contacts weekly or two to four times per week (ranges in all subject areas except health: 70% - 88%). In health, the highest percentages of students learning the curriculum were reported by teachers who made *less than monthly* contacts (86%).

Parent contact was examined in relation to the expected promotion, placement, and retention rates of participating students. The highest promotion rate (79%) and the lowest placement rate (6%) were expected by teachers who said they contacted parents less often than monthly. In contrast, the lowest promotion rate (76%) and the highest retention rate (10%) were expected by teachers reporting monthly parent contacts. Reasons for these patterns are unknown.

While the above findings are inconsistent at best, one should keep in mind that teacher contact with parents of first-grade children may take various forms, depending upon its purposes. For example, sending frequent notes home to communicate with parents about day-to-day classroom activities, homework assignments (e.g., reading to the child), and weekly student progress are quite different from contacting a parent because of problems the child may be having. Again, until more situation-specific information is available as an interpretive context, one has no basis for applying these findings to local decisions about instructional policies.

Parent:teacher conferences and perceived mastery, promotion, placement, and retention. Teacher reports of completed parent:teacher conferences were associated with higher percentages of students expected to be promoted (77% vs. 73% where parent:teacher conferences were not reported). Better student learning was reported when teachers indicated having had a conference with the students' parents or guardians than when they did not have a parent:teacher conference. Overall, teachers said 3% to 5% more students mastered most or all essential elements when conferences were completed.

Home visits and perceived mastery, promotion, placement, and retention. Anticipated promotion and placement rates were lower for students whose teachers reported conducting a home visit during the school year (72% vs. 77% to be promoted; 5% vs. 8% to be placed). Teachers believed that higher percentages of these students should be retained (13% vs. 8%), and also reported substantially poorer learning in "core" subjects by these students (from 5% to 13% fewer were said to have mastered most or all essential elements). The perceived lower mastery levels of students whose teachers made home visits likely reflects teachers' responsiveness to students experiencing problems in school.

Instructional Methodologies and Practices

The instructional methods considered in this section include:

- student use of learning centers,
- teacher practices in grouping students for instruction,
- use of enrichment practices,
- use of different teaching strategies to match student learning styles, and
- frequency of students being pulled out of the classroom for special program instruction.

For 42 percent of the teachers surveyed, learning centers were reportedly used on a daily basis in their classrooms. For 26 percent of the teachers, learning centers were used from two to four times a week; for 18 percent, they were used weekly. A few teachers (5%) indicated that they used learning centers monthly, and a few (9%) indicated even less frequent than monthly use of learning centers in their classrooms.

Concerning the grouping of students for classroom instruction, the majority of teachers (from 63% - 67%) indicated that they grouped students by similar/diverse abilities or for cooperative learning from one to four times a week. Over half of the teachers (56%) reported grouping students so that some could leave the classroom for special programs participation (such as special education or Title I programs) from one to four times a week. See Table 9 for more details.

Table 9. Teachers' Use of Instructional Methodology by Reported Frequency of Use

Instructional Practices	Daily	2-4 Times Per Week	Weekly	Monthly or Less	Never
Learning Centers	42%	26%	18%	5%	9%
Grouping Practices					
By similar skills/abilities	38%	29%	12%	7%	15%
By diverse skills/abilities	33%	30%	21%	7%	9%
For cooperative learning	30%	36%	22%	10%	2%
For in-class team teaching	13%	7%	5%	6%	69%
For special programs	44%	12%	6%	3%	35%
Enrichment Activities	33%	42%	21%	3%	1%
Matching Student Learning Styles	54%	28%	12%	5%	1%

Nearly all first-grade teachers (96%) reported that they used enrichment activities in their classrooms regularly. One third of the teachers (33%) indicated that they used enrichment activities on a daily basis; 42 percent reported using them two to four times a week; and another 21 percent reported using enrichment activities weekly.

Nearly all teachers (94%) indicated that they used different modalities — sight, touch, and so on — to match the different learning styles of their students on a regular basis; 54% daily, 28% two to four times a week, and 12% weekly.

Most teachers (85%) reported that students were "pulled out" of their classrooms for special program instruction one or more times daily (once for 32%, twice for 26%, three times for 12%, four times for 8%, and five or more times for 6% of the teachers).

Teachers also were asked about their use of multiple strategies to teach reading to their first-graders. Nearly all of the teachers (93%) reported using whole-class instruction on a daily basis; the vast majority of teachers (84%) indicated reading aloud to their students daily (while another 15% did so two to four times a week); most teachers (79%) reported providing phonemic awareness instruction daily (while another 17% did so two to four times a week), most teachers (79%) indicated using a wide assortment of children's books on a daily basis (while another 15% did so two to four times a week); and most teachers (72%) reported providing time for their children to read without interruption on a daily basis (while another 19% reported doing this two to four times a week).

Figure 6 summarizes results about teachers' use of the first four instructional methodologies listed in relation to student learning.

Figure 6. Teachers' Reported Use of Instructional Practices Associated With Best Learning Outcomes

Teachers Saying They Used These Practices in Their Rooms...	This Often...	Reported *Best* Student Mastery of Essential Elements in These Areas:						
		Eng. Lang. Arts	Math	Science	Social Studies	Fine Arts	P. E.	Health
COMMON PRACTICES:								
Enrichment activities	Daily	✓	✓	✓	✓	✓	✓	✓
Matching teaching style to students' learning styles	Anywhere from daily to 2 times per week		✓	✓	✓	✓	✓	✓
Learning centers	2-4 times per week			✓	✓	✓	✓	✓
Grouping students for cooperative learning	Weekly			✓	✓	✓	✓	✓
LESS COMMON PRACTICES:								
Grouping students for special programs instruction	Monthly or less	✓	✓	✓	✓	✓	✓	✓
Grouping students for in-class team teaching	Monthly or less	✓	✓	✓	✓	✓	✓	✓
Grouping students by similar skills/abilities	Monthly or less	✓	✓	✓	✓	✓	✓	✓
Grouping students by diverse skills/abilities	Never	✓	✓		✓			

NOTE: A blank cell means that using this particular strategy, this often, was ***not*** distinctly associated with best student learning as judged by participating teachers.

Instructional Practices and the Essential Elements

Higher perceived mastery levels generally were associated with more frequent use of learning centers, enrichment activities, and matching teaching style to students' learning styles. Conversely, lower perceived levels of mastery were associated with more frequent use of grouping strategies and with higher numbers of students who were pulled out of class to attend special program instruction (such as Title I or special education).

Instructional Practices and Impending Promotion Decisions

For each of the instructional practices listed above, Table 10 presents (by frequency of use) the percentages of students expected to be promoted to Grade 2, placed in Grade 2, or retained in Grade 1.

Table 10. Percentages of Students that Teachers Said Should be Promoted, Placed, or Retained, by Use of Instructional Practices*

Reported Use of Instructional Practices	Anticipated Student Status At the End of Grade 1		
	Promote	Place	Retain
Learning centers are used:			
Daily	76%	8%	7%
2-4 times per week	78%	8%	8%
Weekly	77%	8%	9%
Monthly	73%	10%	7%
Less often than monthly	78%	6%	9%
Grouping by similar skills/abilities is used:			
Daily	74%	9%	9%
2-4 times per week	78%	8%	7%
Weekly	77%	7%	8%
Monthly or less	81%	7%	5%
Never	80%	6%	7%
Grouping by diverse skills/abilities is used:			
Daily	76%	8%	8%
2-4 times per week	77%	8%	8%
Weekly	76%	8%	8%
Monthly or less	75%	7%	6%
Never	82%	7%	7%
Grouping for cooperative learning is used:			
Daily	76%	8%	8%
2-4 times per week	76%	8%	8%
Weekly	78%	8%	8%
Monthly or less	76%	9%	7%
Never	86%	5%	--
Grouping for in-class team teaching is used:			
Daily	72%	10%	9%
2-4 times per week	70%	7%	11%
Weekly	75%	7%	11%
Monthly or less	78%	8%	6%
Never	78%	8%	7%
Grouping for special programs is used:			
Daily	75%	9%	8%
2-4 times per week	75%	6%	8%
Weekly	78%	6%	9%
Monthly or less	79%	10%	--
Never	79%	7%	7%
Number of pullouts that occur daily:			
Never	80%	6%	8%
Once	77%	7%	8%
Twice	77%	7%	8%
Three times	72%	10%	8%
Four times	77%	10%	6%
Five or more times	72%	12%	9%
Enrichment activities are used:			
Daily	78%	7%	8%
2-4 times per week	76%	8%	7%
Weekly	76%	8%	9%
Monthly or less	71%	10%	8%
Never	74%	--	12%
Matching learning styles is used:			
Daily	77%	8%	8%
2-4 times per week	75%	9%	8%
Weekly	79%	7%	9%
Monthly or less	75%	7%	10%
Never	76%	--	10%

* Not all end-of-year status response categories are included; therefore, percentages will not total 100% (see page 34).

Teachers' Materials

The teachers were asked several questions about instructional materials. The questions regarded:

- the use of manipulatives or hands-on materials during instruction in the various subject areas;
- the adequacy of instructional materials teachers used in terms of addressing the essential elements;
- the quantity of their instructional materials;
- the cultural appropriateness of their instructional materials;
- the developmental appropriateness of their instructional materials; and
- the types of materials they still needed to work effectively with the students in their classes.

Use of Manipulatives

Manipulatives or hands-on materials are those learning tools that children can physically handle to aid in the learning process, such as using marbles to teach counting. The majority of teachers (63%) indicated that they used manipulatives for *all* subject areas. Nearly all teachers (98%) said they used manipulatives for mathematics and most (80%) used them for science. Less than half of the teachers surveyed indicated using manipulatives for language arts and social studies. Teachers who responded that they did *not* use mathematics manipulatives reported higher percentages of students mastering all or most essential elements than teachers who said they did use them (as many as 11% - 14% more students learning the content). This same pattern held for social studies manipulatives.

The relationships between *non*-use of manipulatives and higher mastery of essential elements in mathematics and social studies may again reflect teachers' attempts to meet students' learning needs. Research such as that done by Bredekamp (1987) and Howe (1993) validates the importance of manipulatives for facilitating learning in the primary grades because young children need to be engaged in *active* rather than passive activities. Those who are relatively more advanced may not be quite as dependent upon concrete objects for learning concepts in the primary grades.

Adequacy in Addressing the Essential Elements

Most teachers expressed a positive view of how well their instructional materials addressed the essential elements; 50 percent described them as providing very good coverage, and 30 percent described them as providing excellent coverage. Eighteen percent described their instructional materials as providing reasonable coverage of the essential elements, and a few (2%) described the coverage as marginal. In comparing student learning with teachers' judgments about the adequacy of classroom materials in covering essential elements, a definite pattern emerged. Teachers who felt their materials provided very good or excellent coverage reported the best learning; teachers who indicated their materials provided reasonable or marginal coverage reported the poorest mastery (from 5% to 18% fewer students mastering most or all essential elements).

Quantity, Cultural and Developmental Appropriateness, and Needs for Additional Materials

Three-fourths of the teachers (76%) indicated that they had sufficient quantities of instructional materials for their students, and nearly all of them considered the materials they had to be both culturally appropriate (91%) and developmentally appropriate (92%) for the students.

Large percentages of survey respondents indicated needing additional materials for instruction. Specifically, over half of them (57%) needed more multi-media materials; about half (52%) indicated a need for more materials for students working above grade level; almost half (46%) needed more materials for students working below grade level; almost half (46%) needed more multicultural materials; over a third (38%) indicated needing more up-to-date instructional materials; and one third indicated a need for materials in

languages other than English (25% said they needed Spanish materials, and 8% said they needed materials in other languages).

Relationships Between Materials and Perceived Mastery of the Curriculum

Student learning was examined in relation to whether teachers said they had enough instructional materials. With the exceptions of (a) above-grade level materials; (b) up-to-date materials for fine arts, physical education, and health; and (c) multimedia materials for language arts, teachers who said they had sufficient materials also reported better learning (from 2% to 15% more students mastering most or all essential elements). Teachers who indicated needing above-grade level materials also reported higher percentages of students mastering all or most essential elements, which is reasonable given that the essential elements are anchored to grade level.

Across subject areas (except fine arts), teachers who reported having culturally appropriate instructional materials also reported better student learning than teachers who said they did not have these materials (from 4% to 9% more students mastering all or most essential elements). Teachers who said they had developmentally appropriate materials similarly reported five percent more students mastering all or most of the language arts essential elements than those who said they did not. Table 11 presents further information about the quantity of instructional materials and teacher perception of student mastery of essential elements.

Table 11. Quantity of Instructional Materials and Teacher Perception of Student Mastery of Essential Elements

	Percentage of Students Mastering All or Most in Classes That:		
Types of Instructional Materials	**Needed More Materials**	**Did Not Need More Materials**	**Statistically Significant?**
Spanish language	59%-86%	71%-88%	All
Other language	55%-80%	70%-85%	Language arts, science, social studies, health
More up-to-date (for language arts) *	86%-89% 66%	83%-86% 70%	Language and fine arts, PE, health
Multicultural	66%-87%	70%-87%	Only lang. Arts
Multimedia	67%-85%	70%-87%	Only language and fine arts
Above grade level	71%-89%	66%-86%	All
Below grade level	66%-86%	71%-89%	All

* The percentage of students mastering all or most essential elements is presented separately for language arts because its data were different from the other subject areas.

Relationships Between Materials and Recommended Promotion Status

Figures 7 and 8 show relationships between instructional materials (quality, type, and how adequately they cover the essential elements) and expected student promotion. Generally there were no differences in teacher judgments concerning promotion, placement, or retention by whether teachers reported using manipulatives, except for use of social studies manipulatives. In this case, teachers who said they did *not* use manipulatives had higher expected promotion rates (78% vs. 75%), higher expected placement rates (8% vs. 7%), and lower expected retention rates (7% vs. 10%).

Teachers who reported that their instructional materials provided *excellent* coverage of the essential elements had the highest expected promotion rate (79%) and lowest expected retention rate (6%). Those who described their materials as providing *reasonable* coverage reported the highest expected retention rate (10%). Last, those teachers who felt their materials provided *marginal* coverage reported the lowest expected promotion rate (73%).

Teachers who considered their instructional materials to be culturally appropriate reported a higher expected promotion rate (77% vs. 70%) and a lower expected retention rate (8% vs. 10%) than teachers who felt their materials were not culturally appropriate. Teachers who considered their instructional materials to be developmentally appropriate reported a higher expected promotion rate (77% vs. 73%) and a lower expected retention rate (8% vs. 9%) than those who considered their materials to not be developmentally appropriate.

Figure 7. Adequacy of Instructional Materials' Coverage of Essential Elements, as Related to Expected Student Promotion Status

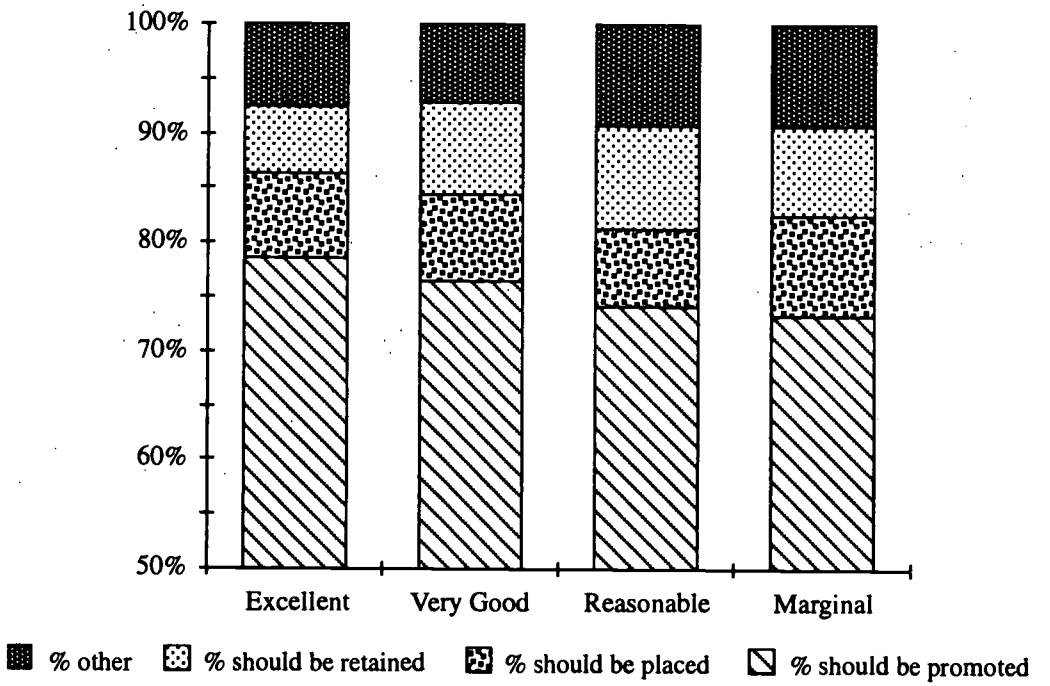
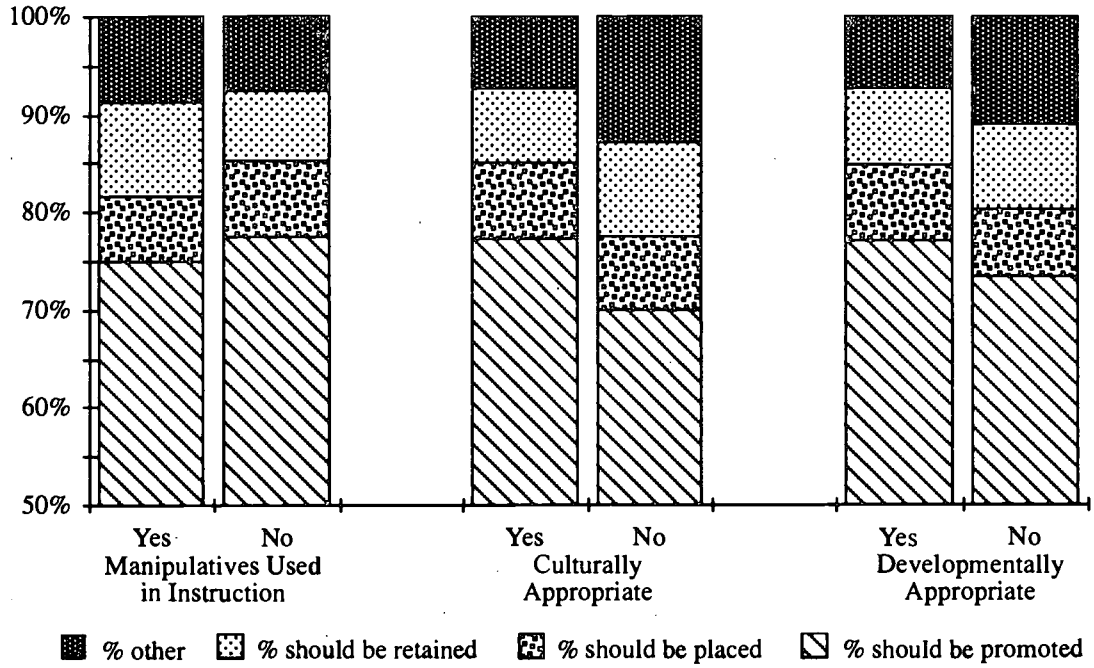


Figure 8. Quality/Type of Instructional Materials, as Related to Expected Student Promotion Status



In general, those teachers who indicated a need for additional materials to work more effectively with their students reported lower expected promotion rates and higher expected retention rates than teachers who did not indicate a need for additional materials. This was not true, however, when the teachers indicated needing more above-grade level materials, such that the expected promotion rate was 79 percent, compared to 75 percent for those not requesting such materials.

Teacher/Student Computer Use

Teachers were asked about their own and their students' access to, and use of, computers at school. Over half of the teachers (59%) reported that their schools did *not* provide them with a computer. Table 12 shows how teachers reported using computers (their own or the school's) both for delivering instruction, and for non-instructional professional work such as recording grades and attendance.

Table 12. Teachers' Frequency of Computer Use

Reported Computer Use	Daily	2-4 Times Per Week	Weekly	Monthly or Less	Not Applicable
Non-instructional professional work	13%	17%	21%	29%	20%
Instructional delivery	15%	14%	22%	20%	29%

Half of the teachers reported that their students used computers from one to four times a week (27% said weekly; 23% said two to four times a week). A fifth of the teachers (21%) reported daily student computer use, and a fifth (21%) reported monthly or less frequent student computer use. A few of the teachers (8%) reported that their schools did not have computers available for student use.

Figure 9 shows the percentages of teachers who indicated that their students used computers for various purposes. Drill and practice, solving mathematics problems, and free time activities were the most frequently reported ways (in order) that students used the computers.

Figure 9. Students' Reported Use of Computers and Their Mastery of Grade 1 Essential Elements

Types of Computer Usage	Did Students Use Computers This Way?	At Least 70% of Students Mastered Most or All Essential Elements in:						
		Eng. Lang. Arts	Math.	Sci.	Social Studies	Fine Arts	P. E.	Health
To drill and practice new concepts	Yes (84%)	👍	👍	👍	👍	👍	👍	👍
	No							
To solve mathematics problems	Yes (81%)		👍	👍	👍	👍	👍	👍
	No							
For free time activities and games	Yes (78%)							
	No	👍	👍	👍	👍	👍	👍	👍
For accelerated reading	Yes (50%)					👍	👍	👍
	No	👍	👍	👍	👍			
To write paragraphs and stories	Yes (47%)					👍	👍	👍
	No	👍	👍	👍	👍	👍	👍	👍
To search for information	Yes (18%)	👍	👍			👍		👍
	No	👍	👍	👍	👍		👍	
To solve science problems	Yes (11%)	👍	👍					
	No	👍		👍	👍	👍	👍	👍

NOTE: A blank cell means that 70% of the students did *not* master most or all essential elements in the pertinent subject area under the specified computer use conditions.

most essential elements of the curriculum. Concerning teacher computer use, the highest expected promotion rates (79% and 78%, respectively) were reported by teachers who used computers on a daily basis for either instructional or non-instructional purposes. Conversely, the lowest promotion rate (75%), and the highest retention rates (9% or 11%, respectively), were anticipated by teachers who said they did not use computers either non-instructionally or for instruction. Teachers whose students were described as using computers daily reported the highest expected promotion rate (80%), while teachers whose students were said to have used computers monthly or less often reported the lowest expected promotion rate (71%) and the highest retention rate (10%).

Reading Instruction Methods and Materials

Teachers were asked how many minutes each of their students read orally each day. A small percentage (6%) indicated that their students read orally for five minutes or less per day. Almost half of the teachers reported that their students read orally somewhere between 6 and 15 minutes a day (23% said 6 - 10 minutes; 22% said 11 - 15 minutes). About a fourth of the teachers (26%) indicated that their students read orally for 16 - 25 minutes a day, and another fourth of them (23%) said that their students read orally for 26 minutes or more each day. Across all subject areas, teachers who reported that their students read orally for 26 or more minutes per day indicated the lowest percentages of students mastering all or most essential elements.

Teachers were asked how often they typically used each of a variety of different methods or tools to teach reading to their classes. Their responses are reflected in Table 13, in descending frequency of daily use.

Table 13. Reading Methods/Tools by Frequency of Use

Use of Reading Methods/Tools	Daily	2-4 Times Per Week	Weekly	Monthly or Less	Never
Whole-class instruction	93%	5%	2%	Less than 1%	0%
Read aloud to children	84%	15%	1%	0%	0%
Phonemic awareness instruction	79%	17%	4%	0%	Less than 1%
Assorted children's books	79%	15%	6%	Less than 1%	Less than 1%
Uninterrupted reading time for children	72%	19%	9%	1%	0%
State-adopted basal reading series	54%	23%	9%	8%	6%
One-to-one instruction	53%	35%	10%	2%	Less than 1%
Picture books	50%	18%	15%	16%	2%
Students read stories more than once	34%	49%	14%	2%	1%
Writing in response to stories read	27%	45%	24%	3%	1%
State-adopted supplemental reading series	21%	25%	23%	23%	8%

Frequency of use of supplementary readers, picture books, having students read stories more than once, and reading aloud to the children were all negatively correlated with the percentages of students whom teachers said had mastered most or all essential elements. In other words, as these methods or materials were used more often, teachers reported poorer learning (see Figure 10). Here too, the reader is cautioned about the difference between *associations* and *causality*: reliance upon such instructional tools and techniques most likely reflects teachers' responses to learner needs, rather than reflecting poorly on the methods, *per se*. Table 14 contains more complete details.

Figure 10. Teachers' Reported Use of Reading Methods/Tools Associated With Best Learning Outcomes

Teachers Saying They Used These Reading Tools/Methods in Their Rooms...	This Often...	Reported *Best* Student Mastery of Essential Elements in These Areas:						
		Eng. Lang. Arts	Math.	Science	Social Studies	Fine Arts	P. E.	Health
COMMON PRACTICES:								
Whole-class instruction	Daily							
Phonemic awareness instruction	Daily	✓		✓	✓	✓	✓	✓
Read aloud to children	Weekly		✓	✓	✓	✓	✓	✓
Assorted children's books	Daily					✓		
Uninterrupted reading time for children	Weekly							✓
State-adopted basal reading series	2-4 times per week			✓	✓	✓	✓	✓
One-to-one instruction	2-4 times per week	✓	✓	✓	✓	✓	✓	✓
State-adopted supplemental reading series	2-4 times per week			✓	✓	✓	✓	✓
Writing in response to stories read	1-4 times per week			✓	✓		✓	
LESS COMMON PRACTICES:								
Picture books	Never	✓	✓	✓	✓	✓	✓	
Students read stories more than once	Monthly	✓	✓	✓	✓	✓	✓	✓

NOTE: A blank cell means that using this particular reading method/tool, this often, was ***not*** distinctly associated with best student learning as judged by participating teachers.

Table 14. Percentages of Students Reported as Mastering All or Most Essential Elements by the Frequency With Which Teachers Reported Using Various Reading Methods/Tools

	Reported Level of Use Across Seven Subject Areas Associated With:				
Reading Methods/Tools	**Highest Percent Mastery**	**Range**	**Lowest Percent Mastery**	**Range**	**Statistically Significant?**
State-adopted basal reading series (language arts and mathematics)	2-4 times per week Monthly	83%-89% 71%-81%	Never	67%-85%	All but lang. arts, math
State-adopted supplemental reading series (language arts)	2-4 times per week Monthly	82%-90% 70%	Daily 2-4 times per week	75%-85% 67%	All but lang. arts, math
Phonemic awareness instruction	Daily	69%-88%	Weekly (5), 2-4 times per week (2)	65%-85%	All but mathematics
Writing in response to stories read	Monthly (2), Weekly (3), 2-4 times per week (2)	72%-89%	Never	64%-80%	All but fine arts, health
Picture books	Never (6), Monthly (1)	80%-92%	2-4 times per week (5), Never (1), Daily (1)	67%-84%	All but health
Assorted children's books	Daily (4), Weekly (2), Monthly (1)	71%-88%	Never	61%-76%	Only fine arts
One-to-one instruction	2-4 times per week	69%-89%	Monthly	61%-79%	All
Whole-class instruction	Daily (5), 2-4 times per week (2)	71%-88%	Weekly	65%-85%	None
Students read stories more than once	Monthly	77%-92%	Daily (4), Never (3)	67%-83%	All
Read aloud to children	Weekly (6), 2-4 times per week (1)	74%-94%	Daily (6), Weekly (1)	68%-87%	All but lang. arts
Uninterrupted reading time for children	Weekly (3), 2-4 times per week (3), Daily (1)	69%-88%	Weekly (3), 2-4 times per week (2), Daily (2)	68%-87%	Only health

Note: Where more than one level of use is reported for the highest or lowest percent mastery, each level of use will be reported with the number of subject areas for which this was the case (in parentheses) after the level of use. When the percentage in any category was based on responses of fewer than 20 teachers it was excluded.

Reading Instruction and Promotion Status

The highest expected promotion rate (79%) was reported by teachers whose students were said to have read orally for up to 10 minutes daily. These teachers also had the lowest expected retention rate (7%), although that rate was matched by teachers who said their students read orally for 21 - 25 minutes each day. The lowest expected promotion rate (75%) and the highest expected retention rate (9%) were reported by teachers whose students read orally for 26 minutes or more daily. Table 15 shows the percentages of students expected by their teachers to be promoted to Grade 2, placed in Grade 2, and retained in Grade 1, according to how often the teachers reportedly used each of a variety of different methods or tools to teach reading to their class.

Table 15. Percentages of Students Recommended for Promotion, Placement, or Retention by the Frequency With Which Teachers Reported Using Various Reading Methods/Tools

Reported Use of Reading Methods/Tools	Anticipated Student Status at the End of Grade 1*		
	Promote	Place	Retain
State-adopted basal reading series is used:			
Daily	76%	9%	9%
2-4 times per week	78%	8%	6%
Weekly	74%	8%	8%
Monthly or less	80%	4%	4%
Never	70%	7%	7%
State-adopted supplemental reading series is used:			
Daily	76%	9%	9%
2-4 times per week	75%	9%	8%
Weekly	80%	7%	7%
Monthly or less	78%	7%	7%
Never	73%	7%	7%
Phonemic awareness instruction is used:			
Daily	77%	8%	8%
2-4 times per week	76%	8%	6%
Weekly	78%	10%	9%
Monthly or less	--	--	--
Never	76%	5%	5%
Writing in response to stories read is used:			
Daily	76%	9%	8%
2-4 times per week	78%	8%	7%
Weekly	76%	8%	9%
Monthly	77%	5%	7%
Never	71%	4%	13%
Picture books are used:			
Daily	77%	8%	7%
2-4 times per week	74%	9%	9%
Weekly	75%	8%	10%
Monthly or less	79%	7%	6%
Never	85%	4%	6%
Assorted children's books are used:			
Daily	76%	8%	8%
2-4 times per week	78%	6%	9%
Weekly	77%	7%	9%
Monthly or less	64%	3%	8%
Never	74%	5%	16%
One-to-one instruction is used:			
Daily	76%	8%	7%
2-4 times per week	78%	7%	8%
Weekly	78%	9%	9%
Monthly or less	75%	8%	10%
Never	78%	7%	2%
Whole-class instruction is used: (The differences across frequencies of use			
Daily were not statistically significant.)	76%	8%	8%
2-4 times per week	81%	8%	5%
Weekly	76%	--	--
Monthly or less	--	--	--
Never	--	--	--
Students reading stories more than once is used:			
Daily	75%	9%	8%
2-4 times per week	77%	7%	7%
Weekly	76%	8%	8%
Monthly or less	84%	5%	6%
Never	82%	5%	11%
Reading aloud to children is used:			
Daily	76%	8%	8%
2-4 times per week	79%	7%	8%
Weekly	78%	9%	12%
Monthly or less	--	--	--
Never	--	--	--
Uninterrupted reading time for children is used:			
Daily	77%	8%	8%
2-4 times per week	77%	8%	9%
Weekly	75%	7%	8%
Monthly or less	--	--	--
Never	--	--	--

* Not all categories are included, therefore the percentages will not total to 100%.

Additional diagnostic information about their students' reading skills will be available to all first-grade teachers in the 1998-99 school year when legislative changes go into effect (TEC §28.006). This new legislation will require districts to administer a reading diagnostic instrument, to be chosen from either the commissioner-adopted list or a district-adopted list, to all students in Kindergarten and Grades 1 and 2. TEA recently developed the Texas Primary Reading Inventory, which is available now for district use. The purpose of this inventory is to provide teachers of students in primary grades with an informal means of determining where along the continuum of growth their students are progressing as readers.

Research Question (d): How is student progress in Grade 1 related to each of the previous three areas (student characteristics; teacher perceptions of readiness, behavior, and academic growth; and reported programs and practices)?

Simple Relationships of Contextual Features to Teachers' Ratings of Student Mastery of Curriculum and Overall Progress in School

The context and process analyses discussed in this section are those which compare the mean teacher ratings of students' mastery of the essential elements (separately and overall) and teacher judgments of overall student progress by the key variables of district urbanicity (district type), campus AEIS ratings, teachers' use of one-to-one instruction, the number of times students were referred for disciplinary action, and differences in school calendars. The essential elements subject areas and overall mastery level and teacher judgment of overall progress in school were used as dependent variables. Teachers rated mastery of the essential elements in each of the seven subject areas on a five-point scale. Overall mastery was obtained by summing ratings for each student across all subject areas (maximum possible value = 35).

District Urbanicity

When ratings of mastery were examined by district type, there was a clear pattern in the results. Students in *non-metropolitan, fast growing* districts consistently were reported by teachers as having the *highest* perceived mastery of essential elements across all subjects and highest overall progress in school. Typically after that, student learning and progress progressively declined in the following district types: *non-metropolitan, stable*; *independent town*; *major suburban*; *other central city suburban*; *rural*; and *other central city* districts. On average, students in *major urban* districts consistently obtained the *lowest* mastery and overall progress ratings from their first-grade teachers. These results are presented in Table 16. It should be noted that *major urban* districts also typically serve high concentrations of students who often have not fared well in public education, such as those who are economically disadvantaged.

Table 16. Mean Teacher Ratings of Grade 1 Student Mastery of the Essential Elements and Overall Student Progress by Subject Area and District Type

District Type:	OVERALL MASTERY	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	OVERALL PROGRESS
Non-Metropolitan: Fast Growing	30.00	3.97	4.02	4.30	4.32	4.38	4.43	4.40	2.93
Non-Metropolitan: Stable	29.42	3.94	4.08	4.18	4.19	4.30	4.40	4.32	2.68
Independent Town	29.27	3.90	4.09	4.18	4.21	4.25	4.38	4.28	2.72
Major Suburban	29.13	3.89	4.03	4.18	4.18	4.25	4.29	4.29	2.63
Other Central City Suburban	29.13	3.90	4.08	4.14	4.15	4.20	4.26	4.21	2.70
Rural	29.10	3.94	4.06	4.15	4.17	4.21	4.31	4.24	2.70
Other Central City	28.65	3.87	4.02	4.10	4.11	4.15	4.22	4.15	2.68
Major Urban	26.18	3.38	3.74	3.66	3.69	3.88	3.97	3.90	2.56

1995 (Prior Year) Campus Accountability Rating

A very distinct but not surprising pattern appeared when teachers' mean ratings of student mastery of essential elements were examined. The higher the campus accountability rating, the higher were students' judged mastery levels. Students at campuses rated as *Exemplary* were judged by teachers as highest in mastery, followed by students at *Recognized* campuses, and then by students at *Acceptable* campuses. Students at *Low Performing* campuses were perceived to have the lowest mastery levels. Conversely, teachers rated students at *Low Performing* campuses as making the most overall progress in school, followed by students at *Acceptable* campuses, and then by students at *Recognized* campuses. Students at the *Exemplary* campuses were given the lowest overall progress ratings. See Table 17.

Table 17. Mean Teacher Ratings of Grade 1 Student Mastery of the Essential Elements and Overall Student Progress by Subject Area and Campus Accountability Rating

1995 Campus Accountability Rating:	OVERALL MASTERY	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	OVERALL PROGRESS
Exemplary (n=4)	29.80	4.08	4.19	4.27	4.28	4.32	4.33	4.32	2.45
Recognized (n=27)	29.40	3.98	4.12	4.21	4.21	4.26	4.32	4.27	2.58
Acceptable (n=63)	28.04	3.71	3.92	3.98	4.00	4.11	4.18	4.13	2.78
Low Performing (n=5)	27.56	3.59	3.89	3.85	3.89	4.00	4.20	4.11	2.93

Year-Round Campuses

There were no statistically significant differences favoring the limited sample of five year-round education (YRE) schools in this study. However, consistent with available published research (Kramer, 1996, p. 766) on block scheduling (commonly associated with year-round calendars), the discipline rate was lower in the YRE schools than in the non-YRE schools — only 12 percent versus 19 percent of students were referred outside the classroom for disciplinary action. Table 18 presents the R^2 with and without the year-round versus regular-school variable included as a separate variable. The mean teacher ratings of essential elements mastery and

overall student progress with and without this variable are included in Table 19. Because adding the variable made very little or no difference in the R^2 values, no further analyses were pursued.

Table 18. Results of Multiple Regression Analyses to Predict Teacher Judgments of First-Grade Student Mastery of the Essential Elements and Overall Student Progress by Inclusion/Exclusion of Year-Round Education (YRE) Status as a Variable

	OVERALL MASTERY	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	OVERALL PROGRESS
R^2 With YRE Included	0.3506	0.3450	0.3310	0.3194	0.3161	0.2495	0.2341	0.2630	0.3630
R^2 With YRE Not Included	0.3506	0.3445	0.3306	0.3194	0.3159	0.2495	0.2339	0.2629	0.3623
Probability	(ns)	(0.0145)	(0.0315)	(ns)	(ns)	(ns)	(ns)	(ns)	(0.0061)

The letters "ns" refer to differences that were not statistically significant.

Table 19. Mean Teacher Ratings of Grade 1 Student Mastery of the Essential Elements and Overall Student Progress by Inclusion/Exclusion of Year Round Education (YRE) Status as a Variable

YRE Status	OVERALL MASTERY	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	OVERALL PROGRESS
With YRE Included	29.11	3.77	4.13	4.17	4.19	4.24	4.25	4.36	2.73
With YRE Not Included	28.49	3.80	3.98	4.05	4.06	4.16	4.23	4.18	2.73

Gender and Ethnicity of Students Mastering All or Most Essential Elements

In this section, students' mastery levels of 1) all or most or 2) half or fewer of the essential elements — as perceived by their teachers — in each subject area are examined. To provide some interpretive background, the reader is advised that across all subject areas, the majority of students were thought to have mastered all or most of the essential elements. Perceived mastery of language arts was weakest, with 68 percent of the students reported as mastering all or most essential elements. Perceived mastery in mathematics was the next lowest (78%). Perceived mastery was best in science (80%), social studies (81%), fine arts (84%), health (85%), and physical education (87%).

There are several possible reasons why student learning of language arts was rated the lowest of all seven subject areas. For instance, it could reflect the complexity and on-going nature of building knowledge in language arts. Another possibility is simply that the order in which subject areas were printed on the survey form might have been responsible for the result. Still another may be that quality of instruction in language arts at Grade 1 is not sufficient for students to learn the subject as well as they learn other subjects. It is beyond the scope of the current research effort to know which (if any) of these possible explanations is the true reason for the result. To help summarize the data across the seven subject areas in the discussion that follows, ranges of percentages will be presented, representing the lowest to highest percentages of students having mastered each area.

Gender and ethnicity were examined of *only* those students viewed by teachers as mastering all or most of the essential elements within each subject area. To understand what follows, the reader should be aware of the

gender and ethnic composition of the sample: among boys, 47 percent were White, 39 percent were Hispanic, 12 percent were African American, and 2 percent were in other ethnic groups. Among girls, 46 percent were White, 41 percent were Hispanic, 12 percent were African American, and 1 percent were in other ethnic groups. Across the subject areas, from 52 to 54 percent of White boys and 48 to 52 percent of White girls were said to have mastered all or most essential elements — more than expected given their presence in the sample. Among Hispanic first graders in the study, 33 to 37 percent of the boys and 35 to 39 percent of the girls were reported as having mastered most or all grade level essential elements — somewhat fewer than would be expected from their presence in the sample. The percentage of boys and girls from "Other" ethnic groups mastering most or all essential elements corresponded well to their presence in the sample. This was typically true for African American boys and girls also, except for mathematics, where 2 percent fewer boys than expected (based on their presence in the sample) mastered all or most essential elements. See Table 20 for further details.

Table 20. Percentages of Students Reported at Level of Mastering All or Most Essential Elements, by Gender and Ethnicity

		Ethnicity			
Subject Area	Gender	White	Hispanic	African American	Other
Language Arts	Male	54%	33%	11%	2%
	Female	52%	35%	12%	2%
Mathematics	Male	52%	36%	10%	2%
	Female	49%	39%	11%	2%
Science	Male	52%	36%	11%	2%
	Female	49%	38%	11%	2%
Social Studies	Male	52%	36%	11%	2%
	Female	49%	38%	11%	2%
Fine Arts	Male	51%	37%	11%	2%
	Female	48%	39%	11%	1%
Physical Education	Male	50%	37%	11%	2%
	Female	48%	39%	11%	2%
Health	Male	51%	37%	11%	2%
	Female	48%	39%	11%	1%
Sample Population	Male	47% N=2,143	39% N=1,773	12% N=553	2% N=74
	Female	46% N=1,965	41% N=1,740	12% N=510	1% N=63

Simple Relationships of Processes to Teachers' Ratings of Student Mastery of Curriculum and Overall Progress in School

Reported Frequency of 1:1 Instruction

Students who never received one-to-one instruction were judged by their teachers to have higher overall mastery levels than students who received one-to-one instruction. On its face this seems to be a logical reflection of student learning needs. Students who did receive one-to-one instruction infrequently (monthly or

less often) had the lowest judged overall mastery levels, but were judged to have made the best overall progress in school. Please refer to Table 21.

Progress ratings across all other reported frequencies of one-to-one instruction (from never, to weekly and more often) were similar. One could speculate about quite a wide array of possible explanations for these survey results, not the least of which is the unknown degree of match between teachers' survey answers and their observable classroom practices. Another concerns class size and composition, as these may severely limit opportunities for meaningful one-to-one instruction in any given school. In the case of this particular instructional practice, then, it would seem that more extensive and carefully controlled research in Texas public schools is needed to fully appreciate the benefits and/or limitations of one-to-one instruction.

Table 21. Mean Teacher Ratings of Teacher Judgments of Grade 1 Student Mastery of the Essential Elements and Overall Student Progress by Subject Area and Frequency of Teachers' Use of One-to-One Instruction

Teacher Use 1:1 Instruction:	OVERALL MASTERY	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	OVERALL PROGRESS
Daily	28.42	3.79	3.97	4.04	4.06	4.14	4.22	4.17	2.73
2-4 times/week	28.57	3.79	4.00	4.07	4.07	4.18	4.25	4.19	2.70
Weekly	28.27	3.75	3.98	4.03	4.05	4.14	4.17	4.16	2.73
Monthly or less	26.22	3.55	3.73	3.69	3.68	3.71	4.04	3.82	2.93
Never	29.51	3.93	3.90	4.32	4.32	4.37	4.32	4.37	2.71

Discipline

As might be expected, teachers viewed students who were referred outside of the classroom for disciplinary action, on average, as exhibiting overall reduced mastery of the essential elements as the frequency of such referrals increased. The pattern was reversed for overall school progress, with students having the most referrals (only 4% of the students) seen as making the most overall progress and students with no referrals making the least progress. More details are presented in Table 22. To better understand this, the reader is reminded that those students who can demonstrate the most progress are typically also ones who started out the year academically well behind their peers on grade level. In addition, research has long suggested linkages between discipline and learning problems (see Elkind, 1988; and Hartup, 1992).

Table 22. Mean Teacher Ratings of Grade 1 Student Mastery of the Essential Elements and Overall Student Progress by Subject Area and Frequency of Disciplinary Referrals

Student Referred for Disciplinary Action:	OVERALL MASTERY	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	OVERALL PROGRESS
Never	28.93	3.87	4.06	4.12	4.13	4.21	4.27	4.23	2.64
Once	27.59	3.56	3.83	3.92	3.94	4.05	4.16	4.08	2.96
Twice	26.67	3.50	3.72	3.77	3.80	3.90	4.04	3.95	3.09
Three times	26.01	3.36	3.57	3.67	3.71	3.87	3.98	3.92	3.19
Four or more times	25.83	3.31	3.54	3.66	3.64	3.83	3.97	3.84	3.24

Combinations of Student Characteristics, Classroom Practices, and Inputs Associated with Grade 1 Performance Based on Teacher Judgments

Specialized statistics such as linear regression permit researchers to determine which of several characteristics, in combination, were predictive of teacher judgments and/or ratings concerning students' overall academic progress and mastery of Grade 1 essential elements. The following discussion is based upon such analyses.

Three linear regression models tested which of several selected variables in combination were predictive of teacher judgments of students' overall progress and mastery of Grade 1 essential elements. Because standardized tests are not routinely administered to first graders, no such typical measures of academic achievement were available for use as performance/outcome indicators in these statistical models. One of the models was discontinued because its overall explanatory power was negligible (for overall mastery, R^2 = 0.0319, and for overall progress, R^2 = 0.0195). See Table 23.

Table 23. Results of Multiple Regression Analyses to Predict Teacher Judgments of First-Grade Student Mastery of the Essential Elements and Overall Student Progress
(F-values above, probability levels below)

Predictor Variables	OVERALL MASTERY	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	OVERALL PROGRESS
Campus turnover	154.85 (0.0001)	140.12 (0.0001)	111.02 (0.0001)	163.88 (0.0001)	142.78 (0.0001)	129.29 (0.0001)	142.41 (0.0001)	106.95 (0.0001)	31.44 (0.0001)
Campus rating	6.32 (0.0003)	13.52 (0.0001)	5.95 (0.0005)	12.04 (0.0001)	13.76 (0.0001)	1.35 (ns)	4.11 (0.0064)	1.78 (ns)	19.86 (0.0001)
District wealth	0.12 (ns)	3.63 (ns)	0.96 (ns)	4.17 (0.0412)	2.17 (ns)	4.21 (0.0401)	11.06 (0.0009)	5.79 (0.0161)	0.52 (ns)
Teacher has 5+ Yrs. Experience	27.60 (0.0001)	1.60 (ns)	9.79 (0.0018)	20.23 (0.0001)	26.83 (0.0001)	47.29 (0.0001)	49.61 (0.0001)	42.32 (0.0001)	6.98 (0.0082)
Teacher has Advanced degree	0.80 (ns)	0.00 (ns)	6.65 (0.0099)	0.90 (ns)	1.62 (ns)	0.02 (ns)	1.01 (ns)	1.06 (ns)	2.23 (ns)
Frequency teacher/ Parent communication	2.33 (0.0403)	5.38 (0.0001)	1.09 (ns)	3.39 (0.0046)	2.35 (0.0384)	2.17 (ns)	2.56 (0.0256)	2.23 (0.0487)	2.77 (0.0256)
Frequency 1:1 Instruction	10.20 (0.0001)	3.53 (0.0070)	5.97 (0.0001)	9.60 (0.0001)	9.59 (0.0001)	17.50 (0.0001)	7.77 (0.0001)	11.47 (0.0001)	2.63 (0.0326)
R^2 (Proportion of Variance Explained)	0.0319	0.0281	0.0217	0.0343	0.0324	0.0327	0.0321	0.0270	0.0195

The letters "ns" refer to F values that were not statistically significant.

In order to see if other related variables would have better predictive power, a second regression model was run substituting 1) district instructional expenditures per student in lieu of district wealth and 2) teachers' actual number of years of experience instead of the dichotomous grouping of veteran (five or more years of experience) or non-veteran (less than five years of experience) teachers. Table 24 displays the changes in predictive power. While improved, the R^2 was still small, and therefore, the third model described below (see Table 25) was used for the remainder of the analyses.

Table 24. Results of Multiple Regression Analyses to Predict Teacher Judgments of First-Grade Student Mastery of the Essential Elements and Overall Student Progress by Instructional Expenditures and Teachers' Years of Experience Replacing District Wealth and Veteran/Non-Veteran Teacher Status (F-values above, probability levels below)

Predictor Variables	OVERALL MASTERY	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	OVERALL PROGRESS
Instructional Expenditures	96.44 (0.0001)	74.33 (0.0001)	59.17 (0.0001)	99.33 (0.0001)	91.50 (0.0001)	73.46 (0.0001)	90.22 (0.0001)	86.06 (0.0001)	24.27 (0.0001)
Years of teaching Experience	58.06 (0.0001)	11.38 (0.0007)	46.46 (0.0001)	47.06 (0.0001)	43.29 (0.0001)	75.16 (0.0001)	97.30 (0.0001)	40.04 (0.0001)	22.96 (0.0001)
R^2 (Proportion of Variance Explained)	0.0480	0.0381	0.0329	0.0493	0.0456	0.0461	0.0475	0.0377	0.0377

Table 25. Results of Multiple Regression Analyses to Predict Teacher Judgments of First-Grade Student Mastery of the Essential Elements and Overall Student Progress
(F-values above, probability levels below)

Predictor Variables	OVERALL MASTERY	Language Arts	Math	Science	Social Studies	Fine Arts	Physical Education	Health	OVERALL PROGRESS
District type (Urbanicity)	77.23 (0.0001)	72.86 (0.0001)	34.82 (0.0001)	88.95 (0.0001)	82.95 (0.0001)	49.34 (0.0001)	49.75 (0.0001)	54.54 (0.0001)	6.14 (0.0001)
Campus size (Enrollment)	3.50 (ns)	0.01 (ns)	0.13 (ns)	2.08 (ns)	2.64 (ns)	9.73 (0.0018)	6.48 (0.0109)	10.89 (0.0010)	1.59 (ns)
Classroom PTR	44.90 (0.0001)	130.81 (0.0001)	41.09 (0.0001)	50.86 (0.0001)	54.24 (0.0001)	10.84 (0.0010)	6.72 (0.0095)	11.24 (0.0008)	1.80 (ns)
Student behavior (interaction)	3,644.50 (0.0001)	3,572.51 (0.0001)	3,660.79 (0.0001)	3,073.58 (0.0001)	3,061.95 (0.0001)	2,268.66 (0.0001)	2,042.13 (0.0001)	2,415.22 (0.0001)	3,250.44 (0.0001)
Student referrals For discipline	5.26 (0.0003)	4.29 (0.0018)	5.02 (0.0005)	3.95 (0.0033)	2.58 (0.0354)	3.41 (0.0085)	6.09 (0.0001)	4.22 (0.0020)	3.29 (0.0105)
Student attendance rate	158.63 (0.0001)	126.62 (0.0001)	155.34 (0.0001)	147.62 (0.0001)	141.53 (0.0001)	108.69 (0.0001)	100.92 (0.0001)	125.65 (0.0001)	129.97 (0.0001)
R^2 (Proportion of Variance Explained)	0.3506	0.3445	0.3306	0.3194	0.3159	0.2495	0.2339	0.2629	0.3632

The letters "ns" refer to F values that were not statistically significant.

Given information in the review of relevant literature, a collection of context, input, and process variables were selected for analysis in two scenarios. Context variables gauged district urbanicity and campus enrollment. The input variable from the survey data was the classroom pupil:teacher ratio, as approximated by the number of surveys returned per teacher. Process variables included the frequency of student referrals outside the classroom for discipline, summed ratings for each student on seven classroom behaviors, and student attendance. In the first analysis, the association between teacher ratings of students' overall progress and the other variables was examined. Campus size and classroom pupil:teacher ratio were determined not to be meaningful predictors of perceived overall student progress. Process variables predictive of teacher ratings of overall student progress included the summed behavior ratings, student attendance, and student discipline. The context variable of district type also was predictive of teacher judgments of overall progress in Grade 1. Taken collectively these variables accounted for 36 percent of the variability in ratings of overall progress.

The second set of analyses examined association between the selected variables and teachers' perceptions of student mastery of essential elements. Analyses were conducted separately for each subject area and for aggregated ratings of mastery.

In these analyses, district type, classroom pupil:teacher ratio, student classroom behaviors, reports of student discipline, and student attendance emerged as predictors of teacher ratings of student mastery of essential elements across all subject areas. Campus size, in terms of enrollment, was *not* an effective predictor of perceived student performance in the areas of language arts, mathematics, science, or social studies, but it was predictive of performance in the areas of fine arts, physical education, and health. This may well reflect the "economy of scale" that permits larger schools or districts to provide more academic offerings than smaller schools. Taken collectively, these variables accounted for 35 percent of the variability in teacher ratings of student mastery of the essential elements.

DISCUSSION OF FINDINGS

The Systemwide Elementary Reform (SER) project gathered demographic, program participation, and performance information about Grade 1 in Texas. The project made an initial attempt to build a statistical model of the complex and dynamic relationships among certain major characteristics of the Texas public education system. The goal was to develop a fuller understanding of the progress of the public education system as a whole.

Specifically, the SER sought to determine what first grade in Texas looks like today; to describe the teachers' views of the children's readiness, behavior, and academic growth, and how these related to judgments of overall progress during the first grade; to identify the programs and practices first-grade teachers report using in their schools and in their classrooms, and examine how these related to judged student progress in Grade 1; and to explore relationships between combinations of student characteristics, school/classroom practices, system inputs (resources), and teacher ratings of satisfactory overall student progress in Grade 1.

Teachers' perceptions of student readiness to begin Grade 1, mastery of essential elements of Grade 1, and therefore readiness for promotion to Grade 2, are the result of a number of intertwined but not explicitly measured personal and interpersonal factors, including well-founded professional judgment. Nonetheless, teachers' perceptions provide the only picture available, given current resources, and are intended to serve only as a ***starting point*** in describing and understanding the dynamics between educational contexts, inputs, processes, and results. An analysis of Grade 1 teachers' perceptions relative to actual promotion rates and long-term academic performance of the students will be the topics of forthcoming reports. Conclusions, then, should not be drawn until additional "hard" data become available through future studies. Therefore, the continued collection of original data to supplement the PEIMS database is essential to this process.

Teachers and Their Perceptions

First-grade teachers. The survey responses of the teachers revealed that they are relatively satisfied with many aspects of their work environment. For example, most first-grade teachers in the sample considered the pupil:teacher ratio in their classrooms to be adequate; most indicated that they had sufficient quantities of developmentally and culturally appropriate instructional materials that provided good coverage of the essential elements; half of them considered their school's counseling and guidance program to be adequate to meet the needs of their students; over half considered their campus administrators to be extremely supportive of teachers, as well as of students and their families; most reported having at least moderate influence in site-based decision making; and the majority had favorable responses to questions about the staff development offered to them during the school year.

First-grade students. In the perception of their teachers, two out of three first-grade students began the school year ready to learn; most first-grade students were functioning on or above grade level by April; the majority of students were making average or above average progress; over half of the students exhibited desired classroom behaviors *often*; the vast majority were *not* referred outside the classroom for disciplinary action; and promotion to Grade 2 was judged to be appropriate for three out of four students in the sample.

Regarding student mastery of essential elements, teachers felt that a clear majority of students had mastered all or most essential elements across all subject areas, and the vast majority of first graders likely to be promoted to the second grade had mastered *most or all* of the essential elements in the seven skill areas combined; nearly all who were expected to be retained had mastered about *one half or fewer* essential elements in all areas combined. The highest percentages of perceived mastery were outside the traditional core course areas, in fine arts, physical education, and health.

Student behavior. Of the student behaviors rated by teachers, *adequate self-help skills in learning* showed the strongest relationship to perceived mastery of the essential elements for both boys and girls across all ethnic groups. The behavior showing the second strongest such relationship was *participation in class activities/interaction with classmates.*

Concerning students receiving special program services such as special education, bilingual/ESL, and Title I, some findings appearing in the text required explanation to be thoroughly understood. For example, perceived student mastery of essential elements and promotion rates in classrooms with instructional assistants were reported to be lower than for students in classrooms without instructional assistants, but these assistants typically are placed in classrooms specifically to help students who present additional needs in learning. Similarly, the study found that in general, the fewer "pullouts" (removal of students from the classroom to receive special instruction elsewhere) there were from a teacher's classroom, the better the student performance. Again, the fact that there are students being pulled out of class indicates that service delivery likely is targeting the students in that classroom who need additional resources to master the grade level curriculum.

Prekindergarten and Early Childhood Education. When teacher perceptions about those first graders who had participated in Prekindergarten two years prior to the study were compared to their perceptions about the remainder of the sample, a smaller percentage of PreK participants (62% vs. 69%) was perceived to have begun the school year ready to learn; a higher percentage of PreK participants (68% vs. 59%) was seen as making average or above average progress; a smaller percentage of PreK participants (73% vs. 79%) was expected to be promoted; and the same percentage of PreK participants (7%) as remaining students was expected to be placed in second grade. Most of the former PreK students were seen as having mastered most or all of the essential elements in each of the seven skill areas (from 62% in language arts to 87% in physical education).

When teacher perceptions about those first graders who had participated two years prior to the study in Early Childhood Education (ECE, a program which targets young children with special needs) were compared to their perceptions about the remainder of sample (non-ECE participants), a smaller percentage of ECE participants (43% vs. 69%) was thought to have begun the school year ready to learn; a larger percentage of ECE participants (78% vs. 59%) was seen as making average or above average progress; a smaller percentage of ECE participants (57% vs. 79%) was expected to be promoted, and a larger percentage (22% vs. 7%) was expected to be placed in second grade. Relatively fewer of the students who had participated in Early Childhood Education were seen as having mastered most or all of the essential elements (from 48% in language arts to 68% in physical education). While the most appropriate contrast for former ECE participants likely would be first graders in the sample identified as needing special education services but who had *not* participated in ECE two years prior to the study, the number (29) of students meeting this criterion was so low as to render the contrast unreliable. Therefore, contrasts were made only between former PreK participants, former ECE participants, and the remainder of the sample.

Gender and Ethnicity of Students Mastering All or Most Essential Elements

Relatively more White boys and girls were judged to have mastered most or all of the Grade 1 curriculum than would be expected, given their presence in the sample. Among Hispanics, however, fewer boys or girls were reported as having mastered most or all first grade essential elements than would be expected from their presence in the sample. The percentages of boys and girls from African American and "Other" ethnic groups who mastered most or all of Grade 1 content was, in all four cases, proportionate to their presence in the sample.

KEY IMPLICATIONS

Teachers' Views of Children's Readiness, Behavior, and Growth

Children in Texas public schools appear to be getting off to a good start, and the value of Prekindergarten, at least in the short term, is somewhat corroborated. More PreK participants than non-participants were seen as making average or above average overall progress in the first grade. Similar proportions of PreK participants and non-participants were viewed by their teachers as ready to begin Grade 1 (approximately two-thirds), and as likely to be promoted to Grade 2 (three-fourths). Proportionately, slightly more PreK participants than non-participants were seen as performing on grade level in oral reading proficiency.

Teachers indicated that students generally attend and regularly participate in classroom activities. However, they also reported that one out of five students is referred for disciplinary action during first grade, though very few are sent to an alternative setting.

Upon enrollment in Grade 1, three out of every four students were thought to be functioning on or above grade level in reading. Similarly, eight out of every ten students were thought to be functioning on or above grade level in mathematics. Roughly two out of every three students were perceived to be making average, above average, or excellent progress during the year. On the one hand, there is reason to be optimistic: even with the increasing learning needs posed by today's first graders — who are increasingly likely to come from economically disadvantaged homes, to have limited proficiency in English, and so on — the clear majority are said to be faring well. On the other hand, there simultaneously is cause for great concern: if fully one-quarter of today's first graders are not reading on grade level, one-fifth cannot compute on grade level, and one third are not progressing satisfactorily, how can these children be expected to fare in Grade 2 and beyond, even as the curriculum becomes increasingly complex? The need for the early identification process imposed this year in statute (TEC §28.006) is abundantly clear, as is the need for continued systemwide reform in the primary grades, targeted by the Academics 2000 initiative.

Given that nearly all (93%) of these first graders were ultimately promoted to second grade (see the *Grade 2 Interim Report*, TEA, in press), one might have questions about that decision for the one-fifth to one-third of the students who were viewed as performing *below* grade level or making *below* average progress. Two things are important to consider. First, young children learn at individual rates, but effective programs respond to the unique needs and learning schedules of individuals. In any group of children spanning an age range of one year, younger children will tend to be somewhat behind older children developmentally, but such differences typically disappear within a few years when the children move forward as a group (Southern Early Childhood Association, 1990). Second, research shows quite convincingly that retention (requiring children to repeat an entire grade) is not only ineffective, but has decidedly negative consequences for children — being over-age relative to grade level is a factor that has been repeatedly found to be strongly associated with dropping out of school (Paredes & Sanchez, 1992; Shepard & Smith, 1989; and TEA, 1997c).

In light of this tension between reasons for optimism and for concern, the need to pursue longitudinal investigations of these students through their public school careers becomes clear. How such youngsters fare on TAAS, how often they are promoted, and what programs/services they receive — to what ends — all require examination.

Teachers' Views of Practices and Programs

Teachers' attitudes toward their work environment generally seem favorable. Three of every four teachers surveyed reported having at least moderate influence in site-based decision making. More than half (55%) of the teachers described administration as "extremely supportive," and over a third viewed administration as "moderately supportive." Teachers who reported a moderate level of influence in decision making reported the highest percentages of students mastering essential elements, while teachers who reported having no influence in decision making reported the lowest. In general, administrative support appeared to have a direct relationship to perceived student mastery of essential elements; that is, teachers who reported moderately to

extremely supportive administration had the highest percentages of students mastering essential elements, followed by teachers with slightly supportive administrators, and finally, teachers who felt no support.

Staff development was favorably perceived by roughly two-thirds of the teachers surveyed, though more favorable responses were given for non-technology related staff development. Only four out of every ten schools was reported to be providing teachers with computers for classroom use. Whether or not teachers said they had a personal computer provided by the school was unrelated in this study to perceived student mastery of essential elements.

Eight out of every ten teachers reported their pupil:teacher ratio as "adequate." Teachers who reported having an adequate pupil:teacher ratio also reported relatively higher percentages of students mastering essential elements.

Three out of every four teachers surveyed reported having sufficient quantities of instructional materials. Sufficient quantities aside, nine out of ten teachers indicated the materials were both culturally and developmentally appropriate. In general, adequacy of instructional materials (sufficient quantity, quality, and coverage of essential elements) and use of culturally appropriate materials were related to higher perceived student mastery levels.

Planning period length seems adequate. Interestingly, teachers who said they had a planning period of 46 - 50 minutes in length reported higher student performance than teachers reporting a planning period of 61 minutes or longer. Teachers who said they shared their planning periods with other teachers at the same grade level reported better student performance than teachers who did not.

Only slightly more than half (51%) of the teachers, however, considered their counseling and guidance program to be adequate; but this perception also was associated with slightly better learning outcomes as judged by teachers.

Frequent teacher-initiated parental contact and a successfully completed parent:teacher conference related to higher perceived mastery of the essential elements and expected promotion to the next grade level. Students for whom teachers reported having a parent:teacher conference were seen as having higher mastery and higher promotion rates, and teachers who contacted parents one to four times a week reported higher student mastery of the essential elements than teachers who contacted parents less frequently.

When teaching reading, all but seven percent of the teachers surveyed said they engaged in whole-class instruction on a daily basis. More than eight of every ten participating teachers read aloud daily to the children. Not surprisingly, 76 percent of the teachers said that one-to-one instruction also was employed on a daily basis in teaching reading.

Teachers identified several ways in which their students used computers. Students in first-grade classrooms in this study most often used computers to solve mathematics problems (81%), to drill and practice on new concepts (84%), and for free time activities and games (78%). Computer use for accelerated reading was markedly less common (50%).

Instructional practices and methodologies also bore relationships to both the students' mastery of the essential elements and advancement to Grade 2. The following classroom activities were found, either individually or in combination, to be positively associated with expected promotion and mastery of most of the essential elements in one or more subjects: for reading instruction, teaching in whole-class format and reading aloud to the children; and in relationship to any subject, grouping students for cooperative learning, matching teaching to student learning styles, using learning centers, initiating frequent parental contact, and daily incorporation of enrichment activities into instruction.

Teachers who grouped students the least often, though, generally also reported the highest levels of student mastery of the essential elements. This was particularly true in language arts and mathematics, in that teachers

who responded that students were *never* grouped — either to increase similarities *or* to increase diversity — noted best student outcomes. Reasons for these findings could reflect less need for grouping due to the homogeneity of the entering students, or teacher awareness of current research suggesting problems or limitations associated with various grouping practices (Dreeban & Barr, 1988; Harp, 1989; Oakes, 1986; Pallas, Entwisle, Alexander, & Stluka, 1994; Reuman, 1989; and Slavin, 1987b). The key implication to be drawn is that grouping practices in Texas primary grades probably deserve significant attention in future research to determine how they are best used to promote student learning.

Complex Relationships With Student Learning

District urbanicity helped to predict teacher ratings of overall student progress. To a lesser degree, the school context as gauged by campus accountability ratings, and processes such as frequency of one-to-one instruction, were related to overall student progress. Also, the number of times students were referred outside the classroom for discipline was predictive of overall academic progress. These factors, as well as other potential context, input, and process variables, singly or in combination, should undergo further exploration to glean useful information for the practicing educator and concerned parent. For example, student socioeconomic status was *not* investigated here because it already is widely recognized in research literature as a powerful factor in understanding student learning (TEA, 1997c; Campbell & Ramey, 1995; and Schweinhart, 1994). Although student socioeconomic status probably would help to explain several of the findings, this project instead concentrates more on those factors that educators are better able to influence, though much more exploration remains to be done.

Variables that, sometimes counterintuitively, were *not* found to predict the teachers' ratings of overall student progress included: the number of minutes per day each child was reported to have read orally (process), the classroom pupil:teacher ratio (input), and campus size (context). Some of these results conflict with either conventional wisdom, research literature, or both.

In sum, two contextual factors — district type and classroom pupil:teacher ratio — and three process factors — student classroom behavior ratings, reported frequency of student referrals for discipline, and student attendance rates — helped to statistically predict teacher ratings of student mastery of essential elements by subject area. In other words, knowing about these would help a person anticipate student performance as viewed by Grade 1 teachers. The finding concerning attendance is worthy of note because it helps to validate, at least at the elementary level, the inclusion of attendance as a base indicator in determining district/campus accountability results. This is particularly true for the primary grade levels, where there are no other base indicators to capture performance (TAAS is not administered to these children, and dropout rates are only computed at Grades 7-12).

RECOMMENDATIONS

Direct measures of student progress, such as the TAAS test or experimental controls, do not exist at the first-grade level. Multiple indirect indicators must then be collected to compensate for the lack of direct measures and to increase the credibility of results through comparisons to existing performance measures, such as those in the accountability system. Patterns found in multiple indicators, then, can lead to informed judgments regarding educational practices, methodologies, and policies. These links from teacher perception to student achievement are tentative, and will be validated by TAAS test results in Grade 3. The following recommendations stem from a combination of prior research findings and from the relationships that were observed in this study between student performance in Grade 1 and school contexts, resources and constraints, and practices, as reported by first-grade teachers.

Grade 1 teachers and students should be supported in learning in each of the following ways.

- promoting access to high quality Prekindergarten programs
- maintaining small class sizes whenever possible, and supporting teachers' acquisition of effective classroom management techniques to positively direct children's behavior
- providing time for planning periods that are shared with grade level team members
- maintaining or enhancing school counseling and guidance programs
- integrating instruction to minimize "pull outs" from class
- making technology accessible and supporting its use on a high-frequency basis
- encouraging daily use of enrichment activities in classroom instruction
- continuing to provide teachers with materials that are both culturally and developmentally appropriate, and ensuring that sufficient quantities of materials are available for instruction
- supporting teachers and parents in ways that increase the likelihood of completing parent:teacher conferences

Further research in several areas is justified by virtue of some unanticipated, unverifiable, or equivocal findings in the SER project. These include the following possibilities:

- Examine these students' Grade 3 instructional and TAAS performance, in relation to the programs and practices experienced while in first grade, to detect possible aggregate differences.
- Conduct more focused research on instructional grouping practices in Texas public school classrooms, to better gauge their effectiveness.
- Conduct a follow-up study to determine how many of the sample students actually were promoted or retained.
- Continue exploring the existing data for relationships between combinations of variables that help explain student learning.
- Consider conducting further research on possible year-round (YRE) school calendar effects.

It is further recommended that, because of (a) its *significant* predictive value in understanding student achievement at Grade 1 and (b) the absence of other indicators that capture performance in primary grade levels, attendance should continue to be included as a base indicator in the accountability system used to determine district accreditation status and campus accountability ratings.

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APPENDIX A: A Five-Year Look at First Grade in Texas

Appendix A. A 5-Year Look at First Grade in Texas

Grade 1	1991 Frequency	1991 Percent	1992 Frequency	1992 Percent	1993 Frequency	1993 Percent	1994 Frequency	1994 Percent	1995 Frequency	1995 Percent
Total Enrollment	280,751	100.0	293,951	100.0	293,560	100.0	294,354	100.0	300,731	100.0
Gender										
Female	133,926	47.7	140,782	47.9	140,758	47.9	141,328	48.0	144,753	48.1
Male	146,825	52.3	153,169	52.1	152,802	52.1	153,026	52.0	155,978	51.9
Ethnicity										
Native American	597	0.2	674	0.2	699	0.2	745	0.3	822	0.3
Asian American	5,026	1.8	5,288	1.8	5,518	1.9	5,762	2.0	6,220	2.1
African American	40,236	14.3	41,688	14.2	41,910	14.3	42,345	14.4	43,625	14.5
Hispanic	98,278	35.0	103,214	35.1	105,469	35.9	109,212	37.1	113,487	37.7
White	136,614	48.7	143,087	48.7	139,964	47.7	136,290	46.3	136,577	45.4
Limited English Proficient	43,487	15.5	48,241	16.7	51,409	17.8	53,744	18.7	57,089	19.4
Economically Disadvantaged										
Eligible for Free Meal	114,762	40.9	128,906	43.9	134,948	46.0	138,909	47.2	143,884	47.8
Eligible for Reduced Cost Meal	18,588	6.6	17,945	6.1	17,840	6.1	19,100	6.5	20,024	6.7
Other Economically Disadvantaged	537	0.2	505	0.2	707	0.2	1,034	0.4	2,595	0.9
At Risk	55,598	19.8	70,086	23.8	94,015	32.0	98,236	33.4	99,502	33.1
Chapter 1/Title I										
Eligible, Participating	56,477	20.1	72,416	24.6	54,845	18.7	51,512	17.5	52,179	17.4
Eligible, Not Participating	2,925	1.0	5,664	1.9	4,103	1.4	3,470	1.2	480	0.2
Eligible, But No Program	608	0.2	2,038	0.7	5,454	1.9	3,400	1.2	4,308	1.4
School-Wide Participation	—	—	—	—	17,838	6.1	23,093	7.8	33,426	11.1
Special Education	24,971	8.9	24,943	8.5	25,215	8.6	24,803	8.4	25,289	8.4
Bilingual Education	31,618	11.3	34,110	11.6	36,608	12.5	38,466	13.1	41,268	13.7
English as a Second Language	9,665	3.4	9,959	3.4	10,146	3.5	10,994	3.7	11,656	3.9
Gifted and Talented Education	10,653	3.8	12,874	4.4	10,847	3.7	9,454	3.2	9,957	3.3

Source: TEA, PEIMS (1991–1995).
Note: For definitions of each category, see TEA (1995a), PEIMS Data Standards; TEA (1995b), Glossary for the AEIS 1994-95 Report; and TEC 1996 (§29.081 for At Risk; and §29.121 for Gifted and Talented Education).

APPENDIX B: How Children Learn

HOW CHILDREN LEARN

1. ***Children learn and grow as whole persons.*** Children learn best when their physical and emotional needs are met and they feel safe and secure. The child's self-image strongly affects his or her eagerness to learn and ability to do so.

2. ***Children learn through active engagement and through conversation and dialogue concerning their experiences.*** Young children are concrete learners who construct knowledge based on direct sensory experiences. For children, play is serious work.

3. ***All children can learn, and given appropriate settings, want to learn.*** Children are persistent, curious, and creative; they are very eager to make sense out of their world.

4. ***Children learn quickly when material is presented in meaningful ways at appropriate times.*** Traditional teacher-focused models are unsuitable for the ways young children learn and the ways their developing brains function. They learn best when actively involved in activities that they have a role in initiating.

5. ***Children exhibit different learning styles.*** Programs for young children should offer multisensory experiences and opportunities to choose from a variety of materials appropriate to their individual learning styles. Cultural and linguistic diversity should be viewed as opportunities to expand children's learning options rather than as problems to be resolved by standardization and enforced homogeneity.

6. ***Children grow and develop through predictable stages, but at individual rates.*** Learning is not a lock-step, linear progression; effective programs must respond to the unique needs and learning schedules of different children. In any group of children spanning an age range of one year, younger children will tend to be somewhat behind older children in their developmental progress. Such differences typically disappear within a few years when the children move forward as a group.

Source: Southern Early Childhood Association (1990). *Continuity of learning for four- to seven-year-children, A position statement,* per Southern Regional Education Board (1994). *Getting schools ready for children: The other side of the readiness goal*, p. 9.

APPENDIX C: Social Attributes Checklist

SOCIAL ATTRIBUTES CHECKLIST

I. Individual Attributes

The child:

1. is USUALLY in a positive mood
2. is not EXCESSIVELY dependent on the teacher, assistant or other adults
3. USUALLY comes to the program or setting willingly
4. USUALLY copes with rebuffs and reverses adequately
5. shows the capacity to empathize
6. has positive relationships with one or two peers; shows capacity to really care about them, miss them if absent, etc.
7. displays the capacity for humor
8. does not seem to be acutely or chronically lonely

II. Social Skill Attributes

The child USUALLY:

1. approaches others positively
2. expresses wishes and preferences clearly; gives reasons for actions and positions
3. asserts own rights and needs appropriately
4. is not easily intimidated by bullies
5. expresses frustrations and anger effectively and without harming others or property
6. gains access to ongoing groups at play and work
7. enters ongoing discussion on the subject; makes relevant contributions to ongoing activities
8. takes turns fairly easily
9. shows interest in others; exchanges information with and requests information from others appropriately
10. negotiates and compromises with others appropriately
11. does not draw inappropriate attention to self
12. accepts and enjoys peers and adults of ethnic groups other than his or her own
13. interacts nonverbally with other children with smiles, waves, nods, etc.

III. Peer Attributes

The child is:

1. USUALLY accepted versus neglected or rejected by other children
2. SOMETIMES invited by other children to join them in play, friendship, and work.

Source: McClellan & Katz (1992). Assessing the social development of young children: A checklist of social attributes. *Dimensions of Early Childhood, fall,* pp. 9-10.

APPENDIX D: Sampling Plan Matrix and Sampling Weights

Figure D-1. Sampling Plan Matrix

Groups	YRE	High Perform	Low Perform	Econ. Disadv.	Urban	Suburban	Non-Metro.	Rural	Subtotal
				1st Quartile					
# campuses	102	208	26		489	147	66	26	728
Solicited	5	5	5		13	4	2	2	21
Participating	4	5	5		13	4	2	2	21
TX students	12,275	18,992	2,040		47,222	17,349	6,681	599	71,851
Projected	502	411	562		1,582	562	219	30	2,393
Participated	322	605	501		1,585	452	193	4-	2,270
				2nd Quartile					
# campuses					189	261	183	100	733
Solicited					8	5	5	3	21
Participating					8	5	5	3	21
TX students					24,586	21,212	19,415	2,407	67,620
Projected					820	482	416	116	1,834
Participated					820	509	460	119	1,908
				3rd Quartile					
# campuses					136	174	229	189	728
Solicited					4	5	7	5	21
Participating					4	5	7	5	21
TX students					13,690	18,913	22,607	5,472	60,682
Projected					421	555	679	175	1,830
Participated					436	512	607	196	1,751
				4th Quartile					
# campuses					101	326	165	137	729
Solicited					3	10	5	4	22
Participating					3	10	5	4	22
TX students					10,678	35,643	15,145	3,910	65,376
Projected					352	1,219	360	170	2,101
Participated					321	1,228	388	196	2,133
Subtotal									
# campuses	102	208	26		915	908	643	452	2,918
Solicited	5	5	5		28	24	19	14	85
Participating	4	5	5		28	24	19	14	85
TX students	12,275	18,992	2,040		96,176	93,117	63,848	12,388	265,529
Projected	502	411	562		3,175	2,818	1,674	491	8,158
Participated	322	605	501		3,162	2,701	1,648	551	8,062

GRAND TOTAL	
# campuses	3,254
Solicited	100
Participating	99
TX students	298,836
Projected	9,633
Participated	9,490

Table D-2. Sampling Weights

Cell Label	N	Proportion			p(N)	p(n)	Weight
High Performing	204		5	5	0.063256	0.05	1.265116
Low Performing	23		5	5	0.007132	0.05	0.142636
Year-Round	87		5	5	0.026977	0.05	0.539535
Non-Metro 1	65	0.022329	1.90	2	0.020155	0.02	1.007752
Non-Metro 2	182	0.062521	5.31	5	0.056434	0.05	1.128682
Non-Metro 3	228	0.078324	6.66	7	0.070698	0.07	1.009967
Non-Metro 4	168	0.057712	4.91	5	0.052093	0.05	1.04186
Rural 1	25	0.008588	0.73	2	0.007752	0.02	0.387597
Rural 2	99	0.034009	2.89	3	0.030698	0.03	1.023256
Rural 3	189	0.064926	5.52	5	0.058605	0.05	1.172093
Rural 4	135	0.046376	3.94	4	0.04186	0.04	1.046512
Suburban 1	149	0.051185	4.35	4	0.046202	0.04	1.155039
Suburban 2	187	0.064239	5.46	5	0.057984	0.05	1.15969
Suburban 3	174	0.059773	5.08	5	0.053953	0.05	1.07907
Suburban 4	326	0.111989	9.52	10	0.101085	0.1	1.010853
Urban 1	488	0.16764	14.25	13	0.151318	0.13	1.163983
Urban 2	260	0.089316	7.59	8	0.08062	0.08	1.007752
Urban 3	136	0.046719	3.97	4	0.042171	0.04	1.054264
Urban 4	100	0.034352	2.92	3	0.031008	0.03	1.033592
Subtotal	2,911			85.00			
TOTAL	3,225			100.00			

APPENDIX E: Teacher Survey Items and Frequencies and Percentages of Responses

Appendix E
First-Grade Teacher Questionnaire
Number (Percentage) Responding

Staffing and Organizational Information

1. Are students in your class taught core subjects, such as science, mathematics, or reading, by teachers other than yourself?

Yes	No
2,473 (27%)	6,532 (73%)

2. Is this class considered a transition class or developmental first grade class?

Yes	No
1,083 (12%)	8,216 (88%)

3. Are you bilingual in English/Spanish (regardless of whether you have certification to teach bilingual education)?

Yes	No
2,179 (23%)	7,243 (77%)

4. Do you have an instructional assistant in your classroom?

Yes	No
1,930 (21%)	7,078 (79%)

(a) If so, is the assistant bilingual in English/Spanish?

Yes	No
1,285 (64%)	695 (36%)

5. In your opinion, how much influence do teachers on your campus have in site-based decision-making?

Extensive influence	2,154 (24%)
Moderate influence	4,406 (49%)
Limited influence	2,127 (24%)
No influence	293 (3%)

6. How supportive are the school's administrators of first-grade teachers?

Extremely supportive	4,966 (55%)
Moderately supportive	3,236 (36%)
Slightly supportive	748 (8%)
Not at all supportive	53 (.6%)

7. How supportive are the school's administrators of first-grade students and their families?

Extremely supportive	4,820 (54%)
Moderately supportive	3,491 (39%)
Slightly supportive	649 (7%)
Not at all supportive	2 (.02%)

8. Is the actual working pupil:teacher ratio at first grade adequate?

Yes	No
7,188 (80%)	1,814 (20%)

9. About how long is your planning period during the school day?

up to 45 minutes per day	6,403 (71%)
46 – 50 minutes per day	1,296 (14%)
51 – 55 minutes per day	225 (3%)
56 – 60 minutes per day	868 (10%)
61 minutes or more per day	184 (2%)

10. Is your planning period shared with other teachers on your grade level?

Yes	No
8,330 (92%)	679 (8%)

11. Are the school's counseling and guidance support services adequate to meet the needs of your students?

Yes	No
4,579 (51%)	4,405 (49%)

12. What is your opinion of the quality of staff development offered THIS YEAR from any source (district, ESC, etc.), **ON ANY TOPICS NOT RELATED TO TECHNOLOGY**, in terms of. . .

(a) timing: did you get what you needed, when you needed it?

Yes	No
6,663 (74%)	2,344 (26%)

(b) content relevance: were the topics ones you needed to have covered?

Yes	No
7,239 (81%)	1,748 (19%)

(c) amount: was the amount of training on pertinent topics appropriate to your needs?

Yes	No
6,568 (73%)	2,441 (27%)

(d) support for application of new learning: was anyone available to help you apply new skills in your work?

Yes	No
6,217 (69%)	2,783 (31%)

(e) target audience: was everyone there who needed to be there?

Yes	No
6,922 (77%)	2,051 (23%)

Students and Instructional Information

13. Approximately how many students in your class this year. . .

(a) participate in *all* class activities throughout the day?

10 or less	370 (4%)
11 - 15	1,312 (14%)
16 - 20	4,734 (50%)
21 - 25	3,016 (32%)

(b) are routinely off-task (but not disruptive) during the day?

None	383 (4%)
1- 3	6,399 (68%)
4 - 6	2,367 (25%)
7 - 10	316 (3%)
11 or more	16 (.2%)

(c) are routinely disruptive during the day?

None	1,185 (13%)
1- 3	6,579 (69%)
4 - 6	1,518 (16%)
7 - 10	199 (2%)
11 or more	0 (0%)

14. On average, how frequently do you initiate communication (mail, handouts, telephone, etc.) with parents/guardians of children in your classroom for any reason, not just in relation to disciplinary incidents?

Daily	1,223 (14%)
2 - 4 times each week	2,237 (25%)
Weekly	4,171 (46%)
Monthly	1,190 (13%)
Less often than monthly	206 (2%)

15. On average, how often do your students use learning centers ("stations" or designated areas in the classroom where individuals or groups engage in specified sets of activities relating to a certain subject area or project) for instruction?

Daily	3,767 (42%)
2 - 4 times each week	2,362 (26%)
Weekly	1,643 (18%)
Monthly	460 (5%)
Less often than monthly	772 (9%)

16. On average, how many minutes *per day* does each student spend reading orally?

0 - 5 minutes	525 (6%)
6 - 10 minutes	2,109 (23%)
11 - 15 minutes	1,985 (22%)
16 - 20 minutes	1,611 (18%)
21 - 25 minutes	738 (8%)
26 minutes or more	2,047 (23%)

17. How often do you typically use each of the following methods or tools to teach reading to your class?

	Daily	2 - 4 times each week	Weekly	Monthly or less often	Never
(a) Use the state-adopted basal reading series	4,867 (54%)	2,098 (23%)	807 (9%)	708 (8%)	500 (6%)
(b) Use the state-adopted supplemental reading series	1,859 (21%)	2,258 (25%)	2,008 (23%)	2,057 (23%)	705 (8%)
(c) Provide instruction in phonemic awareness (sound-symbol relationships)	7,152 (79%)	1,506 (17%)	323 (4%)	0 (0%)	21 (.2%)
(d) Have students respond in writing to the stories they read	2,386 (27%)	4,046 (45%)	2,146 (24%)	308 (3%)	98 (1%)
(e) Use picture books	4,431 (50%)	1,566 (18%)	1,301 (15%)	1,401 (16%)	218 (2%)
(f) Use an assortment of children's books	7,103 (79%)	1,337 (15%)	511 (6%)	36 (.4%)	38 (.4%)
(g) Use one-to-one instruction with students	4,763 (53%)	3,136 (35%)	852 (9%)	215 (2%)	38 (.4%)
(h) Use whole-class instruction	8,316 (93%)	400 (4%)	189 (2%)	26 (.3%)	0 (0%)
(i) Have students read the same stories more than once	3,030 (34%)	4,412 (49%)	1,289 (14%)	201 (2%)	75 (1%)
(j) Read aloud to the children	7,579 (84%)	1,312 (15%)	116 (10%)	0 (0%)	0 (0%)
(k) Provide time for children to read without interruption	6,537 (72%)	1,677 (19%)	792 (9%)	18 (.2%)	1 (.01%)

18. On average, how frequently do you group students for instruction. . .

(a) on the basis of having ***similar*** abilities/skill levels?

Daily	2-4 times each week	Weekly	Monthly or less often	Never group like this
3,387 (38%)	2,590 (29%)	1,107 (12%)	612 (7%)	1,319 (15%)

(b) on the basis of having ***diverse*** abilities/skill levels?

Daily	2-4 times each week	Weekly	Monthly or less often	Never group like this
2,958 (33%)	2,702 (30%)	1,886 (21%)	607 (7%)	832 (9%)

(c) so that they can engage in cooperative learning?

Daily	2-4 times each week	Weekly	Monthly or less often	Never group like this
2,735 (30%)	3,260 (36%)	1,956 (22%)	871 (10%)	184 (2%)

(d) for in-class team teaching with a special programs teacher (special education, Title 1, etc.)?

Daily	2-4 times each week	Weekly	Monthly or less often	Never group like this
1,174 (13%)	623 (7%)	477 (5%)	513 (6%)	6,238 (69%)

(e) so that some can leave the classroom for special programs participation (special education, Title 1, etc.)?

Daily	2-4 times each week	Weekly	Monthly or less often	Never group like this
3,947 (44%)	1,109 (12%)	501 (6%)	278 (3%)	3,190 (35%)

19. How many different times during a typical day are one or more students pulled out of your class for special programs instruction, including Title 1, special education, gifted/talented, etc.?

Never	1,379 (15%)
Once	2,928 (32%)
Twice	2,379 (26%)
Three times	1,076 (12%)
Four times	687 (8%)
Five or more times	576 (6%)

20. On average, how frequently do you use enrichment activities with any or all students in your class?

Daily	2,991 (33%)
2 - 4 times each week	3,813 (42%)
Weekly	1,924 (21%)
Monthly or less often	230 (3%)
I generally do not use these	69 (1%)

21. On average, how frequently do you use different modalities (including but not limited to sight, touch, hearing) to match the different learning styles of the students in your class this year?

Daily	4,843 (54%)
2 - 4 times each week	2,497 (28%)
Weekly	1,121 (12%)
Monthly or less often	440 (5%)
I don't customize instruction in this way	126 (1%)

22. How frequently do you assign homework to the students in your class this year?

Daily	4,257 (47%)
2 - 4 times each week	3,542 (39%)
Weekly	1,023 (11%)
Monthly or less often	117 (1%)
I don't assign homework	86 (1%)

Instructional Materials

23. For which subjects do you generally provide your students with manipulatives or "hands-on" materials for learning?

	Yes	No
(a) All subjects	5,585 (63%)	3,253 (37%)
(b) Language Arts	1,626 (46%)	1,886 (54%)
(c) Science	2,852 (80%)	707 (20%)
(d) Social Studies	868 (25%)	2,599 (75%)
(e) Mathematics	3,541 (98%)	59 (2%)

24. How adequately are the essential elements addressed by the instructional materials you use with this grade level?

Excellent coverage	2,693 (30%)
Very good coverage	4,517 (50%)
Reasonable coverage	1,623 (18%)
Marginal coverage	152 (2%)
Completely inadequate coverage	0 (0%)

25. Regarding the instructional materials that you use with the students in your class this year:

	Yes	No
(a) Are there sufficient quantities for the children?	6,822 (76%)	2,169 (24%)
(b) Are they culturally appropriate for the children?	8,168 (91%)	772 (9%)
(c) Are they developmentally appropriate for the children?	8,246 (92%)	714 (8%)

26. What types of materials, if any, do you still need to work effectively with your students?

	Yes	No
(a) Spanish language	2,228 (25%)	6,670 (75%)
(b) Other language	716 (8%)	8,057 (92%)
(c) More up-to-date	3,330 (38%)	5,476 (62%)
(d) Multicultural	4,085 (46%)	4,782 (54%)
(e) Multimedia	5,021 (57%)	3,801 (43%)
(f) Above grade level	4,575 (52%)	4,246 (48%)
(g) Below grade level	4,087 (46%)	4,730 (54%)

Technology

27. Does the school provide ***you*** with a personal computer?

Yes	No
3,673 (41%)	5,354 (59%)

28. On average, how frequently do you use a computer (your own or one provided by the school) . . .

(a) to support non-instructional professional work, such as maintaining grades, attendance, or preparing materials outside of class time?

Daily	1,176 (13%)
2 - 4 times each week	1,538 (17%)
Weekly	1,938 (21%)
Monthly or less often	2,593 (29%)
N/A, don't have access to a computer	1,782 (20%)

(b) during instructional delivery?

Daily	1,368 (15%)
2 - 4 times each week	1,241 (14%)
Weekly	1,941 (22%)
Monthly or less often	1,848 (20%)
N/A, don't have access to a computer	2,629 (29%)

29. What is your opinion of the quality of staff development offered THIS YEAR from any source (district, ESC, etc.), <u>ON ANY TECHNOLOGY-RELATED TOPICS,</u> in terms of. . .

(a) timing: did you get what you needed when you needed it?

Yes	No
5,628 (63%)	3,359 (37%)

(b) content relevance: were the skills ones you needed to have covered?

Yes	No
6,188 (69%)	2,815 (31%)

(c) amount: was the amount of training on pertinent skills appropriate to your needs?

Yes	No
5,496 (61%)	3,491 (39%)

(d) support for application of new learning: was anyone available to help you apply new skills in your work?

Yes	No
5,843 (65%)	3,079 (35%)

(e) target audience: was everyone there who needed to be there?

Yes	No
5,970 (67%)	2,949 (33%)

30. Do ***your students*** have access to computers at school?

Yes	No
8,665 (96%)	361 (4%)

31. On average, how frequently do your students use school computers for completing schoolwork?

Daily	1,823 (21%)
2 - 4 times each week	2,086 (23%)
Weekly	2,368 (27%)
Monthly or less often	1,886 (21%)
N/A, school doesn't have computers for students	717 (8%)

32. In which of the following ways do your students use the computers?

(a) to drill and practice on new concepts

Yes	No	Unsure
7,559 (84%)	1,174 (13%)	252 (3%)

(b) to write their own paragraphs and stories

Yes	No	Unsure
4,220 (47%)	4,339 (48%)	420 (5%)

(c) for accelerated reading

Yes	No	Unsure
4,467 (50%)	4,091 (46%)	409 (4%)

(d) to solve mathematics problems

Yes	No	Unsure
7,271 (81%)	1,515 (17%)	204 (2%)

(e) to solve scientific problems

Yes	No	Unsure
967 (11%)	7,223 (81%)	762 (9%)

(f) to search for information

Yes	No	Unsure
1,580 (17%)	6,805 (76%)	605 (7%)

(g) for free time activities and games

Yes	No	Unsure
7,031 (78%)	1,832 (20%)	145 (2%)

<u>Thank you for your time in completing this survey.</u>

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APPENDIX F: Student Survey Items and Frequencies and Percentages of Responses

Appendix F
Questionnaire About Individual Students
Number (Percentage) Responding

Enrollment Information

1. Please fill in the space by ***each month*** that this student has been in your classroom this year.

	Number of students in attendance		Number of students in attendance
August 1995	7,776	January 1996	8,432
September 1995	8,211	February 1996	8,423
October 1995	8,439	March 1996	8,355
November 1995	8,421	April 1996	8,337
December 1995	8,428	May 1996	5,718

2. Approximately how many times has this student been tardy (late by at least 15 minutes) to school so far this year?

Never:	4,576 (51%)	11 to 15:	249 (3%)
1 to 5:	3,318 (37%)	16 to 20:	107 (1%)
6 to 10:	608 (7%)	21 or more:	166 (2%)

Academic Progress

3. Did this student begin the school year ready to learn on a first grade level?

Yes	No
6,014 (67%)	3,019 (33%)

4. Please mark your best estimation of this student's ***current level*** of functioning in each area listed below.

	Above Current Grade Level	On Current Grade Level	Below Current Grade Level
Oral reading proficiency	2,002 (22%)	4,553 (51%)	2,459 (27%)
Reading comprehension	1,889 (21%)	4,643 (52%)	2,468 (27%)
Mathematics instruction	1,615 (18%)	5,775 (64%)	1,623 (18%)

5. Please provide your best professional assessment of how many essential elements at Grade 1 this student has mastered, to date, in each of the areas listed below.

	All	Most	About Half	Few	None
English Language Arts	2,412 (27%)	3,714 (41%)	1,458 (16%)	1,167 (13%)	225 (2.5%)
Mathematics	2,774 (31%)	4,270 (47%)	1,042 (12%)	817 (9%)	124 (1.4%)
Science	3,043 (34%)	4,190 (46%)	976 (11%)	697 (8%)	116 (1.3%)
Social Studies	3,050 (34%)	4,252 (47%)	941 (10%)	674 (8%)	105 (1.2%)
Fine Arts	3,392 (38%)	4,185 (47%)	753 (8%)	573 (6%)	69 (.8%)
Physical Education	3,651 (41%)	4,180 (47%)	619 (7%)	458 (5%)	54 (.6%)
Health	3,514 (39%)	4,102 (46%)	760 (9%)	539 (6%)	74 (.8%)

6. Which term best describes the overall progress made by this student during the school year?

Excellent	Above average	Average	Below Average	Poor
519 (6%)	1,456 (16%)	3,722 (41%)	2,052 (23%)	1,282 (14%)

7. Please mark the choice representing your best professional judgment regarding this student's grade level promotion or retention at the end of the school year.

Should be promoted to Grade 2: 6,916 (77%)
Should be placed in Grade 2: 709 (8%)
Should be promoted from transitional program to regular Grade 1: 99 (1%)
Should be retained in Grade 1: 707 (8%)
Should be placed in a transitional program: 171 (2%)
Should be re-evaluated following completion of summer program: 178 (2%)
Cannot say at this time: 245 (3%)

8. Was this student referred for special education assessment this school year?

Yes	No	Unsure
751 (8%)	8,180 (91%)	105 (1%)

9. Does this student participate in any computer lab programs (such as Writing to Read, CCC, etc.)?

No: 2,869 (32%)
Yes, daily: 1,753 (19%)
Yes, 2-4 times each week: 1,653 (18%)
Yes, weekly: 1,902 (21%)
Yes, biweekly: 636 (7%)
Yes, monthly or less often: 223 (3%)

Context Information

10. Using the rating scale shown, please rate this student on each of the following statements.

He/she converses freely in at least one language at school.

Always	Often	Sometimes	Seldom	Never
6,520 (72%)	1,701 (19%)	587 (7%)	190 (2%)	87 (.4%)

He/she seeks appropriate assistance from adults at school.

Always	Often	Sometimes	Seldom	Never
3,150 (35%)	3,058 (34%)	2,102 (23%)	614 (7%)	106 (1%)

He/she fears making mistakes in completing assignments.

Always	Often	Sometimes	Seldom	Never
284 (3%)	919 (10%)	2,900 (32%)	2,911 (32%)	1,997 (22%)

He/she has been disciplined for physical aggression towards peers.

Always	Often	Sometimes	Seldom	Never
163 (2%)	501 (6%)	1,055 (12%)	1,550 (17%)	5,736 (64%)

He/she participates in class activities and interacts with classmates.

Always	Often	Sometimes	Seldom	Never
4,279 (48%)	3,038 (34%)	1,263 (14%)	344 (4%)	48 (.5%)

He/she demonstrates adequate self-help skills in learning.

Always	Often	Sometimes	Seldom	Never
2,816 (31%)	2,739 (30%)	2,076 (23%)	1,150 (13%)	232 (3%)

He/she readily makes and maintains friendships with classmates.

Always	Often	Sometimes	Seldom	Never
4,234 (47%)	3,106 (35%)	1,321 (15%)	312 (3%)	42 (.5%)

11. Did you complete a parent-teacher conference with this student's parents or guardians during this school year?

Yes	No
8,184 (91%)	851 (9%)

12. Did you visit this student's home before or during the school year?

Yes	No
265 (3%)	8,764 (97%)

13. Has this student been considered to be in a homeless situation at any point during this year?

Yes	No	Unsure
88 (1%)	8,646 (96%)	293 (3%)

14. Does this student live with:

Mother only: 1,792 (20%)
Father only: 142 (2%)
Mother and father (including step-parents): 6,667 (74%)
Legal guardian(s): 40 (.4%)
Other relatives such as Grandparent, Aunt, Uncle, etc: 312 (3.5%)
Other: 57 (.6%)

Discipline

15. Over the course of the school year, how many times has this child been referred outside the classroom for disciplinary action?

Never	Once	Twice	Three times	Four or more times
7,315 (81%)	680 (7.5%)	417 (5%)	223 (2.5%)	390 (4%)

16. How many times has this child been suspended from school so far this year?

Never	Once	Twice	Three times	Four or more times
8,903 (99%)	75 (.8%)	30 (.3%)	9 (.1%)	11 (.1%)

17. (a) Has this child been placed in an alternative learning setting for disciplinary reasons during any part of this school year?

Yes	No (Skip #17b and #17c)	Unsure (Skip #17b and #17c)
291 (3%)	8,694 (97%)	17 (.2%)

(b) If "Yes," which of the following best represents the type of alternative setting involved? Please select all that apply.

In-school suspension center: 203 (68%)
Alternative campus: 17 (6%)
Other: 75 (25%)
Don't know: 2 (.7%)

Counts reflect duplication — some students (about 5% overall) were in more than one type of alternative setting.

(c) If "Yes," for how long was the child educated in the alternative setting?

Less than 1 day: 146 (52.5%)
1 to 5 days: 109 (39%)
6 to 10 days: 9 (3%)
11 to 15 days: 1 (.4%)
16 to 20 days: 0 (0%)
21 days or more: 13 (5%)

Thank you for your time in completing this survey.

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Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a nonsegregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

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