

## Executive Summary

Kindergarten is a critical period in children's early school careers. It sets them on a path that influences their subsequent learning and school achievement. For most children, kindergarten represents the first step in a journey through the world of formal schooling. However, children entering kindergarten in the United States in the 1990s are different from those who entered kindergarten in prior decades. They come from increasingly diverse racial, ethnic, cultural, social, economic and language backgrounds. Many kindergartners now come from single-parent families and from step-parent families. They also differ in the level and types of early care and educational experiences that they have had prior to kindergarten (Zill et al. 1995).

Our nation's schools face new opportunities and new challenges. Schools are expected to meet the educational needs of each child regardless of their background and experience. Services, such as meals and before- and after-school child care, that were provided by other institutions in the past are now being provided by schools. Teachers are faced with classrooms of children with increasingly diverse needs. In addition, growing pressure to raise academic standards and to assess all students' progress towards meeting those standards places even more burden on schools and teachers.

Much of the literature on the status of children in our nation's schools is focused on elementary (e.g., fourth-graders in the National Assessment of Educational Progress) and secondary school children (e.g., twelfth-graders in the National Assessment of Educational Progress and eighth-, tenth- and twelfth-graders in the National Education Longitudinal Study of 1988). Little information is available on kindergarten programs in the United States and on the nation's children as they enter kindergarten and move through the primary grades. Information about the entry status of the nation's kindergartners can inform educational policy and practice, and especially those policies and practices that are targeted to meeting the needs of a diverse population of children entering kindergarten for the first time.

In the fall of 1998, about 4 million children were attending kindergarten in the United States, approximately 95 percent of them for the first time. Of the children attending kindergarten, 85 percent were in public school, 15 percent in private school, 55 percent were in full day programs and 45 percent were in part day program.<sup>1</sup>

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<sup>1</sup> U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99, Fall 1998.

Whether or not children succeed in school is in part related to events and experiences that occur prior to their entering kindergarten for the first time. Children's preparedness for school and their later school success are related to multiple aspects of their development. Children's physical well-being, social development, cognitive skills and knowledge and how they approach learning are all factors that contribute to their chance for success in school (Kagan et al. 1995). Additionally, the differences we see in children's knowledge and skill as they enter kindergarten can be contributed to a variation in family characteristics (e.g., maternal education, family type) and home experiences (home educational activities, nonparental care). A complex and continuous collaboration exists between the child and the family; and, the family can provide the resources and support that children require to increase their chances of succeeding in school (Maccoby 1992). For some children, the absence of resources and support place them at increased risk for school failure.

This report presents the first findings from a new national study of kindergartners, their schools, classrooms, teachers and families. The Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), sponsored by the U.S. Department of Education, National Center for Education Statistics (NCES), began following a nationally representative sample of some 22,000 kindergartners in the fall of 1998. The ECLS-K will follow the same cohort of children from their entry to kindergarten through their fifth grade year. Data will be collected not only in the fall of kindergarten but also spring kindergarten, fall first grade, spring first grade, spring third grade and spring fifth grade. In the fall of kindergarten, data were collected from children, their parents and their teachers. Information from children was gathered during an individualized in-person assessment with the child in the child's school, parents were interviewed over the phone and teachers were given self-administered questionnaires. Westat, Inc. is conducting the kindergarten and first grade collections for NCES.

This report is based on the 95 percent of children entering kindergarten for the first time in the fall of 1998. Future reports will provide information on those children who repeated kindergarten in the fall of 1998.

## **Cognitive Skills and Knowledge**

Children's cognitive skills and knowledge are frequently thought of as core ingredients in the recipe for success in school. Researchers have conceived cognitive development as an extended set of

multidimensional skills and proficiencies which include language/literacy, reasoning and general knowledge (Kagan et al. 1995). Children's language and literacy refers to both their oral communication (language) and understanding of the written word (literacy). Children's reasoning refers to their mathematical skills. The concept of general knowledge refers to children's conceptions and understandings of the world around them.

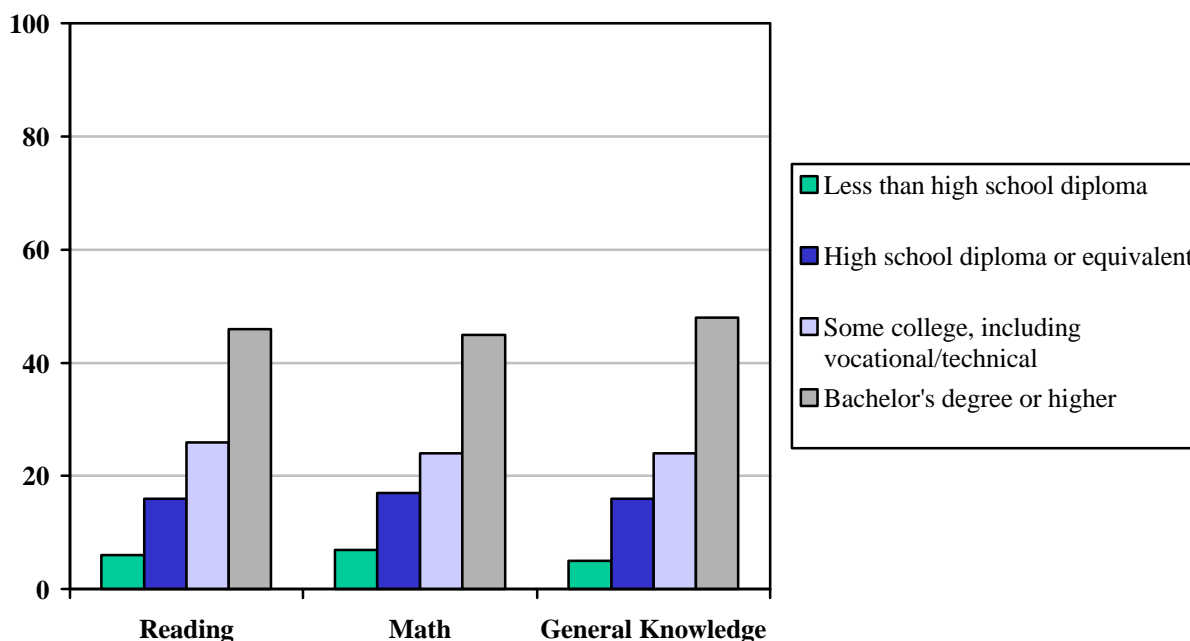
As children enter kindergarten for the first time, they differ in their cognitive skills and knowledge. Children's reading, mathematics and general knowledge are related to their age as they enter kindergarten, the level of their mother's education (see figure A), their family type, the primary language spoken in the home and their race-ethnicity.

- In reading, mathematics and general knowledge, older kindergartners (born in 1992) outperform the younger kindergartners (born September through December 1993). The older kindergartners are more likely to score in the highest quartile of the distribution of scores than the younger kindergartners. However, some of the youngest children, those just turning 5, also score in the highest quartile (16 percent in reading, 12 percent in mathematics and 12 percent in general knowledge). Additionally, some of the older kindergartners (born in 1992) are scoring in the lowest quartile (15-19 percent in reading, 13-17 percent in mathematics and 11-16 percent in general knowledge).
- Children's performance in reading, mathematics and general knowledge increases with the level of their mothers' education. Kindergartners whose mothers have more education are more likely to score in the highest quartile in reading, mathematics and general knowledge than all other children. However, some children whose mothers have less than a high school education also score in the highest quartile (6 percent in reading, 7 percent in mathematics and 4 percent in general knowledge). Additionally, some children whose mothers have a bachelor's degree or higher are scoring in the lowest quartile (8 percent in reading, 18 percent in mathematics and 10 percent in general knowledge).
- Children's performance in reading, mathematics and general knowledge differs by their family type: kindergartners from two-parent families are more likely to score in the highest quartile in reading, mathematics and general knowledge than children from single-mother families. However, some children with single mothers also score in the highest quartile (14 percent in reading, 14 percent in mathematics and 12 percent in general knowledge). Additionally, some children from two-parent families are scoring in the lowest quartile (22 percent in reading, 21 percent in mathematics and 20 percent in general knowledge).

In terms of their specific skills in reading and math, 66 percent of first-time kindergartners are proficient in recognizing their letters, 29 percent are proficient in understanding the beginning sounds (letter sound relationship at the beginning of words) and about 17 percent are proficient in understanding the ending sounds (letter sound relationship at the end of words). In math, nearly all (94 percent) first-time kindergartners are proficient in number and shape (recognizing numbers, shapes and counting to 10),

58 percent are proficient in understanding relative size (sequencing patterns and using nonstandard units of length to compare objects) and 20 percent are proficient in understanding ordinal sequence (identification of the ordinal position of an object in a sequence—e.g., fifth in line).

**Figure A.—Percentage of first-time kindergartners scoring in the highest quartile of reading, math and general knowledge, by maternal education: Fall 1998**



SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99, Fall 1998.

## Social Skills

Children’s social skills relate both to the quality and success of their school experiences (Meisels et al. 1996). Young children construct knowledge by interacting with others and their environment (Bandura 1986). In order to interact successfully in a variety of circumstances and with a variety of people, children need to possess interpersonal skills. They need to feel secure enough to join, question and listen to their peers and adults. This report explores indicators of children’s social development by looking at children’s interpersonal skills and behavioral patterns as rated by their parents and teachers.

For the most part, parents and teachers report a high incidence of prosocial behaviors and a low incidence of problem behaviors. Parents report that about 82-89 percent of first-time kindergartners often to very often join others in play, make friends and comfort others. Teachers report that about 75 percent of first-time kindergartners are accepting of peer ideas and form friendships. In terms of more problematic behaviors (e.g., fighting and arguing), parents report that about 33 percent of first-time kindergartners argue with others often to very often and less than 20 percent of first-time kindergartners fight with others and get angry easily often to very often. Teacher ratings are lower, with about 10 percent of first-time kindergartners arguing with others, fighting with others and easily getting angry often to very often. Teacher ratings of children's prosocial and problem behaviors differ by children's family type and minority status.

- Kindergarten teachers rate children with some characteristics of risk for school difficulty (those whose mothers have less than a high school education, are single mothers or whose families have received or are receiving public assistance) less likely than children whose mothers have at least a high school diploma, who come from two-parent families and whose families have never utilized public assistance to accept peer ideas and form friendships.
- Reports of children's problem behaviors vary by race/ethnicity. The pattern of these differences and their magnitude depends on who is rating the children's behavior. When teachers rate the children in their classrooms, black children are more likely than white and Asian children to be seen as exhibiting higher levels of problem behaviors (arguing with others, fighting with others, getting angry easily). When parents rate their children, we see fewer differences between black and white children. Instead, we see more differences between Asian children and white, black and Hispanic children. Asian children are less likely than children in these other groups to be seen as arguing or fighting often to very often by their parents.

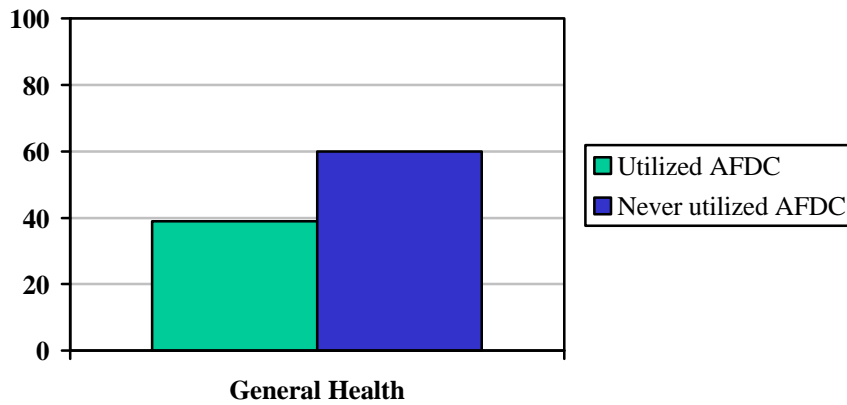
## **Physical Health and Well-Being**

Information on children's physicality helps untangle the diverse skill set children possess at entry to kindergarten. An important part of learning relates to children having enough rest, enough good foods to eat and good physical health (Kagan et al. 1995). The concept of physical health and well-being is broad; it not only includes a disease-free state but also having gross and fine motor skills appropriate to the child's age.

The average first-time kindergartner in 1998 was about 45 inches tall and weighed about 46 pounds. About 12 percent of boys and 11 percent of girls have a body mass index which classifies them as at risk for being overweight. Kindergartners are generally healthy (see figure B)—though their general health differs by their family type, the level of their mothers education and whether or not they utilized

public assistance (i.e., Aid for Families with Dependent Children). A small percentage of kindergartners are showing signs of developmental difficulty (e.g., high activity level, low attention span).

**Figure B.—Percentage of first-time kindergartners who are in excellent general health, by utilization of public assistance (Aid for Families with Dependent Children-AFDC): Fall 1998**



SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99, Fall 1998.

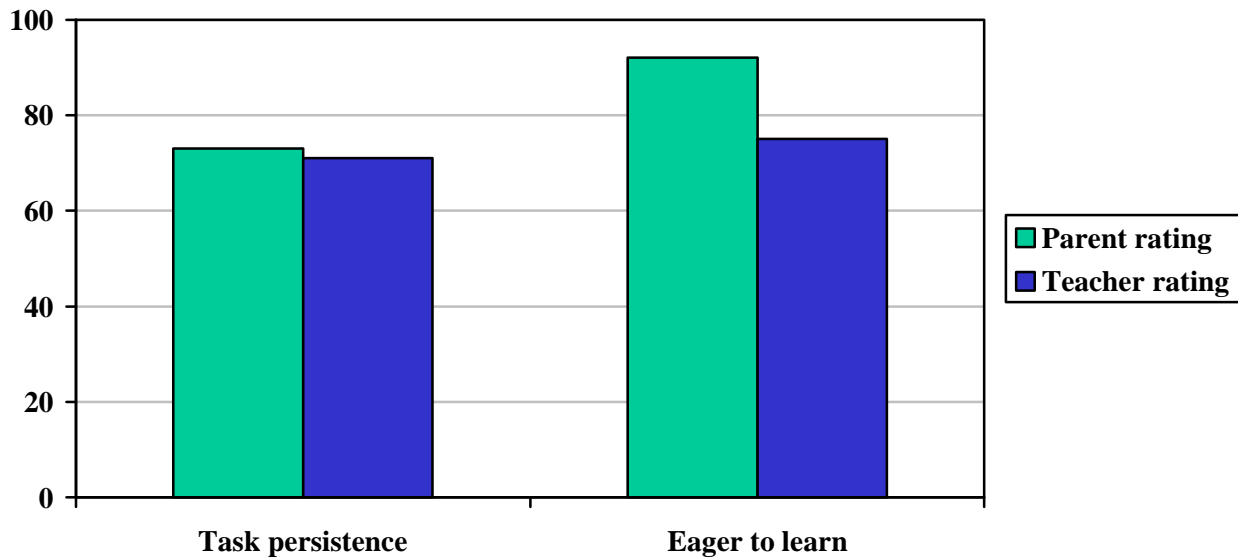
## Approaches to Learning

How children approach learning is central to their chances for success in school. Children’s learning styles reflect how they address the task of learning (Kagan et al. 1995). Children need to be able to persist at tasks, be eager to learn and be creative in their work. These characteristics tend to manifest themselves at a relatively early age, and children demonstrate diversity in their approaches and behaviors toward learning.

As children enter kindergarten for the first time, parents report that about 75 percent persist at tasks often to very often (figure C), about 92 percent seem eager to learn (figure C) and 85 percent demonstrate creativity in their work. Teachers are slightly more conservative in their ratings (figure C), reporting that about two-thirds to three-quarters of beginning kindergartners persist at tasks, seem eager to learn and are able to pay attention. Teacher ratings of kindergartners approaches to learning differ by child characteristics, such as their gender, age at entry, level of mother’s education and minority status.

- Both parents and teachers report that girls persist at tasks more often than boys, older kindergartners (born in 1992) persist at tasks more often than the younger (born September through December 1993) and children not at risk persist at tasks more often than children at risk for school difficulty (mother's education less than high school, single-mother and receipt of public assistance), except on the basis of home language.

**Figure C.—Percentage of first-time kindergartners teacher rate as persisting at tasks often to very often, by age of entry: Fall 1998**



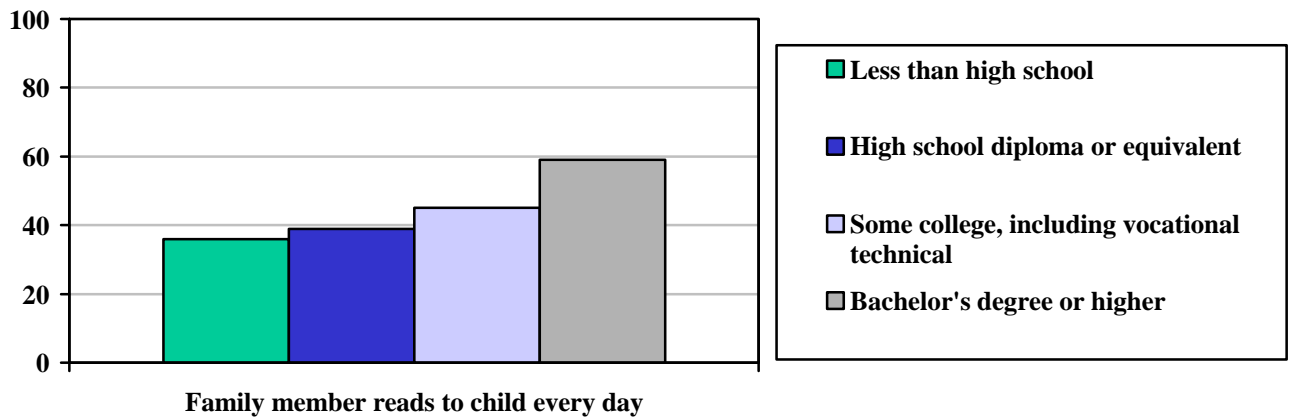
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99, Fall 1998.

## The Child and the Family

The nature and frequency of family interactions relate not only to children's development but also to children's preparedness for school. The frequency with which parents interact in positive ways with their children may indicate the investment parents make in their children's education. Home activities—such as reading to the child or interacting through play—are related to children's school preparedness and chances for success in school.

The majority of parents report having more than 25 children's books in the home, and more than half of parents report having more than five children's records, audio tapes or CDs in the home. Nearly half of parents report a family member reading to the child or singing songs with the child every day. Activities such as reading to children vary by level of mother's education (see figure D), family type, receipt of public assistance and minority status.

**Figure D.—Percentage of first-time kindergartners read to every day by a family member, by family type: Fall 1998**



SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99, Fall 1998.

As the labor force participation rate of mothers with young children has increased, the percentage of children receiving care from someone other than their parents has increased as well. In the 1990s, a large majority of children have been cared for on a regular basis by someone other than their parents prior



to entering first grade (West et al. 1992). Today, many kindergarten and primary school children receive before- and after-school care regularly from persons other than their parents (Brimhall et al. 1999).

Prior to starting kindergarten, about four out of five first-time kindergartners received care on a regular basis from someone other than their parents. Upon entering kindergarten, about half of children currently receive care on a regular basis before or after school from someone other than their parents. Both the care children received prior to kindergarten and their current care (e.g., relative, nonrelative, center-based) varies by characteristics such as level of mother's education and race/ethnicity status.

At kindergarten entry, children whose mothers have less than a high school education are more likely to receive before- and/or after-school care from a relative than from a nonrelative or center-based provider. In contrast, kindergartners whose mothers have a college education are more likely to receive care in a center-based setting than in either of the two home-based settings.

- At kindergarten entry, black children are more likely than white, Asian or Hispanic children to receive before- and/or after-school care.

## **Summary**

While first-time kindergartners are similar in many ways, this report demonstrates that differences exist in children's skills and knowledge in relation to their characteristics, background and experiences. The report adds to our understanding of the diversity of young children's skills and knowledge. Even as they are just beginning their formalized educational experience, children are different. They demonstrate differences in their cognitive skills and knowledge, social skills, health and approaches to learning, and bring with them differences in their home educational experiences and environments. This report is highly descriptive in nature, presenting a broad array of information on children's status as they begin their journey to school. Future reports based on the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), will take more analytical approach and examine specific issues more in depth. This report and future data from the ECLS-K will help to inform researchers, practitioners, educators, parents and policymakers on issues concerning young children's education during the elementary grades.

## **Future Directions**

The findings in this report bring to light some areas for further investigation and some interesting patterns emerge across domains. For instance, differences exist in parent and teacher perceptions of children's prosocial skills, problem behaviors and approaches to learning. Primarily, we presented the data by looking at parent perceptions in relation to child and family characteristics and teacher perceptions in relation to child and family characteristics. However, future analysis can compare the similarities and the differences in parent and teacher perceptions of the same child. For example, in terms of approaches to learning, specifically children's eagerness to learn, the racial/ethnic differences seem much greater in the teacher ratings than in the parent ratings in the aggregate.

Furthermore, in this report, we look at the constructs by a specific set of child and family characteristics (e.g., child's sex, age at entry, race/ethnicity, maternal education). Future reports can take a different perspective, and analyze the constructs in terms of additional family characteristics and school characteristics. For example, the data can be analyzed in terms of pre-school attendance, kindergarten program type (i.e., full day/part day) and school type (e.g., public/nonpublic). These types of analysis may have policy implications.