Research Information

Hearing On: "Are Our Children Ready to Learn?"

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Early Childhood Education: Critical Data Needs for a Critical Period of Child Development

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I. Introduction

Student achievement is a basic indicator of a nation's ability to produce educated citizens, and a predictor of how students will fare in the labor force once they leave school. Increasingly, we are coming to understand that what children achieve in school is related, to no small degree, to what happens before they even enter school. Early childhood education has become a critical area of focus for the education community and for the National Center for Education Statistics.

I will first briefly review the latest student achievement patterns and trends in mathematics, science, and reading, and then discuss some findings in the field of early childhood education that suggest that early childhood education has a strong impact on achievement and success in school. I will present examples of national indicators of early childhood development that are currently available and used in national monitoring reports, discussing both their value and their limited usefulness in informing us about what is most important to know about the backgrounds, experiences, and outcomes of young children. Finally, I will discuss the National Center for Education Statistics' Early Childhood Longitudinal Studies (ECLS) Program which will address many of these critical gaps in our knowledge about children at such a critical period of their development.

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II. Student Achievement in Elementary and Secondary Schools

A. National Long-Term Trends in Science, Mathematics, and Reading

Measuring students' academic performance has been the purpose of the National Assessment of Educational Progress (NAEP) since its inception in 1969. Students in both public and nonpublic schools have been assessed in various subject areas on a regular basis. In addition, NAEP collects information about relevant background variables to provide an important context for interpreting the assessment results and to document the extent to which education reform has been implemented.

NAEP enables us to monitor trends in academic achievement in core curriculum areas over an extended period of time. To do so, NAEP readministers materials and replicates procedures from assessment to assessment, always testing students in the same age groups (9, 13, and 17). In this manner, the long-term trends from NAEP provides valuable information about progress in academic achievement and about the ability of the United States to achieve its national education goals.

In general, over the past two and a half decades the NAEP long term trends in science and mathematics show a pattern of early declines or relative stability followed by improved performance. In reading, minimal changes have occurred over the assessment period.

Science. The overall pattern of performance in science for 9-, 13-, and 17-year-olds is one of early declines followed by a period of improvement (Figure A). Science scores have increased for all ages tested since 1982 and the publication of A Nation at Risk. Average scores at all three ages were higher in 1996 than in 1982.

Mathematics. The overall pattern of mathematics achievement for 9-, 13-, and 17-year-olds shows overall improvement, with early declines or relative stability followed by increased performance (Figure B). Further, the scores of 9- and 13-year-olds were significantly higher in 1996 than in 1973. As with science, mathematics scores have also shown an upward trend at all ages since 1982 and the publication of A Nation at Risk.

Reading. The overall trend pattern in reading achievement is one of minimal changes across the assessment years (Figure C). The performance of 9-year-olds improved from 1971 to 1980, but has declined slightly since that time. Thirteen-year-olds showed moderate gains in reading achievement; in 1996, their average reading score was higher than that in 1971. There was an overall pattern of increase in reading scores for 17-year-olds, but the 1996 average score was not significantly different than in 1971. Reading scores have remained fairly stable between 1984 and 1996, the time period immediately following the release of A Nation at Risk. No significant changes at any age occurred during this time period.

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B. Subgroups Performance on National Long-Term Trends

There are substantial gaps in the performance of whites and blacks, and whites and Hispanics in all three subjects assessed as part of the NAEP long-term trends: mathematics, science, and reading. In mathematics and science, those gaps have been narrowing somewhat since the publication of A Nation At Risk in 1983, while in reading, they have fluctuated but tended toward smaller gaps (Figure D).

Since A Nation at Risk, performance in science at ages 9 and 17 has been increasing more for black and Hispanic students than for whites. As a result, the gap between white and black student achievement has closed somewhat over this period; the gap between white and Hispanic students also narrowed, though this change was not statistically significant.

Average mathematics scores of black and Hispanic 17-year olds have also increased somewhat more than for whites since 1982. White students improved 9 points (on a 500 point scale); black students improved 14 points; and Hispanic students increased 15 points. The gaps between white and black students narrowed between 1982 and 1990, but has widened again through the 1990s. The gap between white and Hispanic students narrowed somewhat since 1982, though the change was not statistically significant.

Changes in reading were minimal for white, black, and Hispanic students at all ages during the years 1984 to 1996. As a result, the gaps between both white and black and white and Hispanic students in Reading since A Nation At Risk has remained about the same.

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C. International Comparisons of Mathematics and Science

NCES uses a combination of international and U.S. databases to look at the performance of our students. The combination of both types of data is required to see ourselves in a stereographic or parallel perspective. U.S.-only data is blind in one eye, and international data is blind in the other. Both types of data are necessary for a clear and an accurate view of our students' performance. The Third International Mathematics and Science Study (TIMSS) assessed student achievement in math and science at grades four, eight, and twelve.

Our students' international standing declines as students progress through school, according to TIMSS. Overall, U.S. fourth-graders scored above the international average in both science and mathematics. Our eighth-graders scored above the international average in science but below it in mathematics. In twelfth-grade, the scores of both our overall student population tested on general mathematics and science knowledge, and of our more advanced students tested in mathematics and physics, were well below the international average.

Figure E summarizes U.S. performance by content area on the fourth- and eighth-grade assessments.

In a study linking the results of the NAEP and TIMSS in math and science, it was found that there is considerable variability across U.S. states compared with other countries. The highest performing states have predicted means significantly higher than the TIMSS means of at least one-half of the countries, while the lowest performing states have predicted means significantly lower than the TIMSS means of at least half of the countries.

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D. International Comparisons of Reading

In 1991, the IEA* Reading Literacy Study assessed the reading literacy of fourth-graders (in 27 countries) and ninth-graders (in 31 countries). The underlying framework for this assessment paralleled the NAEP framework in that it too defined reading in terms of three text types - narrative, expository and document. In contrast to NAEP, this study painted a more positive picture of the reading literacy of American students (Figure F).

- American fourth-graders were outperformed only by Finland; U.S. students performed about the same as students from Sweden, while outperforming students from 24 other nations.
- American ninth-graders' performance was equivalent to that of students from 15 other nations; Americans outperformed students from 14 nations, while only the students from Finland did better than our students. 1

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E. Summary of Student Achievement Results

To summarize the academic performance of students based on national and international assessments:

- There has been a gradual increase in math and science achievement since the early 1980s;
- There has been little change in reading performance since the 1980s;
- Primary school students tend to perform above the international average in mathematics, science, and reading, but our international standing drops as students progress through higher grades.
- **The International Association for the Evaluation of Educational Achievement.** The difference between NAEP view of America's fourth-grade students' reading proficiency and that emerging from the IEA data may be attributed to two very important differences in these assessments. First, there are distinct differences in the way that the data are benchmarked. NAEP reporting is based on comparisons of student performance against a desired standard defined by NAGB. Second, the IEA test mainly asks students to recognize details and to make simple inferences and literal interpretations while the NAEP test goes further, i.e., requiring students to identify themes to detect the author's point of view, to make larger inferences, and to state a position with supporting citations from the text.
- There are substantial gaps in the achievement of white students and their black and Hispanic counterparts that persist, though the gap has narrowed somewhat for mathematics and science since the 1980s.
- There is considerable variability across states in performance on NAEP as reflected in the predicted standing of states in relation to TIMSS countries participating in the eighth grade assessment.

These findings have raised concerns about the state of U.S. educational performance; in particular the absence of substantial overall improvement over time, the large and persistent subgroup differences in academic achievement, the decline in performance relative to other countries as students progress through school, and the large variability in performance across states. Many people are becoming interested in children's earliest educational experiences as a possible means of improving the level of achievement as well as reducing its variability.

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III. Data on Young Children, Their Families, Early Care Programs and Schools

A. Importance of Early Childhood Experiences

There is increasing recognition that achievement in school is related to children's experiences prior to school. National assessments show that by fourth grade, there are already significant gaps in the achievement of black, Hispanic, and white children. Other studies demonstrate differences as early as the first grade. One study suggests that more than half of the gaps in achievement found between white and black 12th graders can be attributed to gaps that already existed at the beginning of first grade (Phillips, 1998). In a study comparing the average achievement of students in the top and bottom scoring schools in first grade, a 46-47 percentile point difference in achievement scores was found (Ralph, et. al., 1998).

Findings from research studies of children's brain development points to the critical importance of children's experiences during the first few years of life and the long-term effects these experiences have on children's development and learning. Cognitive ability is formed in a child's early years, and interventions that would increase that ability may be most effective at that point. In addition, some studies suggest a long-term positive effect of high quality early childhood programs on achievement and success in school.

Much of the recent public discussion on education has focused on the early years, children's development and learning during the early childhood period from birth to age eight, their preparation for formal school, the first school experience, and the progress they make over the first years of school. A number of important policy developments have contributed to this focus. The National Education Goal on school readiness reinforced the importance of children's early experiences for school success. President Clinton's 1997 State of the Union Address included the call for all children be able to read by the end of third grade; thus, emphasizing the importance of the literacy environment of children's homes and the primary grades in developing these critical skills.

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B. Current State of Early Childhood Data

Although both empirical research and new policy initiatives have placed greater emphasis on the early childhood years, there is little in the way of data to actually demonstrate what preschoolers know and can do, and what factors were related to these abilities. Instead, national studies and monitoring reports rely upon proxy measures of early childhood abilities, conditions, or experiences to assess early childhood development.

The National Education Goals Panel recognized the need to monitor five critical dimensions of children's growth and readinesss for learning in order for the nation to meet its National Education Goal 1, "By the year 2000, all children in America will start school ready to learn." They endorsed the development of an early childhood assessment system that would monitor physical well-being and motor development, social and emotional development, approaches toward learning, language usage, and cognition and general knowledge. Since such a system does not currently exist, the Goals Panel has presented proxy measures in its annual reports on progress towards the Goals. For example, included in the 1992 Goals report were: 1) prenatal care; 2) low birthweight births; 3) health care and health insurance coverage; 4) immunization; 5) child nutrition; 6) parent-child literacy and arts activities and outings; 7) preschool and nursery school participation; and 8) preschool quality. The Panel later developed a Children's Health Index, which measured the percentage of infants born with one or more health risks, including late or no prenatal care, low maternal weight gain, mother smoked during pregnancy, or mother drank alcohol during pregnancy.

In 1997, the Goals Panel issued a Special Early Childhood Report which reported on the latest data for the above indicators, and also included an indicator of parental participation in family support activities. They plan to issue another special report on early childhood in the year 2000.

The National Center for Education Statistics has launched an early childhood component in our National Household Education Surveys (NHES) of 1991, 1993, 1995 and 1996. These surveys have enabled us

to report to the nation regularly on such topics as access to early childhood education, characteristics of preschoolers, parent-child activities of preschoolers, and on the performance of children who delay entry into or repeat kindergarten. For example, in the 1993 survey, NCES reported the percentage of preschoolers with developmental accomplishments in the areas of literacy- numeracy, small motor skills, and their health status as reported by their parents. Literacy- numeracy measures included the ability to identify colors and letters, to count to 20, to pretend to read or read stories, and to write their names. Small motor indicators included the ability to button clothes, hold a pencil properly, and to write and draw rather than scribble. Some findings included (Figure G):

- 57 percent of all 4 year-old preschoolers could recognize most or all letters;
- 62 percent could count to 20;
- 78 percent could write or draw rather than scribble.
- 23 percent had a short attention span

The Federal Interagency Forum on Child and Family Statistics has used two indicators from the NHES surveys as proxy measures for early childhood education in its annual monitoring report on child well-being, America's Children: Key National Indicators of Well-being. The first indicator is: Family Reading to Young Children, which measures the percentage of children ages 3 to 5 who were read to every day by a family member. Reading to young children has been found to promote language acquisition and correlates with literacy development and later on, with achievement in reading comprehension and overall success in school.

In 1996, 57 percent of children ages 3 to 5 were read aloud to by a family member every day in the last week, up slightly from 53 percent in 1993. (Figure H)

The second indicator in the Forum report is Early Childhood Education, which measures the percentage of children ages 3 to 4 who are enrolled in preschool or early childhood centers. Participation in an early childhood education program can provide preschoolers with skills and enrichment that can increase their chances of success in school. Studies have demonstrated that participation in high-quality early childhood education programs can have short-term positive effects on IQ and achievement, and long-term positive effects on low-income minority children's school completion.

53 percent of children ages 3 to 4 yet to enter kindergarten attended center-based early childhood programs in 1996. While there has been an increase in participation among children living above the poverty line from 54 percent in 1991 to 58 percent in 1996, participation has been stable at 41-42 percent among those living at or below poverty (Figure I)

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C. Need for Better Early Childhood Data

These basic measures from the NHES surveys of the 1990s as well as the Goals Panel Indicators have provided an important first national picture of preschoolers experiences and cognitive development, and pointed out the tremendous variation in background that young children bring with them to kindergarten. Continually monitoring changes in the population entering school through data collections of this type is particularly important given how this population has undergone major recent changes. The early

experiences of children born in the 1990s differ in important ways from those of children born in previous decades. They are more likely to live in young, female-headed, single-parent families, to live in poverty, and to live in households where English is the secondary language. These changes contributed to erosion in the economic and social capital available to nurture children and could therefore place them at increased risk of school failure.

However, while certainly of value, such data are also limited because they don't contain direct information about the mechanisms by which children's social, intellectual, and emotional development are affected by their family and school environments. Many researchers and policy makers have pointed out that adequate information of this type is absolutely essential to address the many complex decisions the Nation faces concerning appropriate policies and practices for the care and education of our children. Data are especially needed to address questions in four key areas: 1) school readiness, 2) children's transitions to child care and early education programs, kindergarten and first grade; 3) the relationship between children's kindergarten experience and their elementary school performance; and 4) children's growth and development during the early childhood years.

Examples include the following:

School Readiness

What early literacy, cognitive knowledge and skills, social behaviors and physical motor skills do children demonstrate as they enter kindergarten and first grade? How much variation is there in the knowledge, skills and behaviors children demonstrate as they enter school for the first time? Do the knowledge, skills and behaviors children demonstrate differ by race/ethnicity, socioeconomic status, family structure, and other child and family characteristics?

What characteristics of children, their families, out-of-home care and educational experiences during the years prior to school influence the knowledge, skills, and behaviors they demonstrate at entry to kindergarten? What characteristics of the in-home and out-of-home child-rearing environments during the first five years are most important in determining children's readiness for school?

What role do fathers play in early childcare and child rearing and how does their involvement with their children and the family relate to children's school readiness? What role do residential and non-residential fathers play? What contributions do fathers make to children's preparedness for school that are independent of mothers' contributions?

How are children's early health care and health status, including prenatal care and pregnancy outcomes (e.g., low birth weight and premature birth), hospitalizations, illnesses, disabilities, injuries, and access to health care related to their readiness for school?

What resources (family, school, and community) are available to children as they enter school for the first time? What are the relationships between resources and children's school readiness?

Transitions to Child Care and Early Childhood Programs, Kindergarten and First Grade

When do children receive first regular care from someone other than their parents? What are the

characteristics of this care? How do parents make choices in determining both the timing of this child and the nature of the child care arrangements?

What affect, if any, does the timing, the types of arrangements chosen, the timing of mother's return to work and her balancing of work and home life demands have on children's growth and development, children's health status, and the family's well-being?

Do children who receive regular care from persons other than their parents have more difficulties than do children who are cared for only by their parents? Do the problems children experience vary by the type of care children receive, the timing of this care and important characteristics of children and their families?

What problems do children have adjusting to kindergarten? Are these problems related to characteristics of children's preschool and kindergarten programs? Do certain groups of children experience more problems than others? Do children who have trouble adjusting to kindergarten experience similar problems adjusting to first grade and later grades?

Kindergarten and Elementary School Performance

Do children who attend full-day versus half-day kindergarten programs perform any differently during kindergarten and in first grade? What effect do these program types have on children's social development and academic achievement? Do these differences persist after first grade?

What effects does class size have on children's academic performance and behavior during kindergarten, first grade and beyond? Is the effect the same for different groups of children?

What is the relationship between the time spent on particular subjects/topics, or on specific activities or topics within subjects and children's reading and mathematics achievement during kindergarten and beyond? Do children whose teachers emphasize group versus individualized instruction perform any differently in reading and mathematics?

Do children whose parents held them out of kindergarten do better, worse or about the same as children who entered kindergarten on time? Are the advantages or disadvantages the same for males and females?

Do children who repeat kindergarten or first grade do as well as other children, or do they experience more difficulties in later grades? What factors seem to account for whether they continue to have difficulties after the retention occurred?

What is the relationship between parental involvement in kindergarten and their involvement in first grade and later grades? Do parents maintain similar levels and types of involvement? Does their children's performance in school influence their continued involvement?

Children's Growth and Development

What are children's competencies and skills at different ages during the first six years of life? What are most children in the United States able to do in the domains of physical, cognitive, social-emotional and language development at key points during these first years of life?

What are the levels and rates of cognitive growth over time for different groups of children? What characteristics of children, their families, and their child care providers and early education programs are associated with different levels and rates of growth?

Which groups of children seem to have more developmental and academic difficulties and which groups seem to have fewer of these difficulties and more accomplishments?

What is the outlook for those children who experience early difficulties and how do family resources, early interventions, early childhood programs, health promotion and prevention programs, and school programs enhance the rates of growth and development for these vulnerable children?

What are the rates of growth in mathematics, reading, and science achievement during grades K through 5? Do gains in achievement persist over the summer months? What school, classroom, and home factors contribute to differential rates of growth?

When do we first see the gap in the mathematics, reading, and science achievement? What is the relationship between the gap that exists at kindergarten or first grade and the gap at fourth grade?

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D. New National Longitudinal Studies of Children

The National Center for Education Statistics (NCES) has developed a new data collection program to address many of the data gaps identified above. This program is comprised of two national longitudinal studies of children. The Early Childhood Longitudinal Study, Birth Cohort 2000 (ECLS-B) will draw a nationally representative sample of 15,000 births in calendar year 2000 and follow these children at regular intervals from birth until they reach first grade. The Early Childhood Longitudinal Study, Kindergarten Class of 1998-2000(ECLS-K) began collecting data from a nationally representative sample of 23,000 kindergartners in the fall of 1998 and will follow these children at regular intervals through fifth grade.

The two longitudinal studies that comprise the ECLS program will provide new information to decision-makers, educational practitioners, researchers, and parents about the ways in which children are prepared for school and their readiness to take on the challenges of school. They will provide new data on the progress children make during the early school years and on how families, early childhood care and education programs, schools, and communities affect the lives of the nation's children. Many of the complex decisions the Nation faces concerning the care and education of our children require valid and reliable data on children, their families, schools, and early care and education programs. The ECLS program will provide these data.

There is currently no study that follows a national sample of children from birth through the early

formative years, to school, and through the early elementary grades. The ECLS will join similar studies being conducted in Canada and Great Britain. Few existing national databases permit the study of children's early learning experiences, their transition to school and their early school experience by race-ethnicity, gender, region, etc. Most research on children's early education and learning has been conducted on small, often nonrepresentative samples of highly targeted populations (e.g., disadvantaged inner-city African American children).

For the first time, national data will be available on public and private kindergarten programs and the children who attend them. A goal of the ECLS is to describe accurately the diversity of the nation's children and their families, and the programs that serve them. Such information is critical to establishing policies that can respond sensitively and creatively to this diversity.

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IV. The Early Childhood Longitudinal Studies Data Collections: The Emerging Vision

A. Key Study Areas

The four key areas of inquiry into early childhood education previously identified -- 1) school readiness, 2) children's transitions to child care and early education programs, kindergarten and first grade 3) the relationship between children's kindergarten experience and their elementary school performance; and 4) children's growth and development during the early childhood years -- will each be addressed by the ECLS.

The two ECLS cohorts, separately and jointly, will be used to study one or more of these areas. The birth and kindergarten cohorts will be used as the major sources of information on school readiness. The birth cohort will be used to study children's transitions to childcare and early education programs and, along with the kindergarten cohort will be used to study children's transition to kindergarten. The critical transition from kindergarten to first grade will be studied through the kindergarten cohort. The kindergarten cohort will be used to examine the relationship between children's kindergarten experience and their elementary school performance. And the study of children's growth and development in critical domains that are important to school success will rely on data from both cohorts. General approaches to these study areas are outlined below:

School Readiness. Some children seem to adjust to their first encounter with formal school and are able to have a positive school experience while other children experience problems. For most children, the first formal school experience is kindergarten2. However, the kindergarten experience is not the same for all children. While 98 percent of children nationwide attend a kindergarten program prior to first grade, 40 percent of children attend full-day programs and 58 percent part-day programs. Attendance in public school kindergarten programs is about six times that of private school programs. Within these program types, and even within the same schools, curricula and instructional practices are expected to vary widely.

The ECLS has adopted a conceptual model of school readiness that is consistent with the one set forth by the National Education Goals Panel, Goal One Technical Planning Group. Thus, school readiness is conceived as being multidimensional and continuous. Children may have more or less of each of the

skills, experience, and knowledge that increase their chances of having a positive school experience. Children who are relatively weak in one area may or may not be weak in others. NCES anticipates that the Goals Panel will use data from the ECLS to report on Goal One, School Readiness.

The ECLS program will examine children's preparation for school and will seek to describe the ways in which children's preparation for formal schooling is related to different characteristics of children, their families, out-of-home care and educational experiences, and the kindergarten programs that they attend. The study is particularly interested in the role that parents/family play in helping prepare children for formal school, and in the effects of children's participation in early care and education arrangements. However, in order to understand children's preparation for school, it is critical to understand how the educational system prepares for and responds to children who enter its doors for the first time.

Throughout this paper, children's first entry to school is considered to be Kindergarten. It is recognized that children may have had a variety of organized group and program experiences prior to kindergarten.

Consequently, the ECLS will pay particular attention to how schools and kindergarten programs respond to the backgrounds and experiences children bring with them as they enter school for the first time.

Normative data about children's competencies and skills at school entry and the variations in these competencies and skills will be used by program developers to meet better the needs of children. This information will be of valuable to both schools and early childhood programs and can be used to help prepare teachers. Information on the effects of the resources (financial, social, and emotional) fathers' contribute to their children and families will be useful to a variety of programs that target the family as a part of its intervention strategy. Findings pertaining to the home and program influences for different populations of children will help to better serve low income, minority, language minority, and disabled children. Data on the health status of children over time and its relationship to health care access and health insurance coverage will be used to evaluate how best to serve the health care needs of the nation's children.

Transition to ChildCare and Early Childhood Programs, Kindergarten and First Grade. Children and adults are constantly making transitions from one status to another. Of particular interest to the ECLS program, is the transition that occurs as young children go from being cared for exclusively by their parents to the care of other persons. For some children, this transition may occur shortly after birth, while for others, their first significant experience with adults other than their parents in a regular care and educational setting may be when they enter school for the first time. Other transitions of particular interest are the transition to a group-based early childhood program, from preschool to school, and from kindergarten to first grade. The ECLS is especially interested in looking at these transitions and their impacts on different groups of children and families defined by race/ethnicity, socioeconomic status, language minority status and family structure (e.g., single-parent families and teenage mothers).

The ECLS will provide information on why some parents take advantage of services (e.g., health care and health insurance, Head Start) they are entitled to while other's do not. The study will also provide early childhood programs and schools with information on how they might work together to ease the transition to school for children. Findings pertaining to the relationship between children's age at entry to school and their adjustment to school will provide school districts with important information on which to

evaluate the merits of different cut-off dates for kindergarten entry.

Kindergarten and Elementary School Performance. A central issue for the ECLS is the relationship between children's kindergarten experience and their school performance in grades 1 through 5. A goal of the program is to provide descriptive information on children during kindergarten, as they move out of kindergarten and into first grade and throughout the elementary school grades.

The study will focus on student achievement during these years as well as other measures of student performance (e.g., grade retention). By closely monitoring student performance, the study will provide useful information on when children begin to experience problems with their schoolwork and the circumstances surrounding these difficulties. The study will provide useful information on the longevity of problems and the response of the child's family, school, and teacher to problems.

Data from the ECLS will provide states, school districts and schools with important information to guide decisions on how to best structure their kindergarten programs and classrooms. Findings pertaining to differences in social skills and behaviors and academic performance of children in full-day versus part-day programs will be particularly useful as these decision makers consider how to structure their kindergarten programs. The ECLS will also provide information on the effect of class size on children's social development and academic performance during the kindergarten year and whether this effect is the same for different populations of children. Again, this will be valuable information to decision makers as they make evaluate how best to use their fiscal and human resources.

Children's Growth and Development. The ECLS is especially interested in children's development during the critical years before school and during the first years of school. A major goal of the study is to monitor children's growth and development during these years. The proposed study seeks to understand better children's physical, social, emotional, and cognitive development as they relate to important influences in their lives.

The ECLS will provide information about learning that occurs during the school year and contrast that to learning that occurs during the summer months. School districts will use this information as they consider the alternative school calendars and extending the school year. They will also use this information to inform decisions regarding summer programs. The normative information that the ECLS will provide on children's rates of cognitive growth and language development during the critical early years will be used to programs that target special needs children (e.g., disadvantaged children, language minority children, disabled children). It will be used to better target services to the particular needs of these children.

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B. Overview of the Study Designs

Both the ECLS-B and ECLS-K will draw nationally representative samples of children. The samples of both studies will consist of children from different racial-ethnic and socioeconomic groups. The two samples are designed to support separate estimates and analyses of African American, Hispanic, white, and Asian and Pacific Islander children, as well as children from different socioeconomic levels. The ECLS-K will also support analyses of public and private school kindergartners. The ECLS-B sample is

designed to support the independent analysis of moderately low, very low and normal birth weight infants and to facilitate the analyses of twins. Both studies will collect data from the child, the child's parents/guardians, teachers or other care providers, and schools. With the permission of their parents, children participate in activities designed to measure important cognitive and non-cognitive outcomes. Parents/guardians are interviewed and serve as an important source of information about the families and children in the studies. Teachers and nonparental care providers, like parents, represent a valuable source of information on the children in their care and the children's learning environments. School administrators, principals, headmasters, and center directors provide information on the physical and organizational characteristics of the schools and programs ECLS children attend.

The ECLS-K will collect data twice during the kindergarten year—once in the beginning and once near the end of the school year. In the fall of the 1999-2000 school year, when most of cohort will have moved on to the first grade, data will be collected from a 25 percent subsample of the cohort. Assessments will be conducted with these children, and interviews will be conducted with their parents. In the spring, data will once again be collected from the entire sample, their parents, teachers, and school administrators. Additional follow-up surveys are planned for the spring of 2002 (third grade) and spring of 2004 (fifth grade).

Children in the ECLS-B will be selected from birth certificates and followed longitudinally through first grade. The first data collection will occur when the children are approximately 9-months old followed by a second data collection at 18-months. The interval between subsequent data collections has not been finalized but will occur roughly every 12 to 18 months. The exact timing of additional waves will be affected by other design decisions, the analytic goals of the study, and a variety of operational and cost considerations.

Special Populations. One of the goals of the ECLS program is to be as inclusive as possible. As a result, several efforts are being made to include all sampled children in the study to the fullest extent possible regardless of their background, English language ability, and disability status. The direct assessments that are being used in the studies, by their very designs, will accommodate the majority of children sampled. Furthermore, for those children who cannot complete the direct assessment, the full range of data from the other data collection sources (i.e., parents, teachers, child care providers and school administrators) will still be gathered. In the ECLS-K, any child whose home language is Spanish and does not have the English skills necessary to participate in the ECLS-K assessment battery is administered a modified version of the battery. At this time, the exact procedures of the ECLS-B have not been established.

Over the lives of the studies, children will be identified as having a disability that affects their learning. The untimed and one-on-one nature of the ECLS assessments will allow most of these children to participate in all or most of the direct assessments. ECLS staff will make every effort to include the other children. NCES has and will continue to work with the Office of Special Education Programs to identify the accommodations that are permitted and feasible.

ECLS Partners. A number of federal agencies have participated in the design of the ECLS-K and ECLS-B and are providing financial and/or staff support for these studies. Their involvement has enriched the ECLS program and expanded the types of questions the ECLS will address and extended the usefulness of the data beyond NCES and its traditional clients.

The Office of Special Education Programs of the U.S. Department of Education is supporting the collection of more extensive data on children with disabilities, their programs and the services they receive. The U.S. Department of Agriculture is supporting the measurement of children's height and weight at regular intervals and the collection of data on children's participation in breakfast and lunch programs at school and child care programs, families' food sufficiency, and infant feeding practices. The Administration for Children, Youth and Families of the Department of Health and Human Services is supporting activities to enhance the validity of Head Start participation data. The National Institute for Child Health and Human Development (NICHD) is supporting the collection of fall first grade data that will be used to study the learning that occurs over the summer months and to identify more accurately the effects of school and the home on children's achievement. NICHD is also supporting oversamples of moderately low and very low birth weight infants and twins, and the collection of data from fathers about their involvement in the lives of their children. The National Institutes of Health, in conjunction with NICHD, is supporting the collection of data on children's health status and child and family health behaviors and practices. The National Center for Health Statistics is providing the birth certificate sample for the ECLS-B and its staff's health expertise.

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REFERENCES

Phillips, Meredith, 1998. "How to improve our understanding of ethnic difference in academic achievement: empirical lessons from national data." Paper presented to the NCES conference, "Analytic Issues in the Assessment of Student Achievement." November. Washington, DC.

Ralph, John; Mary Frase; James Crouse; and William Thompson. 1998. First Graders Achievement in Top and Bottom Schools. Issue Brief. January. NCES 98-041. Washington, DC: U.S. Department of Education

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