B. Transitions

CHAPTER 11

The First-Grade Transition in Life Course Perspective

DORIS R. ENTWISLE
KARL L. ALEXANDER
LINDA STEFFEL OLSON

A life course perspective prompts a decided shift in how sociologists have traditionally approached issues of schooling and educational attainment. The core assumption of life course theory—that developmental processes and outcomes are shaped by the life trajectories children follow—has increasingly focused attention on cultural differences and socioeconomic variation in school outcomes and redirected attention to the *process* of schooling. Children, like adults, are socially organized in ways that have strong implications for their life experiences, including those in school. A life course perspective makes it natural to think about life transitions as turning points, and about the social basis of change and continuity through the successive phases of life (see McLeod and Almazan, this volume).

The beginning school transition is a timed life event critically important for children's future development because it marks the start of a life trajectory that encompasses both schooling and work careers. For example, how does delaying the first-grade transition (academic red shirting) affect children's subsequent progress in school? Children who are older when they start school will have higher test scores than their younger classmates and probably will be taller and heavier too. But the consequences of redshirting are not limited to what happens in first grade—they echo down through the years. These children on average will go through puberty earlier than their classmates. Throughout their school careers redshirting will change children's social

DORIS R. ENTWISLE, KARL L. ALEXANDER, AND LINDA STEFFEL OLSON • Department of Sociology, Johns Hopkins University, Baltimore, Maryland 21218-2685.

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contexts in ways that could affect their academic growth. For example, teachers' and parents' expectations are often based on children's physical size, with taller children expected to be more competent (Brackbill & Nevill, 1981). Parents and teachers take actions in line with the perceived competence of children, such as providing the taller or bigger ones with more social responsibility than they would otherwise. By one critical action, delaying school entry, the child's social context is shifted significantly not only at that point but from that time forward.

This chapter begins by emphasizing the social embeddedness of the first-grade transition, and then summarizes evidence about the low achievement levels and difficulties of adjustment that disadvantaged children experience. It underscores the greater importance of time spent in school compared to chronological age in predicting children's progress over the transition. Connections between children's success in first grade and long-term outcomes like dropout and the likelihood of adult employment are emphasized. The chapter concludes with some policy suggestions about preschools and summer school for disadvantaged children. Throughout, the importance of trajectories and the overlap of developmental contexts (families, neighborhoods, and schools) are central themes.

We start by describing particulars of children's first grade experience.

THE SOCIAL EMBEDDEDNESS OF THE FIRST-GRADE TRANSITION

The first-grade transition is profoundly social in nature. It signals the move from being a "home child" to being a "school child." This move is a big change, for one reason, because preschools and kindergartens are discretionary with caregivers directly answerable to parents. At the end of the preschool day parents often get a tally of the child's meals, bumps, naps, and problems. By contrast, first grade is not under parents' control in that way. Grade school is legally compulsory, the atmosphere is formal, and parents are not expected to make surprise visits. Teachers have authority over the child during the school day and jealously guard their prerogatives. Direct communications between teachers and parents are relatively infrequent and mostly in written form.

The first-grade transition is an especially bumpy ride for "at risk" children because the differences between home and school, for those brought up outside the middle-class mainstream, are dramatic. The conventions of the school—its achievement orientation, its expectation that children will stay on task and work independently, its tight time schedule, its use of network English, its insistence on punctuality, and its frequent evaluation of children—all can be daunting. Children are evaluated *with respect to their classmates* rather than with respect to their own prior standing as was true before they began first grade. Before they start formal schooling, children are evaluated mainly with respect to their own past performance—as bigger this year than last, for example. Failure thus becomes a real possibility in first grade. Moreover, in many classrooms where teachers and children do not share the same social or ethnic background, even classroom language can be ambiguous. When the teacher uses mitigating forms such as "I'd like you to do …" she means "DO IT," but this meaning may not be inferred by a student whose sociolinguistic background differs from that of the teacher.

The Student Role

The formal student role that children assume when they start first grade is one that youth occupy for many years. Any doubt that children's earliest performance in this role matters is

fast fading. From the Beginning School Study (BSS) in Baltimore,* which has followed nearly 800 children from age 6 (1982) to the present, we know that educational attainment and even job status in young adulthood can be predicted partly on the basis of first grade performance. BSS children who participated more often in class during first grade were more likely to go on to post-secondary education, even with family SES, standardized test scores, and many other factors controlled (Entwisle, Alexander, & Olson, in preparation). Even first-grade work habits mattered, because good work habits in first grade boosted the odds of employment in young adulthood, again after taking account of other key factors listed above.

In light of the foregoing, it is worrisome that elementary schools are organized to parallel so closely the social fault lines in the larger society. At the time of the first-grade transition, which coincides with a rapid spurt in cognitive growth, children tend to be surrounded by others who are more like themselves than the rest of society. The "common school" is in fact socially patterned. In relatively affluent neighborhoods, children starting school have higher test scores than children starting school in less affluent neighborhoods (Entwisle, Alexander, & Olson, 1997). The Baltimore study shows that children's marks, standardized test scores, and reading group assignments in first grade shadowed their social addresses (Entwisle et al., 1997; Entwisle & Alexander, 1993).

Marks

To be more precise, the BSS, which traced the school experience of a representative group of 6-year-old Baltimore children starting in 1982, found that in high-SES schools, children's first reading marks were a little above a C (2.15) (see Table 11-1). In low-SES schools, children's first reading marks averaged 1.64 (below a C) and in these schools almost no one received a mark higher than a C. In fact, in a school where 88% of students were on subsidy, all BSS students in that school received a failing mark in the first quarter of first grade. Such wide disparity in the marks first graders received has to be weighed in light of the fact that the children in the low-SES schools made gains on standardized tests in reading and math over first grade (September to June) just as large as the gains made by children in the high-SES schools (see Table 11-2). (See Entwisle and Alexander, 1992, 1994; Entwisle, Alexander, and Olson, 2000, 2001.) For example, during the school year (winter) students in the low-SES schools averaged a 41.3 point gain in reading CAT scores over the first 5 years of school, compared with a 37.9 point average gain for the students in the high-SES schools. A similar pattern exists in math CAT scores (see bottom, Table 11-2). This equivalence in achievement gains, however, was not reflected in the reading and math marks students received. Simply put, children were marked in terms of where they started school, not in terms of how much they gained over the school year (see Figure 11-1 and Table 11-2).

*This research is a prospective longitudinal study of children's academic and social development beginning in first grade and continuing through high school graduation and up to age 22/23. Data collection began in 1982 and is ongoing. In 1982 a two-stage random sample of youngsters beginning first grade in the Baltimore City Public Schools was selected for study. First, a sample of 20 schools, stratified by racial mix (6 predominantly African American, 6 White, 8 integrated) and by socioeconomic status (14 inner city or working class and 6 middle class) was selected. Second, within each school students were randomly sampled from every first-grade classroom by using kindergarten lists from the previous spring supplemented by class rosters after school began in the fall. Parents' permission was obtained for 97% of the children so chosen, resulting in a final sample of 790 youngsters beginning first grade for the first time in 1982. See Entwisle, Alexander, and Olson (1997) *Children, schools, and inequality*, for an overall presentation of the Beginning School Study (BSS) and for more information on the study design and procedures.

Table 11-1. Ratings of Children's First-Grade Performance by Socioeconomic Status (SES) Level of School (Baltimore Beginning School Study)

	SES level of school, fall 1982 (% Meal subsidy)[a]				
	Low SES[c]			High SES[c]	
	Mean	SD	t-test	Mean	SD
Reading mark, Qtr 1	1.64	0.58	*	2.15	0.74
Reading mark, Qtr 4	1.94	0.73	*	2.65	0.95
Math mark, Qtr 1	1.99	0.75	*	2.52	0.85
Math mark, Qtr 4	2.26	0.86	*	2.88	0.90
Proportion retained, Year 1	0.23	0.42	*	0.12	0.31
Reading instruction level, Qtr 1[b]	1.93	0.51	*	2.21	0.80
Reading instruction level, Qtr 4[b]	3.69	1.12	*	4.29	0.96

[a]Percent of children on meal subsidy in each school used to define SES level of school. The 20 schools are divided into "low SES" (10 schools with highest meal subsidy rate) and "high SES" (10 schools with lowest meal subsidy rate).
[b]1 = readiness; 2 = preprimer; 3 = primer; 4 = level 1; 5 = level 2; 6 = level 3.
[c]For low-SES schools, sample sizes range from 355–405; for high-SES schools, sample sizes range from 332–349.

Table 11-2. Seasonal Test Score Gains in Reading and Math for Years 1 through 5 by Average Meal Subsidy of School[a] (Baltimore Beginning School Study)

	Winter gains			Summer gains		
	Low-SES Schools (n = 10)	t-test	High-SES Schools (n = 10)	Low-SES Schools (n = 10)	t-test	High-SES Schools (n = 10)
Reading						
Year 1	59.9		61.7	−7.3	*	12.0
Year 2	50.6	*	38.8	−5.5	*	8.7
Year 3	33.8		31.3	−0.5	*	11.4
Year 4	36.5		32.2	4.4		5.4
Year 5	25.5		25.7	0.4		−1.5
Average	41.3		37.9	−1.7		7.2
Math						
Year 1	50.4		47.1	−7.7	*	5.3
Year 2	43.6		41.6	−6.1	*	3.1
Year 3	35.2		36.9	1.0		−0.5
Year 4	32.0		36.3	5.6		4.0
Year 5	25.0		29.4	−0.4		3.0
Average	37.2		38.3	−1.5		3.0

*p 0.05.
[a]Percent of children on meal subsidy defines SES level of school.

Marks are an especially important kind of feedback because report cards are public and come out frequently. Classmates as well as family often see them. In Baltimore, even though standards and curricula were uniform throughout the school system, marks reflected minority group membership. Allowing for standardized test scores and family background, which

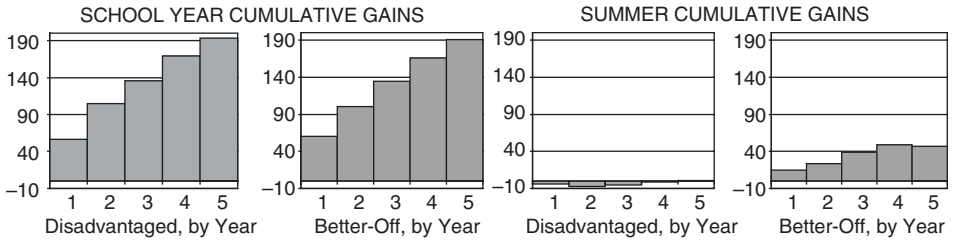

Figure 11-1. Cumulative gains during the school year and summer.
*Cumulative gains on California Achievement Test in reading over elementary school years and summers. Sample consists of Baltimore Public School students who entered first grade in 1982. Test "scale scores" are California Achievement Test Scores calibrated to measure growth over a student's 12-year school career.
Source: Doris Entwisle, Karl Alexander, and Linda Olson, *Children, Schools, and Inequality*, Table 3-1.

were measured *before the first marking period*, we find that African-American children got lower first-grade marks than whites did in both reading and math. The race difference in marks increased over the first-grade year from about one third of a standard deviation to about half a standard deviation (Entwisle & Alexander, 1988). These mark disparities associated with race emerged even though race differences in these children's scores on standardized tests at the beginning of first grade were small or negligible. (Such parity in beginning test scores is in agreement with other reports. See Ginsburg & Russell, 1981 and Tizard, Blatchford, Burke, Farquhar, & Plewis, 1988.) Social patterning in ratings of children's early academic performance is not surprising, but to have such comparisons for a randomly selected group of children right at the start of school is rare. The "invisible hand" of racial discrimination begins to sort individuals very early in life.

Test Scores

In beginning test scores, differences by race in the BSS sample, as just noted, are negligible but differences across SES levels are considerable—from a third to almost a full standard deviation depending on the specific comparison (Entwisle & Alexander, 1990). Preschool and kindergarten attendance were both strong predictors of higher test scores at the beginning of first grade. Just over half of BSS children (51.4%) attended some kind of out-of-home care prior to kindergarten. Those who did attend had significantly higher standardized test scores when they started first grade (with race, sex, and parents' educational attainment controlled, Table 11-3). For example, students with pre-kindergarten experience began first grade with CAT scores more than 5 points higher than those without pre-kindergarten.

BSS children who had *more* kindergarten (full day as compared to half day sessions) also had higher test scores (8 points verbal, 5 points math) when they started first grade, with race, sex, parents' educational attainment, and pre-kindergarten experience controlled, and these separate effects of pre-kindergarten and kindergarten are about equal in size (see Table 11-3). Both kinds of preschool also predicted lower absence rates over first grade and the children with fewer absences gained more on standardized tests of reading over first grade (see Entwisle, Alexander, Pallas, & Cadigan, 1987), so preschool and kindergarten attendance as well as out-of-school learning opportunities contribute to these SES differences in first-grade performance (Entwisle & Alexander, 1988). National data likewise show that fewer preschoolers

Table 11-3. The Influence of Preschool and Kindergarten on First-Grade Performance

Independent variables	Fall California Achievement Test		Absence, grade 1
	Verbal	Math	
Sex (1=Female)	2.276 (0.037)	−1.279 (−0.025)	1.620+ (0.069)
Race (1=African American)	−3.073 (−0.049)	−7.380* (−0.144)	0.562 (0.024)
Parent's educ. attain.	3.379* (0.279)	2.903* (0.291)	−0.464* (−0.102)
Prekindergarten	5.732* (0.093)	5.126* (0.101)	−1.787* (−0.077)
Amount of kindergarten	7.751* (0.137)	5.301* (0.114)	−2.800* (−0.131)

Standardized coefficients are in parentheses next to metric coefficients.
*p 0.05.
+p 0.10.

in families below the poverty line recognize all the letters of the alphabet compared to those in families above the poverty line (10% vs. 28%) (Nord, Lennon, Liu, & Chandin, 1999).

Seasonal Trends

Children in the Baltimore panel who were economically disadvantaged thus started school with initial achievement scores below those of classmates whose families were better off and got lower marks in first grade, but over that first school year (when school was in session from September to June) *those who were of relatively low SES gained just as much on standardized achievement tests as did those of higher SES* (see Entwisle et al., 1997). Still, and despite this parity in achievement gains when schools were in session, over the summer after first grade when they were *out of school*, children's gains were decidedly unequal. In summer when school closed, differences in achievement associated with family economic level were striking (see Figure 11-1 and right half of Table 11-2). Then the children from more advantaged homes moved smartly ahead while those from poorer homes did not gain or even regressed a little. These differences are particularly striking in the first 3 years of school. For example, in the summer after first grade, students in the low-SES schools *lost* an average seven points in their reading CAT score while students in high-SES schools gained 12 points.

The seasonal trends in children's reading and math scores over the first 5 years of school show that during winters, when children attended school, SES background made little or no difference in achievement gains. On average richer and poorer children gained the same amounts. In summer, however, children's SES backgrounds made a considerable difference—the more advantaged continued to gain but the less advantaged did not. These disparities in summer gains were cumulative—over the 5 summers low-SES students lost 8.5 points while the higher-SES groups gained 36 points, a total disparity of 44 points. Furthermore, the psychological capital of high-SES parents potentiated effects of SES (see Entwisle, Alexander, & Olson, 2001). As a consequence, when winter gains and summer gains are added together, children's gains on standardized tests over elementary school vary directly with their families' economic resources (see Entwisle et al., 1997). Those whose families had more resources started school with somewhat higher test scores, so relatively small differences among children of various SES levels existed from the start. Then, the longer children were in school, the wider the gap, because children progressed at different rates in summers when school was

closed. Large seasonal differences in test score gains like those seen for Baltimore first-graders are found in other localities as well (Murnane, 1975 in New Haven and Heyns, 1978 in Atlanta).

Most research on schooling focuses on children at or above third grade (by then most children have rudimentary reading skills), even though by then the rapid spurt in children's cognitive growth between ages 4 and 8 has passed. Actually, the number of points children gain on standardized tests diminishes each year (Entwisle & Alexander, 1996; Schneider, 1980), so effects of social inequality on development appear largest in the primary grades. The deceleration in children's cognitive growth over middle childhood is not a new phenomenon (see 1916 data on speed of silent reading, or the 1944 Stanford Achievement Test scores in Stephens [1956]), but its implications for understanding the transition into elementary school have been overlooked. As one obvious corollary, the pay-offs for interventions in the earliest grades are likely to be greater than pay-offs from interventions in later years (Entwisle et al., 2000). As another corollary, even though yearly gains on test scores diminish over middle childhood, the variance across test scores inevitably grows larger with time. The power of first-grade scores to predict children's rankings relative to their peers therefore gets better and better the further they go in school.

So far, the emphasis has been on cognitive development. The next section takes up socioemotional issues, including teacher and parent influences.

SCHOOL ADJUSTMENT: THE STUDENT–SCHOOL FIT

Standardized achievement represents only one strand of development over the first-grade transition. Early "school adjustment" or socioemotional well-being is another strand. Poor children's challenges in first grade are not limited to academics and, as with test scores, socioeconomic status rather than race/ethnicity is the main divide (Entwisle et al., 1997). Compared to better-off children, lower-SES children in the Baltimore study were much more often identified in kindergarten as being at risk for serious academic problems, were absent more often in first grade, and received lower ratings on interest/participation and attention span/restlessness from first grade teachers.

In one school where only 11% of children were on meal subsidy, teachers rated pupils about one *SD* higher in interest/participation than did teachers in a school where 90% of children were on subsidy (see Entwisle et al., 1997). The rank-order correlation between a school's meal subsidy level and teachers' average interest/participation rating of their first-grade students is 0.71. Furthermore, in schools where a majority of children were on subsidy, some children were literally rated "off the scale" (i.e., they were rated at 3 *SDs* less than their school's mean on interest and participation). No student was rated off the scale in the more affluent schools.

SES patterns also characterize teachers' expectations. At the end of first grade, when teachers predicted their students' performance in second grade, teachers in the 10 high-SES schools expected their pupils to get more As and Bs than Cs (or below) in reading during the next year, whereas in the 10 low-SES schools teachers expected almost all children to get Cs or below.

But "adjustment" is a two-way street. Teachers' own social origins exercise a strong influence on how they react to the status attributes of their students. Other things equal, low-status and minority pupils experience their greatest difficulties in the classrooms of high-status teachers. Their teachers evaluate them as less mature and hold lower expectations for

them, and more so than low-status teachers do. Not surprisingly, such children's gains on standardized tests and marks in first grade apparently are depressed by these indicators of pupil–teacher social distance and teacher disaffection (Alexander, Entwisle, & Thompson, 1987). High-status teachers experienced special difficulty with minority students irrespective of whether they themselves were African American or White. Social distance between teachers and first-grade students depends on teachers as well as students, and because it affects achievement, could generate some of the inequality in outcomes that emerges over the first-grade transition.

Parents' expectations for their children's performance were not nearly as stereotyped by SES as were teachers'. *Before any report cards were issued*, parents' expectations for children's first marks in reading, ascertained either shortly before or just after children began school in September 1982, show only a slight gradient by SES level of the school (average parent expectations in the high-SES schools were 2.74 in reading versus 2.59 in the low-SES schools, where 2 = C and 3 = B). When children's performance does not match parents' expectations, however, which is bound to happen with poorer children and their parents because these children's marks are relatively low, the children soon change from attending to their parents' expectations to not being influenced by those expectations (Alexander, Entwisle, & Bedinger, 1994; Entwisle & Hayduk, 1981). Parents' expectations are a key support for children's schooling, but mainly for high-SES children (see Entwisle, Alexander, & Olson, 2001), in part because the mismatch produced by mark feedback in low-SES schools vitiates parents' expectations as a learning resource.

The social organization of the school and its institutional character also affect children's school progress. This facet of schooling is discussed next.

TIME SPENT IN SCHOOL VERSUS AGE: ADMINISTRATIVE PRACTICES

Age is the prepotent determinant of elementary school organization in the United States. Typically all children born within a designated 12-month period are placed in one grade-school cohort. In Baltimore, the Beginning School Study children were born during the calendar year 1976 so they began first grade in September 1982. Children who would turn six January 1, 1982 or after but before January 1, 1983 were enrolled in September, 1982. Those born January 1, 1977 or later had to wait to enroll until September 1983. This age rule determined that Baltimore children up to 6 years and 8 months of age began first grade with others as young as 5 years and 8 months.

Entrance age does *not*, however, predict children's cognitive growth in first grade (Alexander & Entwisle, 1988; Jones & Mandeville, 1990; Shepard & Smith, 1986). Or, put another way, children's growth on achievement tests in middle childhood is independent of their age over relatively long (1-year) time spans. When "young" Beginning School Study first-graders (those with birth dates in November–December 1976, one or two months before the cut-off) are compared with "old" first-graders (those with birth dates in January–February 1976, 11 or 12 months before the cut-off), average test scores of older children are higher than those of younger ones (Table 11-4), but the *gains* made over first grade by the "older" and "younger" Beginning School Study students are almost equivalent. The test scores of "young" first-graders at the end of the school year were lower than test scores of the "old" first-graders because they had lower test scores to start with. Yet children in both age groups *gained the same number of points* on standardized tests of achievement in reading and math over first grade, so age when children start first grade *does not* predict their ability to profit from schooling.

TABLE 11-4. Beginning California Achievement Test (CAT) Scores and First-Year Test Score Gains for "Young" and "Old" Beginning School Study (BSS) First-Graders[a]

	Young ($\bar{x}$ = 69.5 months)	t-tests[b]	Old ($\bar{x}$ = 79.5 months)
Beginning year 1 CAT score			
Reading	269	*	282
Math	277	*	301
Year 1 test score gains			
Reading	64.0		68.7
Math	54.0		49.4

*p 0.05.
[a]"Young" BSS first-graders are those with birthdays in November or December, 1982. "Old" is defined as those with birthdays in January or February, 1982.
[b]t-tests compare means of "young" and "old" BSS students.

Further direct evidence on the lack of a relationship between age and children's progress in school comes from a study of redshirting in the United States (Graue & DiPerna, 2000) and an Israeli study of fourth-, fifth-, and sixth-grade students in Jerusalem's state-controlled elementary schools. In the American study, students who had attained a minimum age of 7 when they began first grade were compared with others of typical (not early) age. By third grade scores on a statewide reading test for the redshirts who started at age 7 were almost identical to scores of students admitted around age 6. In other words, three years of school led to the same outcome, although the groups were one year apart in age.

In Israel, Cahan and Cohen (1989) compared the mean scores predicted for the youngest children in one grade with scores for the oldest children in the next lower grade. If age mattered, then the oldest child in grade 4, say, should have the same score as the youngest child in grade 5 because their ages are very close. Yet this kind of comparison showed a jump in scores between the *similarly aged* children in adjacent grades that unambiguously points to the amount of children's schooling rather than age as the key factor in explaining cognitive growth.

Evidence from natural experiments also suggests that *time spent in school* rather than age explains how much children know. Ceci (1991) estimates that children's IQ scores drop between 0.25 and 6 points per year when schools are shut down. He notes that when the public schools in Prince Edward County, Virginia closed between 1959 and 1964 to avoid integration, most African American children received no formal education. On average, their IQs dropped by about 6 points per year for every year they missed school, with children of all ages affected (Green, Hofman, Morse, Hayes, & Morgan, 1964). For another example, when World War II forced Holland's schools to close, the IQ scores of children whose schooling was delayed dropped by about 7 points (DeGroot, 1951).

Other facts are consistent with the importance of school attendance rather than children's age for their cognitive growth. The number of hours of schooling children receive correlates with their scores on verbal and math aptitude tests (Wiley & Harnischfeger, 1974), and the number of children's absences is inversely related to their test score gains (Alexander & Entwisle, 1988; Bond & Dykstra, 1967; Heyns, 1978; Karweit, 1973). Most persuasive, however, is that all children's achievement scores in the spring exceed their scores in the preceding fall, but some children's growth slows down or stops when school is closed for the summer. All children get three months older in summer but only those whose families can

provide sufficient resources continue to make achievement gains over the summer (see Ceci, 1991; Entwisle & Alexander, 1992, 1994; Heyns, 1978).

Because of these rigid age rules, the first-grade transition is a period when biological and institutional time can be pitted against each other in order to separate effects of attending school from effects of cognitive maturation. This comparison makes clear that children's chronological age may not be the best or only criterion to use in organizing elementary schools. Since exposure to school rather than chronological age leads to cognitive growth, it may be highly worthwhile to start school as early as possible for children who come from homes where resources are in short supply (see Entwisle et al., 2000). Poor preschool children need to be where they can be surrounded by resources that are scarce in their homes. Impeccable evidence demonstrates that disadvantaged children make a smoother first-grade transition and derive significant long-lasting benefit from attending good preschools (see Barnett, 1995). Also mounting evidence indicates that family background probably matters more for cognitive development of preschool and younger children in general than it does for that of older children (Alwin & Thornton, 1984; Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Marjoribanks, 1979).

Since the relationship between family economic background and cognitive growth begins so early (Alexander & Entwisle, 1996; Marjoribanks, 1979; Murnane, 1975), the dearth of good preschools for 3- and 4-year-olds is an important issue, unfortunately one beyond the scope of this chapter. Still, enrollments in pre-primary education vary by race-ethnicity and poverty status. In 1999, over twice as many 3-year-old children whose parents were high school dropouts were not enrolled in schools, compared to children with college-educated parents (29% vs. 60%) (U.S. Department of Education, 2000a). Preschool experience for disadvantaged or minority-group youngsters prior to kindergarten could be a major way to smooth the first-grade transition. A few extra test points conferred by attending a good preschool could be enough to protect economically disadvantaged youngsters against low placements in reading groups or even retention in the first couple of grades (see Entwisle, 1995).

Transitions are generally easier if they are not abrupt and if they can be rehearsed. Both reasons suggest that schooling prior to first grade will ease the first-grade transition. In poverty-stricken cities like Baltimore, many children fail first grade (17% in the BSS), but only a few studies address the transition issues that face children starting school (Barr & Dreeben, 1983; Entwisle & Hayduk, 1978, 1982; Entwisle et al., 1997; Reynolds, 1989, 1991, 1992). The variation in test scores by socioeconomic status when children start school could be considerably reduced by attending Headstart (Consortium, 1983) or full-day kindergarten (Entwisle et al., 1987), and no doubt by other means as well.

To this point children's elementary school experience, and especially the first-grade transition, has been examined from a number of vantage points. In what follows that experience is related to later schooling and even to events in the adult transition.

SCHOOLING TRAJECTORIES

The beginning school transition sets the stage for all that follows. Children's achievement trajectories are remarkably stable (see Alexander, Entwisle, & Dauber, 1994, 2002). BSS children with the highest scores on standardized tests in reading and math when they began first grade had the highest scores at grade 7. Weller, Schnittjer, and Tuten (1992) likewise report a correlation of 0.57 between a reading readiness test given at the start of first-grade and tenth-grade reading and math tests (see also Butler, Marsh, Sheppard, & Sheppard, 1985).

A number of studies show that the quality of children's performance at the end of third grade is a good indicator of future performance. In the standardization sample for the California Achievement Test (1979) battery, for example, third-grade reading scores in fall correlate highly (0.87) with scores the next spring. The parallel correlation for mathematics scores is 0.84. These correlations are close to the reliability of the test, so they are at a practical ceiling. Husén's (1969) large cross-national study showed that intelligence scores and teachers' ratings in third grade were strong predictors of children's long-term educational careers, and Kraus (1973), who followed children in New York City for more than 20 years, found that reading achievement scores were the best predictors of adult status.

The disparities in school achievement separating first-grade children from better-off as compared to disadvantaged homes becomes more marked the longer children are in school. In a school where more than 90% of students were on subsidy, only 47% of the children in the BSS who had started first grade in that school had reached fifth grade 5 years later—53% had either been retained or placed in special education. By contrast, in schools where 50% or less of the children were on subsidy, 77% of children in the BSS who had started first grade there were in fifth grade 5 years later. Over the first-grade transition these children effectively entered upon a track. Children of high SES had test scores a little higher as they began first grade than did children of lower SES, but for BSS children, initial CAT scores in reading and math in the *fall of first grade* correlate 0.41 and 0.55 with scores on higher levels of the same tests at the end of elementary school (grade 5) (see also Alexander & Entwisle, 1996; Kerckhoff, 1993). But the story does not end there. The noticeable but small gap at the start of first grade translated into separate tracks in middle school as well. Children who had the highest test scores at the end of elementary school took algebra and a foreign language in middle school and thus ended up with the needed prerequisites to move into a college preparatory program in high school, while students with lower scores at the end of elementary school did not take those prerequisites in middle school (Dauber, Alexander, & Entwisle, 1996). To be more specific, 62% of children who were placed in the lowest reading group in their first-grade classroom took low-level English in sixth grade. Likewise, 51% of children who had been retained in first grade were in low-level math in sixth grade. First-grade placement decisions set in motion consequent events and processes that greatly reduce the odds that these children would go to college.

First-grade marks also tended to define an achievement envelope for the ensuing years. For example, at the end of the first quarter in first grade a comparison of (a) the BSS students who had the *lowest* marks in reading and math, with (b) the BSS students with the next-to-lowest marks, and (c) the BSS students with the highest marks shows that these rankings are the same 7 years later (Alexander, Entwisle, & Dauber, 1993). The average marks of those who had the lowest marks in first grade were just under a C 7 years later, the average marks of those who were the next lowest after 7 years were just a little bit better (exactly C), and those who had been in the highest group in first grade came out on top again (more Bs than Cs).

The long-term persistence of early rankings means that inequities visible in first grade translate into deficits all along the line. Long before secondary school, social inequality governs schooling. Ironically, studies of social inequality in education have focused mainly on high school, when the optimum time for counteracting these inequities has long since passed.

In terms of policy, gaps in achievement scores and behavioral indicators at the beginning of first grade that reflect socioeconomic differences in family background and neighborhoods are key. To close those gaps requires a better understanding of what happens to middle-class children before they start school, as well as over summers in the primary grades. Some

preliminary research implicates both parents' economic capital and their psychological capital (Entwisle et al., in press).

Two kinds of parental resources predict children's gains over the summer when school is closed. Economic capital is one, because it allows parents to purchase trips to cultural centers, games, books, computers, and the like. Although necessary, the presence of economic resources is not sufficient, though. Psychological capital is also necessary. For children to gain on achievement tests over the summer, parents' psychological resources are also essential. These resources are no doubt multiple, as indicated by high expectations for their children's achievement in both the short and long run. In our view, for compensatory programs to accomplish the desired result, they need somehow to embrace both components—economic, in terms of providing the materials and activities required to support children's cognitive growth *and* psychological, in terms of providing the kind of stimulating interaction with an invested adult or group of adults that engages children in pleasurable and profitable activities. One might say "there is no escalator up Parnassus."

Social stratification in the larger society determined the events and experiences of BSS children over the first-grade transition. The implications of this linkage are profound, because retention rates in first grade were higher than in any later grade, and repeating a grade or getting poor marks in first grade greatly increased the odds that students would later drop out (see Alexander et al., 1994, 2002; Ensminger & Slusarcick, 1992; Entwisle et al., 1997). One way to reduce effects of stratification, noted earlier, is for children to attend preschools and kindergarten (Barnett, 1995; Entwisle, Alexander, Cadigan, & Pallas, 1987; Lazar & Darlington, 1982). For example, in Baltimore attending full day rather than half day kindergarten by itself almost doubled children's chances of avoiding retention in first grade (with initial test scores and other key variables controlled). How does this happen? The mechanisms have yet to be clearly established but Woodhead (1988) makes the case that preschools groom children so they are easier to teach in first grade. An ethnographic study of how both suburban and inner city kindergarten teachers used time found that *all* teachers spent more time on procedural activities (lining up, transitions between activities, and the like) than on any other single activity, including cognitive activities (Berkeley, 1970). In short, preschool training changes the child's social context in first grade.

The qualities that pay off are effective use of time and talent, interest in the subject matter, a sufficient attention span and active participation in the classroom. Youngsters who are interested and involved in classroom activities, and who pay attention, spend more time on task and more of this is quality time (Brown & Saks, 1986; Karweit, 1983). As noted, such qualities lead to superior test score gains during the first year. But as important as positive adaptive behaviors are for test scores, they matter even more for teachers' marks. Behavior ratings have direct effects on teachers' marks in *every* year we studied (grades 1, 2, and 4), but the *first*-grade teacher's ratings have lagged effects on marks in the second and fourth grades as well.

LONG-TERM LINKS TO THE ADULT TRANSITION

At the start of a new century we can lay out a series of studies based on the Baltimore BSS archive (Table 11-5) or on data collected from many other localities (Table 11-6) that show substantial long-term consequences of events or circumstances children experience over the first-grade transition.

TABLE 11-5. Long-Term Outcomes Related to the First-Grade Transition (Baltimore Beginning School Study)

Citation	Early school measure	Outcome
Entwisle, Alexander, Cadigan, & Pallas, 1987	Amount of kindergarten	First-grade absence Beginning CAT scores Beginning marks in reading, math
Unpublished		Retention in grade 1
Dauber, Alexander, & Entwisle, 1993	Beginning marks Grade 1 math CAT score	Retention in Yrs 1–4
Alexander, Entwisle, & Dauber, 1993	Teacher behavioral ratings in Grade 1	School performance in Yr 4: –reading and math marks –reading and math CAT scores
Alexander, Entwisle, & Dauber, 1994	Grade 1 retention	Academic self-image, Yr 8 student mark expectations, Yr 8 reading and math marks in grade 6 and 7 CAT reading and math, math scores in grade 6, 7
Pallas, Entwisle, Alexander, & Stluka, 1994	Grade 1 reading group assignment	Yr 4 CAT scores, reading marks, parent and teacher expectations
Alexander & Entwisle, 1996	Grade 1 reading groups Grade 1 tracking (reading groups, Special Education, retention)	Retention in elementary school Grade 6 course placements
Alexander, Entwisle, & Horsey, 1997	Grade 1 CAT reading and math scores; grade 1 reading and math marks; grade 1 retention	High school dropout
Unpublished	Grade 1 parent educ. expectation for student; Grade 1 marks in reading and math	Middle school placement in advanced course tracks
Unpublished	Work habits grade 1; Number of school transfers	Retention in Yr 1 Test scores in Yr 5 Educational attainment Idleness ages 18–23 Employment ages 18–23

The most recent follow-up of the BSS panel (age 22–23) reveals many connections between the first-grade transition and the level of educational attainment and/or labor market success they have achieved in early adulthood. At age 22–23 (5 years after "normal" graduation), 67.8% of those who had been retained in first grade had dropped out of school. Of these a substantial number (25%), after dropping out had either returned and obtained a diploma or passed the GED. Even so, over four times as many first-grade retainees as never retained students (43% vs. 10%) failed to achieve high school certification by their mid-twenties (Alexander, Entwisle, & Kabbani, 1999).

For the BSS panel a number of first-grade indicators predict the more general level of educational attainment by age 22–23. With race, sex, family SES, grade one standardized

Table 11-6. Long-Term Effects of First-Grade Transition (Other Investigators' Research)

Study	Early schooling	Lasting effect
Fitzsimmons, Cheever, Leonard, & Macunovich, 1969 ($n = 270$)	Achievement test scores in reading and math, grades 1–3	Performance in high school
Pedersen, Faucher, & Eaton, 1978 ($n = 59$; urban disadvantaged)	Exceptional first-grade teacher	Achievement of high adult status Completion of at least 10 years of school
Pope, Lehrer, & Stevens, 1980 ($n = 545$)	Kindergarten achievement (Wide Range Achievement Test)	Reading achievement in grade 5 ($r = 0.50$)
Lazar & Darlington, 1982 ($n = 2008$)	Participation in Headstart preschool programs	Reading achievement (grade 3), Math achievement (grades 3–5) Lower rates of retention and Special Education
Richman, Stevenson, & Graham, 1982 ($n = 705$; United Kingdom)	Preschool attendance	Higher IQ-adjusted reading scores at age 8
Palmer, 1983 ($n = 240$)	One-to-one preschool instruction at ages 2–3 for 8 months	Higher reading and math achievement at grades 5 and 7; Lower rates of retention
Royce, Darlington, & Murray, 1983 ($n = 1104$)	Preschool attendance	Achievement in reading (grade 3) and math (grade 5) Lower rates of Special Education and retention High school graduation
Schweinhart & Weikart, 1983 ($n = 123$)	Preschool attendance (Perry Preschool)	Higher CAT scores at ages 7–14 Lower rates of Special Education placement and delinquent behavior
Meyer, 1984 ($n = 165$)	Kindergarten through grade 3 participation in Distar curriculum with increased allocation of time to basic skills	Higher-grade 9 CAT reading achievement Lower retention rates Higher rates of high school graduation, application and acceptance to college
Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984 ($n = 123$)	High-quality preschool program (Perry Preschool)	Higher GPA in high school; Lower rates of Special Education; Positive outcomes at age 19: –high school graduation –postsecondary education –employed –lower rates of crime, delinquency –lower rates of pregnancy
Hess, Holloway, Dickson, & Price, 1984 ($n = 47$)	Maternal expectations for achievement in preschool	Grade 6 ITBS scores, vocabulary and math

(continued)

TABLE 11-6. (continued)

Study	Early schooling	Lasting effect
Butler, Marsh, Sheppard, & Sheppard, 1985 (n = 286)	Battery of tests in kindergarten Grade 1 reading achievement	Reading achievement tests in grade 6
Stevenson & Newman, 1986 (n = 105)	Pre-kindergarten cognitive measures	Grade 10 test scores in reading and math Grade 10 self-concept and expectancy for success in reading
Wadsworth, 1986 (n = 1675; U.K.)	Preschool attendance	Higher verbal skills at age 8
Entwisle & Hayduk, 1988 (n = 654)	Teacher's mark expectations in grades 1 and 2	English and math achievement tests 4–9 years later, current ability level controlled
Cairns, Cairns, & Neckerman, 1989 (n = 475)	Elementary school retention	High school dropout
Barrington & Hendericks, 1989 (n = 214)	Grade 3 ITBS achievement test scores	High school dropout
Morris, Ehren, & Lenz, 1991 (n = 785)	Grade 4 reading achievement scores	High school dropout
Simner & Barnes, 1991 (n = 193)	Grade 1 reading and math marks	High school dropout
Ensminger & Slusarcick, 1992 (n = 917)	Grade 1 math mark Grade 1 aggressive behavior (especially for males)	High school dropout
Weller, Schnittjer, & Tuten, 1992 (n = 415)	Metropolitan Reading Readiness, beginning of grade 1	CTBS reading and math scores, grade 10
Brooks-Gunn, Guo, & Furstenberg, 1993 (n = 254)	Pre-school attendance Pre-school cognitive ability	High school graduation Post-secondary education
Roderick, 1993 (n = 757)	Grade retention, K through grade 3	High school dropout
Reynolds, 1994 (n = 1106)	Follow-on intervention in grades 1–3 (school-based comprehensive service program providing instructional support and parental involvement)	ITBS reading and math, grade 5 Cumulative grade retention, grade 5
Schweinhart, Barnes, & Weikart, 1993	High-quality preschool program (Perry Preschool)	Positive outcomes at age 27: –lowest arrest rates –higher incomes –home ownership –more stable marriages
Ramey, Campbell, Burchinal, Skinner, Gardner, & Ramey, 2000	5 years of preschool support K through grade 2	Positive outcomes at age 15 Lower retention rate Less need for Special Education

Note: For full references not listed for this chapter see Entwisle, Alexander, and Olson, 1997.

scores in reading and math as well as retention taken into account, first-grade behavior ratings by teachers predict level of educational attainment (Entwisle et al., in preparation). The same set of variables also predicts whether panel members are employed at age 22–23, and the degree to which they have been unemployed. An impressive body of evidence from other sources (Table 11-6) likewise shows that performance in preschool, kindergarten and/or the primary grades predicts outcomes in high school and beyond.

The actual mechanisms that link the quality or character of early schooling to outcomes later in life remain to be determined and are far beyond the scope of this chapter. Still, a few words are in order. Consider first some statistical issues. First, the correlations between standardized test scores in first grade and scores on later tests increase with time because of the relentless increase in test score variance. At the end of grade 5 in the standardization sample for the California Achievement Test Form C Reading Comprehension, the standard deviation is much greater than it was at the beginning of grade 1 (68.4 vs. 43.5), as is also true for the BSS sample (73.9 vs. 41.0). Second, children's school experiences are more differentiated earlier than later. The Coleman Report (p. 293), which divides variance in achievement into between-school and between-family segments, finds the proportion of variance in Reading Comprehension between schools in grade 3 is 20.86% compared to 13.24% in grade 12; likewise in Math Achievement, 21.48% compared to 10.55%. At the very least, these figures suggest that between-school differences in elementary schools are relatively larger than between-school differences in high schools. Third, some early contextual influences have lasting effects probably because they translate into achievement levels (or perhaps personal characteristics like work habits) early in the game. BSS data show that the first-grade teachers' ratings, for example, have stronger effects on children's fourth-grade achievement than do the ratings of the fourth-grade teachers. Likewise, in an earlier study (Entwisle & Hayduk, 1988) the third-grade teachers' expectations predicted high school performance net of ability level (see also Hess, Holloway, Dickson, & Price, 1984; Stevenson & Newman, 1986). Clearly these kinds of questions are multiple, complex, and not likely to be resolved soon. Even so, the range of studies showing long-term sequelae of early school experiences suggest that the present day specification of schooling models is at best incomplete.

With the first-grade transition and its impact on the later life course having been laid out, we now turn to policy issues. While not a "policy study" in the sense that interventions or other changes were instituted as part of the BSS research, there are notwithstanding some key lessons to be drawn.

POLICY ISSUES

Most research on school transitions deals with the move from elementary to middle or junior high school (see Entwisle, 1990; Eccles, Midgley, & Adler, 1984), because adolescence is a time when students' developing sense of identity and self-worth occupy center stage. This research so far has examined mainly socioemotional or affective outcomes. Generally a decrease in self-image accompanies the junior high transition, but susceptibility to that decline depends on youths' personal characteristics (Simmons & Blyth, 1987), family characteristics (Rosenberg & Simmons, 1971), and the social-structural characteristics of the schools they attend, such as peer group patterns (Eccles et al., 1984).

In light of the remarkable pay-offs from research on the junior high transition, the dearth of research on the first-grade transition is surprising. Along with Reynolds (1992), who focused on disadvantaged African American youth, the BSS is one of the first studies to examine

children's transition into full-time schooling in relation to students' long-term demographic and achievement trajectories. BSS data show convincingly that children's relative standing when they start first grade forecasts where they will be at much later points in their lives. School helped BSS children of various SES backgrounds gain the same amounts on achievement tests, as shown in Table 11-2, but those who started ahead tended to stay ahead. Those who started behind gained just as much when school was open as did their more fortunate classmates, but they stayed behind because they were behind to start with. The importance of where children cross the starting line for defining children's long-term life trajectories makes it imperative to focus more research on getting children up to speed in the preschool period, or as they make the first-grade transition (see Entwisle et al., 2000).

A major way to improve the school climate in poor neighborhoods would be to correct the mistaken public perception that elementary schools are falling down on the job. Elementary schools in Baltimore prompted just as much growth in achievement of children who were poor as in children who were better off. Schools appear to be doing a much better job of reaching disadvantaged children than they have been credited with. The success of schools in fostering development of young children irrespective of poverty backgrounds is hard to overrate.

A fascination with inequality in society is one mark of a sociologist. Along with it goes a fascination for how social inequality is perpetuated (Kerckhoff, 1993). The imagery is strong that a set of occupational slots at the top of the school ladder is ready for the new generation to move into. To us, the authors, this image of society as divided into a set of occupational pigeonholes seems to be upside down. High schools do reflect the stratification patterns in the larger society, but the critical sorting processes occur at the beginning rather than near the end of children's school careers. Elementary schools are already stratified according to the economic resources of neighborhoods, and neighborhood SES levels correlate with the kind and amount of early schooling children receive. This early sorting is a kind of "sponsoring", but not in terms of demands of the larger society (i.e., that certain slots must be filled by certain types of people). Rather, parents' choice of a neighborhood determines their choice of a school, and most of what defines a neighborhood are the economic differences that separate it from other neighborhoods.

Organizational theorists visualize the internal structure of schools as either vertical or horizontal because they assume that the school's needs determine its structure. This approach is rational for organizations such as banks or factories, but does not work for schools because the internal structure of schools, or of school systems, depends on the structure of the society in which they sit rather than on their own production goals. Elementary schools became common at the beginning of the 19th century, ostensibly because they fulfilled the need to prepare youth (mainly boys) to function as citizens in a participatory democracy. A *latent* purpose was that they occupied children's time in the winter months when farms lay dormant. Later in the 19th century, when a steady flow of immigrants led to an oversupply of labor, enrolling children in schools kept them from competing for jobs in factories (Bakan, 1974). Thus social forces largely unrelated to children's own needs dictated when schools became universal and the length and calendar of the school year.

To this day, organizational patterns of schools are driven by economic and social pressures. Parents try to maximize their own and their family's social status, which leads them to place their children on what they perceive to be the most effective paths to compete successfully in the labor markets of the 21st century. They struggle to send their children to Ivy League schools, or even to preschools that lead up to the Ivies, not so much because they are deeply committed to their children's intellectual development or because of what their children might

learn, but because they believe that once school is over, adult success depends mainly on social capital. Also, they themselves draw prestige from the quality of the child's college or preparatory school. Schools as institutions serve to perpetuate the social status quo, but the engine that drives the overall social system is located mainly in the individual family, not in its schools.

Elementary schools tend to have socially homogeneous student bodies because the social status of neighborhoods determines the social status of students in elementary schools. This distribution does not serve children or society well (see Kahlenberg, 2001). As stated before, schools are less the problem than most people seem to believe. The distribution of resources across families and neighborhoods is the problem. Problems in families and neighborhoods cannot be solved only by tinkering with schools.

At the same time, the lack of good preschools for impoverished 3- and 4-year-olds is an important means by which social inequality undercuts schooling. At present, teenage parents or high school dropouts are the least likely to enroll their preschool children in center-based programs (U.S. Department of Education, 2000b). If disadvantaged children do not attend preschools prior to kindergarten, and they take less advantage of public kindergartens, relatively lower achievement of poor children in elementary school is the consequence. Kindergartens are widely available, so some key resources already are there, but kindergarten attendance is discretionary in most localities. Children must be encouraged and/or required to attend public full-day kindergartens, preferably in the same schools where they will start first grade. A few extra test points conferred by preschool and kindergarten attendance could be enough to protect many disadvantaged children from low placements or retention in the first few grades (see Entwisle, 1995). The boost children get from preschool and kindergarten eases the first-grade transition. A giant step toward educational equity would be to improve the skills of children whose backgrounds are problematic before they begin first grade.

The next logical stop after increasing poor children's attendance in full-day preschool is to develop summer school programs specifically for poor children that add on to preschool (Entwisle et al., 2000). Preschools can reduce the achievement gap when children start first grade, but during the summer we need to give poor children the extra resources that middle-class parents provide for their children.

What should these summer programs consist of? Summer activities related to reading top the list. Low-income children involved in Atlanta's summer schools tended to read more on their own than did students not attending (Heyns, 1978). Likewise, in Baltimore, first- and second-graders who went to the library more often in summer and who took out more books did better than other children, although those who went to the library had other advantages such as parents with higher expectations for their school performance.

Probably summer programs for disadvantaged children should feature activities that include a substantial amount of physical activity for both boys and girls, especially games like soccer, field hockey, or softball that require very little equipment but have complicated rule systems and require children to take multiple roles. Adult leaders need to be cast in the role of "coach" rather than teacher.

Program content is not the only concern, however. Perhaps most important, coaches need to encourage children to enjoy themselves: engagement is key to learning, and engagement can be difficult to achieve if summer programs are perceived as punitive or boring. Summer programs need careful planning, especially in terms of teachers who can establish strong attachments to students and parents. The programs need to be located near pupils' homes, so children can get to them easily and so parents can become involved. Changing the summer environment of young children in low-income families may require community intervention. No single approach is likely to close the academic gap between low- and high-income children, but summer programs bracketing first grade could help.

THE LARGER PICTURE

Families sort themselves by income into neighborhoods; then neighborhood schools tend to segregate students from different income levels. Because of the unequal distribution of resources across families (and neighborhoods), the engine that drives the schooling system is located mainly in the individual family. This inequity so far has not been reduced by tinkering with schools as they presently exist. The good news is that despite poverty and family disruption, young children's ability to learn *during the school year* seems little impaired by scarce family resources (Entwisle et al., 1997). Poor children fall behind in summer when schools are closed. In seeking to address the achievement gap between rich and poor, we should first recognize the efficacy of elementary schools in leveling the playing field. Most press coverage of American education dwells on its failures, especially its failures with respect to disadvantaged students. These negative perceptions undercut popular support for schools and public education. Missed in these perceptions is the extent to which schools make up for deficits in poor children's backgrounds. Lower-status children are assumed to be "slower" learners, less capable of absorbing the curriculum. The Beginning School Study shows, however, that the achievement deficit of poorer children builds up over summer vacations when schools are closed. Children can learn only if they have the necessary resources.

To make a difference in the lives of poor students, parents and communities must be involved in the schooling process. All parents, not just middle-class parents, need to be active collaborators in the education of their children. Preschool and summer programs, properly organized, could help to empower economically disadvantaged parents and their neighborhoods to become active supporters of children's academic endeavors. These parents need to know, for example, that such simple activities as reading aloud to their children can have big payoffs in supporting children's academic careers. Neighborhoods need playgrounds and coaches to encourage organized sports and craft activities in the summer. Workshops and other outreach efforts could help disadvantaged adults develop some of the psychological and social capital that is so important in undergirding their children's learning.

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