The Role of Schools in Sustaining Early Childhood Program Benefits

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Abstract

A number of articles in this journal issue have documented effects of early childhood programs on children's cognitive abilities, achievement, and social adjustment as they mature to become schoolchildren, adolescents, and young adults. This article carefully considers the role that school experiences play in transmitting and sustaining the cognitive gains made by children in preschool.

The author discusses the process of schooling in the early elementary grades, focusing on how children's achievement is influenced by the expectations of parents and teachers, and by school practices such as assignment to within-class ability groups, retention in grade, and placement in special education. Because attending preschool boosts children's performance, even temporarily, it can ease their transition into first grade and reduce their exposure to negative tracking by the school and to low expectations on the part of their parents and teachers. The link between preschool and first grade is key to understanding and explaining the long-term effects of preschool.

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This article examines the role played by elementary schools in sustaining the benefits of early childhood programs, and proposes new ways of thinking about the links between preschool experience and the early years of elementary school. Surprisingly little is known about the process of schooling in the first, second, and third grades, let alone how preschooling interacts with it.

Studies of how children respond to preschool programs indicate that preschooling has only transient effects on children's intelligence quotient (IQ) and cognitive achievement but, nevertheless, is associated with greater success in school. Children who attend preschool are less often retained in grade and placed in special education, and they more often graduate from high school.[1] (See also the article by Barnett in this journal issue.) While these findings are widely reported, little effort has gone into explaining them. How do the early effects of preschool alter the later experiences children have in their families and school classrooms?

This article focuses on the process of early schooling, and it identifies several factors in the family and the elementary school that influence children's success in school and that could play a part in sustaining the performance of disadvantaged youngsters who have attended preschool. Simply put, because children from disadvantaged backgrounds are especially likely to suffer setbacks during the first grade, preschool programs that boost their performance during the critical transition into school may protect them from school tracking practices such as retention in grade, and may prevent parents and teachers from developing low expectations of the children's performance.

Conceptualizing how the primary grades mediate the long-term effects of preschools requires a life course paradigm that focuses attention on the social contexts in which individuals develop, the substantial influence that individuals have in producing their own development, and the importance of life transitions (such as school entry) as critical periods in development.[2] Preschool may change children directly by building their skills or bolstering their abilities, and it may also affect them indirectly by changing the beliefs or expectations of the people who surround the children. In addition, children are full-fledged players who shape their own schooling. For instance, children who do their homework contribute to their own cognitive growth, and those who enter school with the socioemotional maturity that teachers expect are positioned to benefit from the opportunities for growth offered them in first grade.

Life course transitions introduce individuals into new social contexts, reconfiguring their roles, changing their notions about themselves, and forcing them to learn to function in new institutional contexts. In making the transition from home to full-time schooling, for example, children must construct a self-image as a student, discover the norms and mores of the school, learn how to get along with new peers and authority figures, and map strategies for mastering the necessary skills. In the new environment, they develop different patterns of learning and different patterns of reliance on significant others to support that learning. Because these patterns tend to persist and can place boundaries on later attainment, it is important to consider the ways in which attending preschool helps children make a successful transition into first grade.

The Effects of Preschool on Cognitive and School Outcomes

The most robust data bearing on long-term effects of preschooling come from a report by researchers who pooled follow-up data gathered on about 11 preschool programs.[1,3] These programs, which randomly assigned children to preschooling or to a control group, had a number of short-term influences on children's intellectual performance and their socioemotional functioning. The attention of researchers and the public focused particularly on the ability of the programs to boost IQ test scores by about five points. However, these IQ gains faded two or three years after the children entered public school. There were, however, two solidly established longer-term effects on children and two effects on parents. Preschooled children were less often referred for special education and retained in grade through the end of high school. (An updated review, provided by Barnett in this journal issue, covers a larger number of studies and also confirms these findings.) As for parents, mothers of the preschooled children were more satisfied with their children's school performance than were other

mothers. The mothers of preschooled children also held consistently higher occupational aspirations than their children held for themselves, while other mothers' aspirations showed no consistent patterns.

Effects of preschooling also seemed to persist in the adaptation of the students upon leaving high school.[4,5] A separate evaluation based on three studies that followed 192 youngsters through adolescence[6] found that preschooled youngsters were more likely to graduate from high school, and 66% of the students who had no retentions and graduated from high school were employed, compared with 41% of the others.

Most research evaluating the effects of preschools, even when it has been longitudinal, has focused on the individual child as the target of the intervention. The evaluation reports sketch in the nature of the children's preschool experiences (see the article by Frede in this journal issue), but there is little information about the educational practices used in the schools the children attended from first grade onward or about the educational opportunities provided to them in elementary classrooms. The tacit presumption that underlies these evaluations is that, if preschooling changes youngsters, then they will do better henceforth, but exactly why they should do better is left open.

Explaining Preschool Effects

Some reviewers have speculated about mechanisms that could turn short-term preschool benefits into long-term success and adaptation. For example, one review of studies showing long-term benefits from preschool suggests that attention should be focused not so much on variables like IQ which are designed to measure permanent changes in the child's psychological functioning but, instead, on short-term improvements that could change the child's ability to function in school.[7] Indeed, the pattern of outcomes found in the longitudinal evaluations of preschooling suggests that the positive long-term effects came about mainly because preschooled children had different experiences in elementary school.

This article examines two paths by which the short-term effects of preschool on children could change the social context of school entry and, thereby, affect children's academic success. One path is by enhancing children's cognitive abilities in a way that eases the transition into school and reduces the likelihood that they will be tracked into low ability groups, placed in special education, or retained in grade. Another path is by inducing both parents and teachers to have positive expectations for the child's performance and so to encourage and support the child's academic efforts. Before examining how these paths may transmit the effects of preschool programs, the general nature of children's early school experience and research on parent, teacher, and peer influences will be briefly reviewed.

The Nature of Early Schooling

Doing better in the early grades is important for long-term success because the early grades in school constitute a "critical period" for children's adjustment as students.[8] Entering school changes children's social environments at a time when their capabilities are also changing. Moreover, children's experiences during this period often have lasting consequences. The reputations they earn during the first few years of school can help or hinder them for many years to come.

School Entry as a Critical Period

Entering school places the child in a social context that is different from the one experienced at home or even in preschool. In many preschools, parents have influence over the program, and caregivers may feel they report to parents. When children begin first grade, however, not only are they no longer wholly dependent on the family, but the family virtually relinquishes control over them during school hours to first grade teachers who, as professionals, often resist attempts by parents to exert control. Also, in first grade, children's work begins to be seriously evaluated in a comparative framework by teachers and classmates. The conventions of the school, with its achievement

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orientation, its expectation that children will stay on task and work independently without close monitoring, its insistence on punctuality, and its evaluation of children in terms of what they can do instead of who they are, all can be daunting to children.

The beginning school transition coincides with some key cognitive changes within children. The onset of formal schooling occurs at about the same time children move from preoperational to operational modes of thinking. Around age six, many children seeing liquid poured from a fat, short container into a tall, thin container will think, after the transfer, that the tall container holds more liquid. In the next couple of years, though, their cognitive capacities change, and they can understand why the width of the container as well as its height must be considered. Similar changes affect children's understanding of language, as they become able to think of how words can replace one another in sentences. That is, when asked the first word they think of after you say "went," they say "go"; and to "heavily," they respond "lightly." In the first few years of school, these and other rapidly developing cognitive capacities enable children to take enormous strides in understanding the world around them. In fact, one researcher estimates that children's learning rate in first grade is about 10 times what it is in high school.[9] It is no accident that in the United States and other countries, the transition into full-time schooling coincides with this spurt in cognitive growth.

Also prominent among the psychological characteristics of six- to eight-year-old children is their receptiveness to the school experience. Most elementary students are very much in tune with the goals of the school. They are learning about important everyday activities—how to make change, select lunch, tell time, or read signs—that help them get along in the world. The curriculum, therefore, makes sense to them and to their parents. There is considerable evidence that children's liking for school tends to decline as they go through school, as does their academic self-image.[10] Making a good adaptation in the first few grades, therefore, can lead to considerable differences in the amounts children learn over their school careers, especially since the basic skills covered in the early years provide a crucial foundation for later learning.

Perhaps the most important way that entry into school serves as a critical period, in terms of the topic of this article, is that children are sorted and categorized over the first year or two of school in ways that can launch them into achievement trajectories. They construct their self-images as students, and school personnel begin keeping written

dossiers that shadow them through high school and beyond. In addition, beginning in the first grade, schools stratify children along a continuum of academic achievement and potential, and sort them into different groups for instruction. Administrative sorting arrangements in elementary schools include assignment to ability groups within the classroom, referral to special education, and retention in grade. Although they are not usually labeled this way, these sorting arrangements are effectively tracks (a term more commonly used in reference to instruction in high school). They serve as a form of educational stratification that has gone largely unresearched.

School Tracking Practices

Ability Grouping

One form of administrative sorting in early primary school is the use of within-class ability grouping, a practice until lately universal: in first grade, more than 90% of elementary schools use such ability groups for reading.[11] The aim of creating ability groups is to reduce heterogeneity, to enable teachers to target their instruction to children's competence. Three or four groups are most typical, but as few as two groups and as many as five groups are found.[12] Because the groups are constructed within each classroom, a given child's placement is influenced more by how able the teacher perceives him or her to be relative to classmates than by any absolute measure of ability in reading. An average student in a classroom of very bright peers will fall in a low reading group while the same student in a classroom of children with educational difficulties might be assigned to the top group. Once the child has been assigned to a group, however, real consequences begin to follow. Placement in reading groups effectively determines the amount and type of instruction children receive;[13,14] it influences group process (interruptions and disruptions);[15,16] and it affects how children are viewed by parents and teachers.[17]

Research shows that children in higher groups are taught more words,[18] so it is hardly surprising that children in higher groups make greater progress in reading. Even more to the point, teaching style varies by ability group even when children are reading from the same basal reader.[19] Children in low groups are encouraged to read word by word while teachers provide clues for decoding isolated words. This instructional style does not give beginning readers much chance to apply their knowledge of spoken language. In high groups, by contrast, clauses, expressive intonation, and supposed emotional states of characters are brought to children's attention. Needless to say, it is much more exciting to tell or hear a story where the characters are "human" than to hear one where each word is stumbled over and maybe revised. Reading group rank also determines the ranges within which teachers assign marks.[20] Children in low ability groups in high-ability classrooms often get lower marks than other children of the same tested ability who are in low-ability classrooms. First graders are strongly influenced by the marks they receive, so marks can directly encourage (or discourage) their learning. For these and other reasons, placements in low-ability groups tend to have effects in the later grades of elementary school.[17]

Retention

Another key way that children are sorted in first grade is by retention. School systems often retain students for another year to expose them to the same material a second time, yet these students usually are not favored with special curricula designed to remedy their particular difficulties. Although repeating a grade may help students master basic skills, students thus held back are separated from their age-mates and may acquire a variety of pejorative labels. National data on retention are not available, but one study found that about 50% of males and 40% of females in poverty level households, where the head is a high school dropout, are "behind" in school at least one year.[21] In a random sample of Baltimore children selected in 1982 (see Box 1 for a description of the Beginning School Study), more than 16% were held back at the end of first grade, and another 8% were held back in their second year.[10]

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Box 1

The Beginning School Study

The Beginning School Study provides a strong research base for discovering how social structural factors (minority/majority status, gender, socioeconomic background) and the immediate social context (parents, teachers, peers) help or hinder children's cognitive development as they make the transition to full-time schooling.

The study is based on a two-stage random sample of 825 children who entered first grade in 20 Baltimore public elementary schools in 1982. The schools were chosen so as to reflect the racial/ethnic and economic diversity represented in the city school system. Children were selected at random from all the first grade classrooms, with 51 different classes represented. The education level of the students' parents averaged slightly below high school; about 55% of the students were African American. The research team gathered data from school records on several occasions, from parents, teachers, and from many direct interviews with the students themselves.

The following table (based on 585 students with complete data) shows the proportion of first graders who were placed in low ability groups, retained, or referred for special education.

Children experiencing low placements (585 total)

Lowest reading group in the fall	28%
Lowest reading group in the spring	22%
Retained to repeat first grade	14%
Designated for special education	7%

Of the children touched by these experiences (203 total)

One low placement only	35%
Multiple low placements	65%

Source: Entwisle, D.R., and Alexander, K.L. Entry into school: The beginning school transition and educational stratification in the United States. *Annual Review of Sociology* (1993)19:401–23.

Special Education Placement

Special education placement is less common than retention in first grade but still far from rare. Since the passage of Public Law 94-142 in 1975, practices in special education have changed, and the number receiving special education services rose to 4.8 million children 3 to 21 years of age in 1990–91.[22] Most special education is provided to children in regular classrooms by offering pull-out services (68% of special education children were served in this way in 1985–86). In Baltimore, referral to special education is a sorting practice that becomes common in second grade and later. In the Baltimore study, 13% of children were in special education by the end of their second school year, in addition to the 24% who had been retained by then.[23]

Thus, administrative tracking of one kind or another touches a great many young children, and for many it begins when their school careers begin. There is also considerable overlap in children's placements. In the Baltimore study, for example, 85% of the children who repeated first grade also were in low reading groups or were receiving special education services.[23] As noted, retention is much more common in first grade than later, and it seems that, if retention is not effective in getting children up to satisfactory performance levels, special education often is the next step taken.

Expectations of Significant Others

A separate line of research deals with long-term effects of the expectations of significant others (teachers and parents) on children's school performance, another route by which social contexts could transmit effects of preschool. Several studies have found that, if parents believe their children are smarter than other chil-

dren, their children tend to do better than other children[24,25]—a relationship that appears to be stronger in middle-class than in working-class families. In fact, parents' beliefs about children's ability can predict children's school performance better than children's actual ability, as measured by standardized tests.[26] Several other studies show that parents' expectations early in school can produce long-term effects in children's performance.[27,28]

Parents' favorable beliefs about children in the first few grades could be associated with improved achievement in two ways. Their effects may be direct and continuous: parents' positive beliefs may persist, affecting children's achievement year by year. But there also may be important indirect effects that act over time. If parents believe their first grade children will do well, and this belief translates into better marks or achievement scores for children in first grade, then those children may continue to achieve at higher levels. High marks in first grade set a standard for subsequent marks and raise expectations for success, contributing positively to later performance.[3] When a child does better in first grade, the learning itself also helps to improve performance in the next and later grades.

Similarly, long-term teacher effects could come either directly or indirectly. Direct effects occur when teachers prompt a superior performance from some students in elementary school. Studies show that children for whom teachers hold high expectations are held to stricter standards, are called upon more frequently, and are more often pressed for answers in class.[29] These demands promote more learning in the early grades and help children establish high achievement levels. Indirect effects come about when the teacher influences the first grader's own attitudes toward achievement, which are then carried forward within the child. Several studies by different research teams found long-term effects of first, second, and third grade teachers' expectations on performance in high school and beyond which were best explained by such indirect routes.[27,28,30,31] These findings suggest that children's achievement responds for a long time to the social influences the children experienced during the critical first few years of school.

How Preschool Effects Can Be Transmitted

As noted in the beginning of this article, the most widely publicized effect of preschool is the beneficial but transient boosting of IQ test scores by about five points. Because these IQ gains faded after only two or three years, however, early evaluations dismissed their importance. When follow-up evaluations showed reduced rates of retention in grade and placement in special education, early childhood researchers were challenged to explain how the preschooled children's early cognitive gains could lead to these important school outcomes. The analysis provided in this article of how the transition into school and the process of early schooling affect children suggests several ways that preschool experience might influence children's elementary school careers.

Easing the Transition to First Grade

First, finding elevated IQs in first grade signals that preschooling can ease the transition into first grade. The positive effects of preschool are more cognitive than social: preschooled children's IQs, marks, and achievement test scores were higher. Studies have shown that, like preschool, attending kindergarten for a full day rather than part day significantly increases children's scores on standardized tests, especially among minority group members. It is the cognitive advantage from these early experiences that helps children do better in first grade, not their having learned to be better behaved.[32] Recent research on school readiness shows that kindergarten teachers give relatively little weight to socialization, or deportment, as an aspect of school readiness. Only 42% of teachers in a national study rated the child's ability to sit still and pay attention as "essential" or "very important" to readiness.[33]

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Preventing Placement in Low Tracks

Second, the modest IQ gains and higher achievement scores that preschool children received during the early grades could reduce the likelihood of retention in grade and placement in special education. These kinds of early administrative sorting were not assessed in the preschool follow-up literature. However, most decisions to hold children back are made in the early grades, and retention rates are universally highest in first grade.[10] In many elementary schools that enroll disadvantaged children (children like those in the preschool programs that were rigorously evaluated), even a temporary increase in test scores in first grade could prevent retention. Because retention puts children on a separate track from their promoted classmates and many retained children later enter special education, even a relatively small elevation in children's IQ test scores in the first couple of grades could be critical for their long-term prospects.

At seventh grade, 14% of preschooled versus 35% of children who did not attend preschool had been retained or placed in special education.

Although there is no published evidence on reading group assignments for the youngsters included in the studies examined by the Consortium of Longitudinal Studies,[1,3] the children who attended preschool received higher test scores, and that would place them in higher groups in many schools. If so, preschooled youngsters would have been able to take advantage of the additional learning opportunities offered in higher ability groups—since their IQs were temporarily elevated—and many probably did well enough to avoid damaging administrative placements. At seventh grade, 14% of preschooled versus 35% of children who did not attend preschool had been retained or placed in special education.[34]

Raising the Expectations Held by Significant Others

A third explanation for the superior long-term achievement of preschooled children focuses on the expectations that important people around them held for their success. The preschoolers might have achieved more because they were "defined" as good students by virtue of their higher reading group placement and, perhaps, because their having attended preschool raised others' expectations for them. This effect has not been documented in evaluations of preschool programs, despite speculations that such processes might be at work.[35]

Further insights come from a recent study involving disadvantaged youngsters in Chicago public schools.[36,37] Using data for about 1,500 disadvantaged African-American youngsters, this study links experience in preschool programs to later school outcomes. Children's social contexts played a role in transmitting preschool effects: (1) preschooling changed the character of the setting in which later learning took place because children with preschool experience and higher achievement levels attended kindergarten together, and (2) preschooling promoted higher levels of parent involvement in school when children were in first grade. These differences were directly related to preschooled children's reading and math achievement in kindergarten and first grade, and also to their socioemotional maturity at the end of first grade, as rated by teachers on items such as "Came to my class ready to learn" and the like. These data show that preschooling affected parents and peers in ways that changed the social context of children's first grade experience, and these contextual changes helped the children overcome the disadvantage of their family backgrounds.

Providing the Support of Peers

Finally, the importance of peer links over the transition between preschooling and kindergarten is further clarified by researchers who study children's peer play.[38] They report that children who were "cooperative players" in preschool were seen as more sociable by kindergarten teachers and were better liked by their classmates. Furthermore, the longer children had attended preschool, the less anxious they were and the better was their attendance in kindergarten. No widely known evaluations of structured preschool programs have examined the effects on children of enter-

ing school in a stable peer group, although research on older children suggests that being with a group of familiar peers could ease the stress of the transition into first grade for preschooled children.[39]

Conclusion

This examination of research on preschool and the process of schooling in the primary grades suggests that the link between preschool and the first grade may be key to understanding preschool effects. The evidence shows that even a temporary cognitive boost enables children from disadvantaged backgrounds to make a successful transition into school, and it appears to be the school's response to the preschooled children that produced the lasting benefits. These children may have been easier for the first grade teacher to teach, their parents may have been more impressed by their abilities, or they may have found the transition into school less jarring. In any event, processes of schooling must play a crucial but little-understood part in the preschool story.

The Process of Early Schooling

From a policy standpoint, the most important questions about early schooling relate to schools because it is much more feasible to change schools than it is to try to change families. Although research on high schools indicates that the administrative features of schools (like library size or teachers' years of experience) matter little compared with the characteristics of pupils in those schools, the same may not be as true of grade schools. To recommend changes, however, we need to know much more about the process of early schooling. For example, more research is needed on school tracking in the early grades and how it interacts with preschooling. In most past research, effects of retention, special education, and ability grouping have been studied in isolation, but children's experience is not isolated. The retained child often ends up in special education, and the child in the lowest reading group is often retained. Studies that are limited to one dimension of early tracking risk misconstruing the source of children's difficulties, and they cannot show how consequences compound across dimensions of tracking or how tracking interacts with preschool experience in working to the advantage of some children and the disadvantage of others.

The Generalizability of Preschool Effects

It will also be important to extend research on preschool effects to include larger, more diverse samples. The bulk of prior research on preschool effects has involved disadvantaged African-American children. An exception is the recent analysis of nationally representative data that evaluated the effects of Head Start for both white and African-American children. White children showed positive and persistent effects from their participation in Head Start, including less likelihood of retention, but only transient effects and no difference in retention rates emerged for African-American children.[40] While this difference may reflect methodological problems (the children were not randomly assigned to attend preschool), it is possible that Head Start programs for African-American children placed less emphasis on academic achievement or that white children's grade school milieux differed from those of African-American children.

To clarify findings like these, additional longitudinal research is needed that spans ethnic and socioeconomic groups. With a few exceptions,[24,25,36,40] there is little longitudinal research on large samples in the first three grades. Additional insights may also come from national education surveys now being planned that will cover preschoolers as well as elementary school youngsters. Research using large, diverse samples is needed to disentangle school from community effects, home from school effects, and family configuration from economic effects. Recent research on achievement in the first two grades shows that differences in economic resources of families matter more for children's performance than do ethnicity or school composition.[41,42] Likewise, the economic resources a second parent provides account for much of the academic advantage of children who reside in two-parent families.[43,44]

The most important questions about early schooling relate to schools because it is much more feasible to change schools than it is to try to change families.

Who Attends Preschool Programs?

Although the benefits of preschool are most evident among children from poor, minority backgrounds, those groups are not the most likely to attend preschool programs. As of 1991, 40% of white children, about 31% of African-American children, and 21% of Hispanic three- to four-year-olds were enrolled in prekindergartens.[45] Children from homes with incomes in the highest quartile are more than twice as likely to attend prekindergarten programs as are children whose families are in the lowest quartile (52% versus 22%). However, when income and similar factors are controlled, African-American children are more likely than other children to be enrolled in a center-based program.[46] By contrast, differences in attendance between children of mothers with more or less education appear consistently across income categories. These findings suggest that efforts will be needed to draw children in teen-mother and like families into preschool programs so as to increase their success in school.

Mounting evidence testifies to the powerful effects that early schooling can have on children's life chances and ultimate well-being, in part because educational stratification begins in earnest during these years. Providing preschool programs to help children negotiate the first grade transition can yield large returns, especially for children from economically disadvantaged families. More research is needed to determine how best to structure these programs and make them more accessible to disadvantaged children.

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