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Title

Reforming Preschools and Schools

Permalink

<https://escholarship.org/uc/item/3ps034c4>

Journal

Academic Pediatrics, 16(3)

ISSN

1876-2859

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Publication Date

2016-04-01

DOI

10.1016/j.acap.2015.12.003

Peer reviewed

Reforming Preschools and Schools



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ABSTRACT

Compared with their higher-income counterparts, children growing up in low-income families in the United States typically complete less schooling, report worse health, and work and earn less in adulthood. Moreover, changes in the American economy over the last 40 years have raised the level of skills and qualifications that children need to obtain a good middle-class job, as well as making it much more difficult for children from low-income families to attend schools that support their learning of these skills. We first review strategies used in the past to improve K–12 schooling—including investing more money, introducing more accountability, and putting in place new governance structures (eg, charter schools)—and show why these strategies have been relatively ineffective. Drawing on the research literature and case studies, we then describe education reform strategies for prekindergarten programs and for elementary, middle, and high schools that may help meet these challenges. All of the initiatives described in our case studies provide ample opportunities for teachers and school

leaders to improve their skills through coaching and other professional development activities; incorporate sensible systems of accountability, including requiring teachers to open their classrooms to the scrutiny of colleagues and school leaders and to work with their colleagues to improve their teaching practices; and incorporate high academic standards, such as those described in the Common Core State Standards. By focusing directly on improving teaching and promoting learning, these successful initiatives have boosted the achievement of low-income children. They show that it is indeed possible to make a real difference in the life chances of low-income children.

KEYWORDS: education policy; educational outcomes; inequality; preschool

ACADEMIC PEDIATRICS 2016;16:S121–S127

CHILDREN FROM LOW-INCOME families begin school well behind those born to more affluent parents, and they fail to gain ground during the school years (Fig. 1).¹ Moreover, adults who were poor as children complete 2 fewer years of schooling, earn less than half as much, work far fewer hours per year, receive more in food stamps, and are nearly 3 times as likely to report poor overall health relative to adults whose families had incomes of at least twice the poverty line during their early childhood.² These adult outcomes are in turn associated with worse educational and health outcomes for the children born to these adults, which risks perpetuating a vicious cycle of intergenerational poverty and poor health.

This article focuses on education-based approaches to improving the life chances of poor children. While the family and other out-of-school contexts obviously play a major role in shaping child and youth development, completed schooling has repeatedly been shown to be a major determinant of adult attainment and health.^{3,4} During the first three-quarters of the 20th century, American schools did a quite good job of providing many groups of children from low-income families with the skills and educational attainments

needed to earn a decent living.⁵ Over the last 40 years, computer-driven technological changes have drastically changed the labor market, eliminating a great many of the middle-class jobs held by previous generations of high school graduates and replacing them with jobs that require greater skills and training.⁶ This has widened the pay gap between high school- and college-educated workers and the income gap between high- and low-income families. Indeed, despite ongoing economic growth, poverty among US children has remained stubbornly high.

CAUSES AND CONSEQUENCES OF INCREASING INCOME INEQUALITY

By requiring higher skills for hundreds of middle-class occupations, technological change is increasing demands on the nation's educational system. At the same time, increased income inequality has affected parents' ability to invest in their children. While high-income families have far more resources to support large investments in their children's learning, low-income parents have fewer resources to devote to their children.⁷

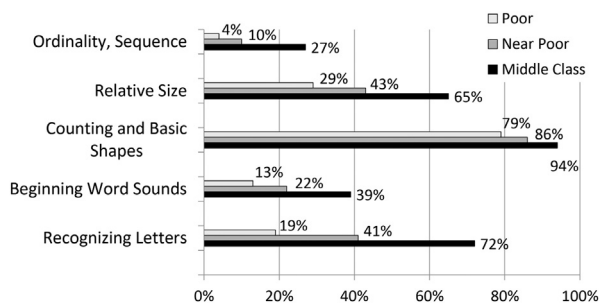


Figure 1. Rates of kindergarten proficiencies for poor, near-poor, and middle-class children. Authors' calculations from the US Early Childhood Longitudinal Survey—Kindergarten Cohort. Poor is defined as income below the official US poverty thresholds. Near poor is defined as income between 1 and 2 times that poverty line. Middle class is defined as income above twice the poverty line.

An obvious advantage of a higher family income is that it enables parents to buy books, computers, high-quality child care, summer camps, music lessons, private schooling, and other enrichments for their children. In the early 1970s, the richest 20% of families spent about \$3000 more per child per year (in 2014 dollars) on child enrichment than did the poorest 20%.⁸ By 2006, this gap had nearly tripled, to \$8000 per child per year. This adds up to a \$100,000 spending gap over the course of a child's primary and secondary schooling—a huge amount. Of course, child development also depends on the amount and quality of time and attention parents are able to provide to their children. But money matters here too, as higher-income parents are able to free themselves from time-consuming housework and maintenance activities.⁹

A sometimes overlooked consequence of income inequality is increased residential economic segregation. Compared with 40 years ago, poor families are now more likely to be surrounded by other poor families, while high-income families are more likely to be surrounded by other affluent families.¹⁰ Because most children still attend schools close to their homes, rising residential economic segregation creates economically segregated schools—with increasing concentrations of low- and high-income children attending separate schools.¹¹ This has shaped school functioning and contributed in several ways to the increasing gap between the achievement and educational attainments of children growing up in low- and high-income families. Specifically, the quality of education provided in schools serving high concentrations of low-income students is compromised by a disproportionate number of children with academic problems and behavioral issues, high rates of student mobility during the school year, and difficulties in attracting strong, stable teaching faculties.⁷

Over the past 40 years, economic changes have both increased the skills and qualifications children need to obtain a good middle-class job and made it much more difficult for children from low-income families to attend schools that teach those skills effectively. Policy makers and educators have responded to this changing landscape with several kinds of educational innovations. One strategy

has been to increase access to high-quality early education programs. Another has focused on improving the quality of K–12 schooling. We discuss each in turn.

PRESCHOOL EDUCATION INTERVENTIONS

The large gaps in foundational academic skills between poor and nonpoor children shown in Figure 1 point to the importance of family conditions early in life. That such skills are also teachable outside the home is a key rationale for providing disadvantaged children with a year or two of enriching preschool education before they enter the formal school system.¹² While evaluations of hundreds of preschool programs have been published over the past 50 years,^{13,14} only a handful of such programs have figured prominently in policy discussions about early childhood investments. These include Perry Preschool, the Abecedarian program, Head Start, and, more recently, some state-level prekindergarten (pre-K) programs.

MODEL PROGRAMS

During the 1960s, Perry provided 1 or 2 years of part-day educational services and weekly home visits to 58 low-income, low-IQ African American children aged 3 and 4 in Ypsilanti, Michigan. Per-pupil costs amounted to about \$20,000 per child (in 2014 dollars). Perry produced sizable increases in children's academic skills by the end of the program while also boosting employment rates and reducing the number of arrests in adulthood. Heckman and colleagues¹⁵ estimate that the program generated a social rate of return of between 7% and 10%.

The Abecedarian program, which served 57 low-income African American families from Chapel Hill, North Carolina, enrolled its participants in the first year of life and provided them with a full-time, high-quality early education curriculum until the beginning of kindergarten. The program cost about \$80,000 per child (in 2014 dollars). It too improved children's early skills, had lasting effects on educational attainment, and generated a social rate of return exceeding 7%.¹⁶

It is difficult to extract policy lessons from Perry and Abecedarian to apply to early education programs that states or the federal governments might offer today. Both programs were designed and run by researchers and served only several dozen children, and at quality levels that few large-scale programs can match. Moreover, control-group conditions in the 1960s and 1970s were very different than they are today. Family sizes were much larger, parent education levels were much lower, and very few poor children attended center-based preschool. Consequently, the standard of care available to low-income children who did not participate in Perry or Abecedarian was lower than that available to low-income children today. On the other hand, neighborhoods are more segregated by income than they used to be. As a result, the neighborhoods in which low-income families lived several decades ago may have been safer and have had more social resources than their counterparts today.⁹

HEAD START

In contrast to these small model programs, Head Start was launched as a publicly funded national preschool program, and it has served over 31 million low-income children since its inception in 1965.¹⁷ Head Start was designed to enhance the development of economically disadvantaged children using a holistic approach that included educational services and parenting education, as well as increased access to a full range of health care services, including dental and mental health care.¹⁸ The early evaluation studies of Head Start were nonexperimental and generated considerable criticism and debate. It was not until 2002 that the first large-scale experimental study of Head Start was undertaken.

This evaluation study sampled Head Start centers nationally and used wait-list lotteries to randomly assign children to an enrollment slot or to a comparison group.¹⁹ Children who were given the opportunity to attend Head Start experienced gains in language and literacy outcomes at the end of the program but did not differ from comparison group children on measures of math, attention, behavior, or mental health outcomes. Assessments at the end of the 1st and 3rd grades found that the reading and math skills and the behavioral ratings of treatment group children were essentially identical to those for the control-group children. This pattern of findings suggests that Head Start impacts are likely to be much smaller and less persistent than the effects of the much more expensive Perry and Abecedarian programs.

The quick fadeout of Head Start program impacts is puzzling in light of findings of a handful of nonexperimental studies suggesting that Head Start might have important long-run effects on adolescent and adult outcomes. For example, Deming²⁰ found that children who attended Head Start scored significantly higher on a composite of positive early adult outcomes than their siblings who did not attend Head Start or other preschool programs. We do not know whether studies finding quick fadeout of impacts on skills or the emergence of impacts on adult outcomes are specific to the cohort or the time periods that were studied. As a result, there is considerable uncertainty about the return on the dollars we are now investing in the Head Start program.

PRE-K PROGRAMS

Funded by states or local school districts, pre-K programs are another form of publicly provided preschool. Funding and enrollment in state pre-K programs have increased dramatically over the past several years, with over 40 states engaged in pre-K initiatives.²¹ Most pre-K programs are targeted to low-income children; however, a small but growing number of states offer universal access for all 4-year-olds, and in some cases 3-year-olds as well. Pre-K programs differ considerably in terms of their cost and design—hours, location of classrooms (some districts contract with community providers to deliver services), and the types of other services and supports provided.

Several recent evaluations of pre-K programs have shown short-run improvements in achievement test scores.²² Moreover, in a comparison of Head Start and pre-K programs in Tulsa, Gormley et al²³ found that low-income pre-K students gain more in the preschool year than Head Start students with respect to early reading and writing but not early math skills. A lingering question, however, is whether the 2 groups of children were comparable on important background characteristics and their program experiences. Finally, the general lack of evidence about longer-run results of pre-K programs warrants caution in drawing strong policy conclusions from these otherwise promising results.

BOSTON'S PROMISING PRE-K PROGRAM

One of the most promising pre-K systems is operated by the Boston Public School District.⁵ Under the leadership of Jason Sachs, Boston program designers combined proven literacy and mathematics curricula with content to teach children the negotiation skills that facilitate constructive play and learning. The curricula specify that children should spend considerable time at activity centers, playing in groups at activities designed to teach critical skills.

Recognizing the challenges to Boston pre-K teachers in implementing these curricula, the Boston Public School Department of Early Childhood Education embarked on a multiyear strategy to increase the quality and consistency of instruction in pre-K classrooms. This included providing teachers with manuals on how to prepare for and teach each of the daily lessons in the curriculum and ensuring the staffing necessary to implement the curriculum appropriately. Key features included a full-time paraprofessional in each pre-K classroom to assist a licensed teacher as well as a coaching program and other professional development activities designed to provide all pre-K teachers and aides with the skills and knowledge needed to implement the demanding curriculum. Particular challenges were to convince teachers and aides that 4-year-olds learn by doing, not by listening to teachers talking, and that having children work in groups at multiple activity centers was critical to learning, even though this posed classroom management challenges.

What did these efforts add up to? Weiland and Yoshikawa²⁴ found that the mathematics, literacy, and language skills of children who had just finished participating in the pre-K program were considerably more advanced than those of similarly aged children who had just entered the pre-K program (Fig. 2). Test score impacts are quite large, amounting to about half of the school-entry gaps between students from poor and higher-income families.¹² Moreover, the evaluation also found improvements in various components of executive functioning—working memory, inhibitory control, and attention shifting. Longer-run follow-ups are clearly needed to establish whether these impressive gains persist. If so, then Boston's curriculum- and training-based approach may be a promising one for creating high-quality pre-K programs.

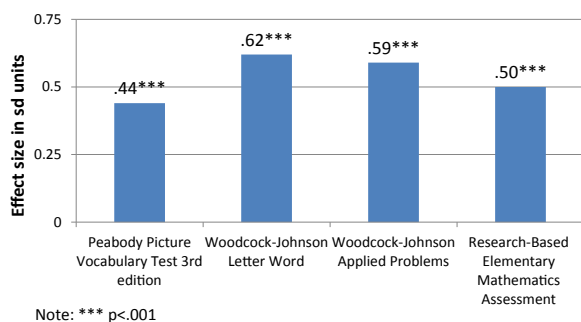


Figure 2. End-of-year impacts of Boston pre-K on literacy and mathematics. ***P < .001. Weiland and Yoshikawa.²⁴

K–12 EDUCATION REFORMS

In recent decades, efforts to improve K–12 education have focused on a series of policies that at the time seemed like silver bullets to many legislators. They included more money, more accountability, and new governance structures. Underlying these policies is the implicit assumption that educators know what to do to close achievement gaps, and that all they need to accomplish that goal is either more resources or appropriate incentives. This has proved not to be true.*

MORE MONEY

As a result of successful legal suits filed in state courts on behalf of families in districts with small per-student tax bases, during the 1970s and 1980s many states substantially changed how they allocated funding across local districts and increased funding for public education. The federal government also contributed to the funding of high-poverty schools with the passage of the Elementary and Secondary Education Act (ESEA) of 1965. In fiscal year 2013, Title 1 of ESEA provided more than \$14 billion for compensatory education. The bulk of the evidence suggests that increased school funding has not consistently closed income-based gaps in children's achievement.^{26,27} One reason is that much state and federal education funding has merely replaced local tax revenues for schooling.^{28,29} Another is that relatively few school leaders have succeeded in using extra funds in a manner that has increased teachers' effectiveness in their work with students and each other. A third is that during the 1970s and 1980s, the period during which investing more money was the dominant educational reform strategy, few schools were held accountable for using that money in ways that improved teaching and learning.

While most studies find that additional school funding did not result in improved student test scores, a recent study shows that this discouraging pattern stems in part from the choice of outcome measures.³⁰ In particular, increased

school funding resulting from court-mandated school finance reforms appears to have increased years of completed schooling and labor-market wages later in life for students, especially those from low-income families.

TEST-BASED ACCOUNTABILITY

Frustrated that increased funding for schools had not yielded consistent improvement in student performance, policy makers turned to standards-based educational reforms in the late 1980s and 1990s. The basic idea was to specify the skills students should acquire at each grade level and develop assessments to measure the extent to which children had mastered them. Over time, standards-based reforms turned into test-based accountability, with the emphasis on holding schools accountable for children's mastery of the specified skills. The passage of the No Child Left Behind Act (NCLB) in 2001 made this a federal policy by linking federal funding to meeting specified goals and standards.

Educators' responses to test-based accountability pressures have failed to improve educational quality in a consistent way.³¹ NCLB created incentives for states to choose relatively undemanding tests and set low proficiency thresholds. Moreover, some schools, particularly those with the least capacity to educate children well, responded by narrowing the curriculum and focusing their efforts on students with scores just below proficiency, neglecting children with lower (and higher) scores.³² The basic problem is that many school leaders and staff members lacked the knowledge needed to substantially boost the skills of their students. Imposing accountability without providing the supports teachers need does not serve children well.†

NEW GOVERNANCE STRUCTURES

Some analysts have argued that many school districts, especially those in big cities, are dysfunctional and that changes in governance structures are needed to improve publicly funded schooling. This argument underlies the support for charter schools, which are publicly funded schools typically governed by a group or organization under a legislative contract (or charter) with the state or jurisdiction. The number of charter schools in the United States has grown rapidly in the last 25 years, and these schools now serve approximately 5% of the nation's K–12 students. Some charter schools have produced dramatic improvement in their students' skills.^{34,35} However, the best available studies find that the effectiveness of charter schools nationally is remarkably similar to that of conventional public schools.³⁶

We want to be clear about our interpretation of the research evidence. Money, incentives, and accountability matter. To make a difference, however, they need to be

*One government policy, court-ordered busing to reduce racial segregation of schools, did have marked positive impacts on educational outcomes for African American children. However, recent rulings by the US Supreme Court indicate that this policy is unlikely to be reintroduced in the near future. For evidence on the impacts of court-ordered school desegregation, see, eg, Guryan.²⁵

†Evidence from the recent policy initiative in Washington, DC (IMPACT), which coupled strong accountability with significant supports to teachers, indicates potential positive benefits from this combination; see Dee and Wyckoff.³³

combined in a manner that reflects their interdependence and that recognizes the need to develop schools in which the adults are continually learning how to serve students more effectively. Evidence from local initiatives conducted at some scale provides insight into how this might be done.

PROMISING PROGRAMS

The Boston pre-K program is one such example. Duncan and Murnane⁷ describe 2 others: the campuses of the University of Chicago charter school and New York City’s small high schools of choice. In rigorous evaluations, the Chicago charter schools were found to boost achievement by 36 points on a SAT-type scoring scale.³⁷ The evaluation of the effort to create more than 200 small high schools of choice in New York City found that attendance in one of these high schools increased the probability of both high school graduation³⁸ and college enrollment rates for low-income students (Fig. 3).³⁹

Although these programs are exceptional, they highlight what it takes to improve the education of low-income children on a wider scale. All take advantage of advances in research-based knowledge, such as effective instructional strategies for developing literacy skills. All provide what we call “sustained supports,” which in these cases were coaching and other professional development activities designed to help teachers and school leaders improve their skills. All incorporate sensible systems of accountability, including requiring teachers to open their classrooms to the scrutiny of colleagues and school leaders and to work steadily with their colleagues to improve their teaching practices. And finally, all incorporate high academic standards, such as those described in the Common Core State Standards. Overall, these successful local initiatives, while more complex than the policies legislatures tend to favor, boosted the achievement of low-income children by focusing directly on improving teaching and promoting learning. In particular, they concentrated on developing and implementing teaching strategies that engaged students as active learners.

SUSTAINED SUPPORTS COMBINED WITH SENSIBLE ACCOUNTABILITY

Central to all of these effective initiatives was a combination of sensible accountability and sustained supports. Both are needed; accountability alone is not enough

because the central problem is not lack of effort but rather lack of know-how. Supports alone are not sufficient because most adults are reluctant to change. Unless they are held accountable, many teachers will continue to teach as they have in the past and as they themselves were taught.

Accountability can take different forms. The successful school initiatives that Duncan and Murnane⁷ describe share an element that should be part of every accountability system: a shared responsibility for improving the teaching and learning of every student. For Boston pre-K teachers, this included taking advantage of the instructional coaching provided by the system. For the charter school teachers, it included working together to make implementation of the sophisticated literacy curriculum more consistent. For the 9th grade teachers in New York City, it meant embracing their shared responsibility to develop the skills of all incoming students, including those reading far below grade level. In all of these schools, teachers had the resources and supports to respond constructively to the accountability pressures.

WHAT CAN SCHOOLS ACCOMPLISH?

What schools can accomplish depends on our country’s commitment to funding high-quality pre-K programs and creating educational systems that provide all educators with a combination of consistently strong supports and sensible accountability, as exemplified by the schools we highlight. In some settings, reforms can be accomplished by redistributing existing funds. In other settings, especially where there is a concentration of low-income students, it will take more resources, combined with sensible accountability, to ensure that all students have access to the high-quality educational experiences they need to improve their life chances. Recent studies have highlighted some of the practices successful high-poverty schools use when they have sufficient resources. These include a longer school day and year, ready access to mental health professionals to support troubled students, and time for educators to work together to improve instruction and to design and implement a code of conduct for students.^{36,40}

Rigorous evaluations of efforts like those in Boston, Chicago, and New York City show what is possible when schools receive the support they need to meet accountability challenges. We attribute the high quality of the Boston pre-K program in large part to partnerships with local foundations that provided much of the funding necessary for developing the skills of the system’s teachers. A key to the success of the Chicago charter schools was an alliance with the University of Chicago. The small high schools in New York City were created by small groups of innovative educators and their community partners, working within a framework that encouraged the development of new models of urban high schools. Common to all 3 was support for innovation, combined with a willingness to undergo rigorous evaluations of their efforts.

	Mean for lottery losers	Impact for lottery winners
High school graduation in 4 years	61.2%	+9.5%**
New York State Regents diploma (requires specific coursework and test-based proficiency)	43.5%	+6.7%**
Post-secondary enrollment in 4 years	39.7%	+7.9%**

** p<.01;

Figure 3. Impacts of winning the lottery to attend a New York City Small High School of Choice. **P < .01. *Unterman*.³⁹

PROGRESS IN THE YEARS AHEAD

It is impossible to predict the extent to which America's 50-state public education systems will be successful in preparing a highly skilled labor force and a citizenry prepared to thrive in our 21st-century pluralistic democracy. However, there is some cause for cautious optimism. First, national gaps in school readiness between children from low-income and higher-income families are slightly smaller today than they were 2 decades ago.⁴¹ Likely contributing factors include an increase in educational resources in low-income households and expansions in state and local pre-K programs.⁴² In his 2013 State of the Union address, President Obama put the expansion of high-quality early learning experiences for all children in low- and moderate-income households on the policy agenda. Although achieving that goal will not be an easy task, the federal executive office's focus on both quality and access is an important step forward as we continue our national and local conversation about how best to promote early learning.

Furthermore, a growing number of not-for-profit organizations are providing schools with resources they need to implement successful change, including skilled teachers and leaders as well as knowledge and expertise. Some, like the New York Leadership Academy and New Leaders, prepare principals to create schools that are effective learning communities for both teachers and students. Others, like Teach for America and the Boston Teacher Residency program, recruit academically talented college graduates and support their work in high-poverty schools. Still others, like Teachscape and TeachingWorks, are working to improve teacher preparation on a larger scale. These organizations may help schools to acquire the capacity they need to respond constructively to accountability pressures.

Even as this article goes to press, the US Congress is debating the reauthorization of the Elementary and Secondary Education Act. The Every Student Succeeds Act, which has been approved by a congressional conference committee, retains a centerpiece of NCLB, namely the requirement that schools test all students in grades 3 to 8 and 1 year of high school and report results for subgroups. However, it also calls for states to incorporate into their accountability system measures of students' opportunities to learn and readiness to succeed in postsecondary education and training.⁴³ This provision would allow states to incorporate into their accountability systems some of the research-based practices that the successful schools we describe embrace. These include a team-based examination of the degree to which the assignments teachers give to students are aligned with demanding academic standards and of the quality of the feedback teachers provide on students' work.

Under NCLB, certain states have made far more progress than others toward the goal of providing a good education for all children. Those that have been most successful have adopted clearly defined, academically challenging learning standards, student assessments that are well aligned with those standards, and a transparent

accountability system, coupled with a comprehensive strategy for developing the skills of educators and improving the performance of lagging schools. There is every reason to believe that this pattern will continue in the future. The federal government and private philanthropy can play a constructive role by providing incentives for states to learn about and adopt the accountability and school support policies of the most successful states. They might also facilitate collaborations among states in an effort to build capacity. Not-for-profit organizations such as Achieve, the Council of Chief State School Officers, and the Council of Great City Schools have done this in the past, and they may play an even more important role in the future. The nation's future will depend in large part on our success in this endeavor.

ACKNOWLEDGMENTS

We are grateful to the Eunice Kennedy Shriver National Institute of Child Health and Human Development of the National Institutes of Health (award P01-HD065704) and to the Russell Sage Foundation (award 83-08-06) and the Spencer Foundation (award 201000075) for supporting our research and allowing us to summarize the lessons from our books here. None of the sponsors played a role in the writing of this article or in the decision to submit the article for publication.

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