

The Promise of Preschool

Why We Need Early Education for All



The smiles on their faces say it all: preschoolers in Perth Amboy, New Jersey, enjoy learning in school. As the pictures here and on the following pages show, 4-year-olds in Carol Graff's class at the Ignacio Cruz Early Childhood Center benefit from a content-rich curriculum. Students learn letters and numbers, shapes and colors—and have plenty of time to play, too. Kendal, left, munches an apple slice during snack time. Below, in the library center in a corner of the room, Steve writes while Laura reads.

For details on Perth Amboy's preschool program, see the article on page 30.



BY W. STEVEN BARNETT AND ELLEN FREDE

The worst economic downturn since the Great Depression may not seem the best time to propose a significant expansion of preschool. State and local budget cuts have affected all levels of education, including early childhood, an area that we have studied for more than 25 years. As codirectors of the National Institute for Early Education Research (NIEER), we conduct research and engage in other activities that involve visiting schools, meeting with teachers, observing students, and writing reports on effective preschool practices and how to implement them. Our research is also aimed at informing federal and state policy decisions about providing preschool. To help in this, we track state and federal legislation on early childhood education. Based on our research, and our review of others' research, we have consistently advocated for universal access to high-quality preschool.

By “high-quality,” we mean a program for 3- and 4-year-olds that develops their knowledge and skills across the content areas:

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language and literacy, math, science, social studies, and the arts. A high-quality program also helps facilitate children's social, emotional, moral, and physical development, as well as helps shape their attitudes, beliefs, dispositions, and habits. In rigorous studies, preschools that have demonstrated the largest social and academic gains for children employ well-paid teachers who hold at least a bachelor's degree, and offer relatively small class sizes. They support teachers through expert supervision and professional development focused on their classroom performance.

PHOTOGRAPHS BY BRUCE GILBERT

And they are part of a larger system that provides additional resources for children who present special challenges (such as children with disabilities or English language learners).

High-quality programs can be found in public schools, in private child care, and in Head Start, but they are few and far between. Research on the educational quality and effectiveness of preschool programs indicates that few of the preschool programs children attend are of high quality.¹ Most might be rated as mediocre. A significant percentage provides little support for learning and development.² Private programs typically have the lowest quality, but many public programs are little better. Alarming, public policies that combine low reimbursement rates and low standards for child care with increased pressure on parents to work may actually harm children's development.³ What is particularly sad about this state of affairs is that preschool education has the potential to produce exactly the opposite result.

The United States faces serious problems that effective early education can help alleviate, most notably high rates of school failure, dropout, crime, and delinquency, as well as far too many youth who are not well prepared for the workforce. From 35 to 45 percent of American children are poorly prepared to succeed in school at kindergarten entry.⁴ Of course, it would be unrealistic to expect preschool education to solve the school-readiness problem, much less the bigger long-term problems, all by itself. At best, preschool education is one part of a larger, multifaceted set of public investments in human development. Nevertheless, even modest improvements may bring large benefits, as we explain in this article.

The annual Current Population Survey of school enrollment finds that about two-thirds of all 4-year-olds and about 40 percent of 3-year-olds attend a classroom-based program in child care, Head Start, or preschool. Of course, children not in classrooms are not necessarily at home with their parents: 21 percent of 4-year-olds are in home-based care with either nonrelatives (8 percent) or relatives (13 percent), as are nearly 40 percent of 3-year-olds.

We call for replacing our nation's patchwork of predominately poor and mediocre programs with preschool education that is part of every state's system of public education. Public education provides democratic governance and a much-needed infrastructure. Just as important, it connects prekindergarten with K-12 education, allowing preschool and kindergarten teachers to work together to ensure that children enter school prepared.

The education of young children continues to engender heated debates over costs and benefits, teacher qualifications, curricula, class size, and at what age children are ready for school. We cannot address all these points in a single article. But we can answer key questions that highlight the urgent need to offer high-quality preschool education to all children.

What are the key characteristics of high-quality preschool?

The quality of a preschool program determines how effective it is in helping children learn and develop—and whether it's a worth-



Another school day begins at the Ignacio Cruz Early Childhood Center, one of seven sites to enroll Perth Amboy's 3- and 4-year-olds. As a result of a 1998 court order and subsequent state regulations, Perth Amboy and 30 other high-poverty districts began offering universal preschool. Today, more than 1,300 young children in the district attend preschool.

while investment. To assist educators, community members, and policymakers in assessing the quality of their preschools, we worked with our colleagues at NIEER to compile 10 research-based benchmarks, which we briefly describe here.*

The first four benchmarks specify the minimum teacher qualifications. Research shows teachers are crucial. Better education and training for teachers can improve the interaction between children and teachers, which in turn affects children's learning. Thus, we recommend the following: teachers should have a bachelor's degree and specialized training in preschool education⁵ and should complete at least 15 hours of in-service training annually,⁶ while assistant teachers should have at least a Child Development Associate (CDA) or equivalent credential.⁷

Benchmarks five and six focus on class size and staff-child ratios. Classes should be limited to 20 children *at the most*⁸ and have no more than 10 children per teacher.⁹ With smaller classes and fewer children per teacher, children have greater opportunities for interaction with adults and can receive more individualized attention, both of which are essential to their academic and social development.

Early learning standards are also critical to quality because preschool programs too frequently underestimate children's capability to learn. Clear and appropriate expectations for learning and development across all domains are essential.¹⁰ Thus, benchmark seven calls for programs to address children's physical well-being and motor development, social/emotional development, approaches toward learning, language development, and cognition and general knowledge.¹¹

*The limitations of research are such that judgment inevitably plays a role in setting specific benchmarks. When the evidence was not as solid as we'd like, we relied on the characteristics of programs that produced reasonably large educational benefits in studies with strong methodologies (e.g., High/Scope Perry Preschool and Chicago Child-Parent Centers, which we will discuss later).

At right, Carol Graff reads a book to students. Though they sit and listen during story time, the children are active much of the day. Below, Nalani shows off her dancing while all the children enjoy music playing on the classroom computer.



The eighth and ninth benchmarks relate to children's overall well-being; their success in school involves not only their cognitive development but also their physical and social/emotional health. So, preschool programs should provide at least one nutritious meal per day;¹² vision, hearing, and health screenings and referrals;¹³ and frequent parent-involvement opportunities, such as parent conferences, and parent-support services, such as parent education.¹⁴

The final benchmark calls for implementing systematic methods for evaluating, monitoring, and improving program quality by conducting regular site visits that inform technical assistance and professional development.

Together, these 10 benchmarks represent the minimum criteria needed to ensure preschool programs have the resources they need to be effective, especially when serving children at risk of school failure. Meeting all 10 standards will not guarantee high quality. On the other hand, each of these standards is important, and it is unlikely a preschool can be fully effective unless all 10 benchmarks are met.[†]

Beyond these 10 benchmarks, we've found there's a certain buzz of purposeful, fun activities that characterize high-quality preschool classrooms. Children should be busy with conversations, projects, experiments, reading, and building activities; have opportunities to choose from a variety of short and long, indoor and outdoor activities; and have close, warm relationships with the adults as well as other children. Teachers should assess children's social and academic progress regularly and adjust their instruction and activities as needed; while important for all children, this is especially critical when working with English language learners and children with disabilities. Teachers should also prepare children for school by teaching expanded vocabulary,

[†]Some have challenged this approach to quality, citing studies that fail to find any associations linking teacher education, class size, ratio, and other program features to either teachers' practices or children's learning. In our view, the nonexperimental methods of these studies are so prone to problems that they should carry little weight, especially since their findings are contradicted by the findings of experimental studies and defy common sense. For example, they find no added value from any education for teachers beyond a high school diploma. Yet, we find no examples of highly effective preschool when teachers are poorly educated and poorly paid.

alphabetic principles, and phonological awareness; concepts of numbers, shapes, measurement, and spatial relations; task persistence; early scientific thinking; and information about the world and how it works.

Do the benefits of preschool outweigh the costs?

Over the past 50 years, researchers have accumulated a large body of evidence regarding the effects of preschool education on children's learning and development. The large number of studies allows researchers to use statistical methods to summarize their findings—a process called meta-analysis. We can estimate average effects across studies and, with enough studies, investigate how effects vary with preschool program characteristics, the populations served, and even the designs of the studies. Researchers associated with our institute conducted a comprehensive meta-analysis of findings from 123 studies conducted since 1960.¹⁵ Most often, studies investigated the effects of preschool education on cognitive development. Studies also looked at how preschool affects socioemotional development and school success (as indicated by grade repetition or special education placement).

The findings of the meta-analysis are quite clear: preschool education positively affects learning and development. The average effect of the programs studied on cognitive development is substantial, large enough to move a child from the 30th to the 50th percentile on standardized tests (of IQ, reading, mathematics, etc.) at kindergarten entry. The more rigorous studies are more likely to find larger effects; when we adjust for study quality, the average effect is large enough to move a child from the 24th percentile to the 50th percentile. As children move through school, this initial effect declines by half, so the long-term impact on cognitive ability is about half as large as the immediate effect. Specific program features matter for program effectiveness, and long-term learning gains of close to 20 percentile points are obtained when programs are more optimally designed.

Fewer studies looked at socioemotional development and school success, so we can't do the same kinds of fine-grained adjustments for study rigor and program features. Average effects across all studies reveal improvements of about 5 to 7 percentile points, but they do not decline over time. Long-term effects on outcomes such as social skills, problem behavior in school, repeating grades, and the need for special education are about half as large as those for cognition. Possibly, this is because the preschool programs studied focused less on these domains. We can't really tell from the meta-analysis, but recent studies specifically focused on social development suggest that better program design could lead to larger gains here, as well.¹⁶

A look at long-term findings reveals that gains in achievement and decreases in behavior problems, grade repetition, and special education are followed by other important outcomes throughout adulthood, such as increased high school graduation rates, increased earnings, decreased crime and delinquency, and better

mental health.¹⁷ These long-term effects have considerable value despite their modest size.

While these findings are supported by an array of studies of varying quality, three studies have become quite well known, largely because they have provided a basis for cost-benefit analyses: the High/Scope Perry Preschool study, the Abecedarian study, and the Chicago Child-Parent Centers study.¹⁸

These three studies are methodologically rigorous, provide results into adulthood, and provide the only three comprehensive cost-benefit analyses of preschool education to date. Comparing the results of these three studies with those of the meta-analysis, we see that the initial cognitive effects of these programs are somewhat larger than the average across all studies, and even larger than those using more rigorous methods, but the magnitudes of their medium- to long-term effects are not exceptional. They clearly fit well with the rest of the literature.

All three programs served economically disadvantaged and

New Jersey Finally Gets It Right

In 1998, as part of *Abbott v. Burke*, a school funding equity case, the New Jersey Supreme Court ordered the provision of high-quality preschool education for all 3- and 4-year-olds in school districts with large disadvantaged populations. Subsequent rulings clarified that all teachers should have early childhood certification and a four-year college degree, and that each teacher and assistant should serve no more than 15 children. The court also authorized the state to allow districts to contract with private providers such as Head Start and child care agencies to offer the program at the state's high standards. For several years, the state delayed full compliance, but in 2002, the state began to implement this ruling in earnest.

In 1999–2000, preschool programs in these districts were poor to mediocre, and children's learning gains were modest. Based on the widely used 7-point Early Childhood Environment Rating Scale–Revised (ECERS-R), in which programs are considered good if they score 5 or higher and poor if they score below 3, ratings of classroom quality were just above minimal (3.5) for the private programs most children attended and mediocre (4.4) for public school programs. Fewer than 10 percent of private programs reached a 5; worse, one-third fell below a 3, meaning they might actually impede children's development.

Full implementation of the court's order took time. The state had to develop preschool program standards, early learning outcome standards, and a new early childhood teacher certification. A

scholarship program was created to help teachers in contracted private-provider programs pay for college degrees and certification courses. Preschool teacher pay was raised in private settings to the same level as in the public schools. In addition, a continuous improvement process was created to measure progress toward the standards and to inform decision making at each level (child, classroom, district, and state). The continuous improvement cycle involves an iterative process of establishing standards or objectives, measuring progress toward them, analyzing results, and implementing improvements. It was applied at each of the following levels of the program:

- The child level, to document and analyze children's progress, and plan individual and classroom teaching strategies;
- The classroom level, to provide information for individual teacher self-assessment and related coaching, and when aggregated across classrooms for districtwide professional development practice;
- The district or program level, to provide districts and their private-provider partners a protocol for assessing their progress toward meeting program standards; and
- The state level, to inform statewide policy and professional development as well as to report to the legislature and the public on the preschool program's progress and impacts.

By 2007–08, the results were clear. Private programs served two-thirds of the children, but now did so under contract to local boards of education, and average scores on the ECERS-R had risen to 5.2 for both public school and private programs. There was now no difference in observed quality between public school and private programs. Most programs scored better than good, regardless of auspice, and fewer than 1 percent scored below a 3. Substantial gains in learning have been documented as a result. Grade repetition by the end of first grade has been cut in half for children who attended two years of preschool (from 10 percent to 5 percent). Test score gains are considerably larger than for Head Start and private child care centers that are not part of the court-ordered program. One of the most interesting aspects of this natural experiment is that most of the classrooms are in Head Start and private child care centers. With the features we cited above, and with infrastructure support from the public school system, they are producing larger learning gains.

To learn more about preschool in New Jersey, see *Partnering for Preschool: A Study of Center Directors in New Jersey's Mixed-Delivery Abbott Program* (nieer.org/resources/research/partnering_preschool_highlights.pdf), *Assessment in a Continuous Improvement Cycle: New Jersey's Abbott Preschool Program* (nieer.org/resources/research/NJAccountability.pdf), and *Public Preschool in New Jersey Is One Roadmap to Quality* (nieer.org/docs/index.php?DocID=102).

—W.S.B. and E.F.



primarily African American populations. However, the degree of disadvantage among the families varied from study to study, as did the extent of poverty and other social problems in the communities where the programs took place. All three programs had higher standards for teacher qualifications and pay than most preschool programs, including typical child care and Head Start centers, and many state-funded pre-K programs. Staffing ranged from the Perry Preschool's one teacher for every six children, to Chicago's one teacher and one aide for every 16 children. Two of the programs offered half-days during the school year for two years, but some children attended for only one year. The Abecedarian program provided full-day, year-round child care from the first year of life to age 5. These program features obviously affected the costs. Perry and Abecedarian cost more than the vast majority of public programs (in 2008 dollars, they were roughly \$10,000 and \$15,000, respectively, per child per year). However, the part-day Chicago program was a large-scale public school program that cost less, on an annual basis, than Head Start and many state pre-K programs

(in 2008 dollars, it was roughly \$5,700 per child per year).

The most accurate summary of the economic findings from these three studies is that the returns of public investments in high-quality preschool for disadvantaged children are greater than the costs. There is a tendency in the policy world to focus on the specific ratio of benefits to costs in each study—16 to 1 for Perry, 10 to 1 for Chicago, and 2.5 to 1 for Abecedarian. However, each of these ratios is subject to uncertainty, and we cannot simply project the economic returns of these three programs onto preschool education generally. When any program modeled after these examples is implemented today, variations in the population served, location, and program design and implementation have such large impacts on the benefits that these specific cost-benefit ratios are not particularly informative. Fortunately, we do not need highly precise estimates to guide public policy. Knowing that the benefits of high-quality programs are large relative to costs is good enough (and far better than the guidance we have for most public policies).



Students learn through a variety of activities. Above, Evan and Kendal play a math game on the computer. Right, Nalani focuses her attention in the dramatic play center. Below, Jalen and Gianna experiment with water.



When thinking about potential economic returns, there are a couple additional points to keep in mind. If a substantial increase in parental earnings is one of the desired outcomes, preschool education programs will have to be delivered in conjunction with full-day child care. Otherwise, they do not offer enough support for working parents. Similarly, if programs are to substantially reduce crime, they will need to serve children in neighborhoods where crime is a serious problem (you can't prevent a problem where there isn't one), and they will need a curriculum that addresses social and emotional development and behavior rather than just academic achievement. This last lesson comes from the larger research literature. Generally, we should expect that variations in program design, population served, and social context will affect the returns to public investments in early education.

What have we learned from Head Start?

Head Start, the nation's oldest and largest publicly funded child development program, is higher in quality than most private programs, but it could be improved greatly. Currently, our best evidence of Head Start's impacts comes from the congressionally mandated National Impact Study. The study found

modest positive effects on some, but not all, outcome measures after nine months of Head Start. Effects were smallest for broad cognitive measures (such as tests of prewriting and vocabulary) and larger for narrow literacy skills easily taught and mastered in a brief time (such as naming letters). By kindergarten and first grade, there were virtually no persistent positive effects on children.¹⁹ However, we believe the results underestimate Head

Start's impacts because many of the children in the control group (i.e., who were not in Head Start) received other preschool services. Nevertheless, even the most favorable statistical adjustments would not fundamentally alter the conclusion that Head Start is much less effective than had been hoped.

One key to dramatically improving Head Start is suggested by research findings from Tulsa, Oklahoma.²⁰ Oklahoma is the state closest to offering pre-K to all 4-year-olds. This state-wide effort has included a variety of strategies, including partnering with existing Head Start centers. In Tulsa, the public school district supports and oversees pre-K in public school classrooms and partners with Head Start. The school district pays for fully certified teachers to teach in Head Start, and they receive the same salaries and benefits as other public school teachers. The result is that children's learning gains in Tulsa Head Start are much more similar to those in the Tulsa public schools, and considerably larger than learning gains in Head Start nationally. This finding is particularly notable since Head Start's major shortfall with respect to the features of high quality is the low level of teacher qualifications and pay. Although almost half of all Head Start teachers nationally have bachelor's degrees, their earnings are about half of public school teachers'. Even in Tulsa, however, Head Start still appears to underperform the public schools on some key measures, a topic to which we will return later.

What have we learned from other preschool programs?

State and local pre-K policies vary greatly, making it difficult to generalize about programs nationally. For example, the High/Scope Perry Preschool was a public school program, but was far from typical. The Chicago Child-Parent Centers are closer to today's public school programs in funding level and in features such as class size, teacher qualifications, and pay. Chicago's centers demonstrate what a carefully crafted, reasonably funded public school program can accomplish. A similar public school program for 4-year-olds was found effective in a rigorous study back in the 1960s.²¹ This study involved about 500 children, and the program features were more similar to those of today's public school programs. A teacher and an aide staffed each preschool classroom of 17 children. Effects on cognitive abilities at kindergarten entry and at third-grade follow-up were impressive; they were comparable to the average effects in the meta-analysis for rigorous studies.

Looking across these three well-researched and effective public programs, we see that all three employed public school teach-



Perth Amboy preschoolers learn to work independently and develop social skills. Above, Jenifer concentrates on painting. Left, Rahim and Steve compare cookies during snack time.

ers who received intensive coaching and supervision, with regular in-depth discussion and feedback regarding teaching practices. That support for teachers likely contributed to the strong results and dif-

ferentiates these programs from many others today.

More recent studies, though not as rigorous, have estimated the initial effects of one year of state pre-K on children's cognitive abilities in eight statewide samples from Arkansas, California, Michigan, New Jersey, New Mexico, Oklahoma, South Carolina, and West Virginia.²² The average effect is about half of that found in the meta-analysis for more rigorous studies, though the top-performing states have effects similar to each other and to results from the Chicago Child-Parent Centers. In all three domains tested—language, literacy, and mathematics—estimated average effects are several times larger than the most generous estimates of Head Start's effects. While these eight state programs are not representative of all state pre-K programs, they are a broad sample and demonstrate that large-scale public pre-K programs can meaningfully affect children's learning.

Recent studies of the long-term effects of state-funded pre-K programs are weaker methodologically.²³ Nevertheless, they have yielded evidence of long-term gains in test scores, decreases in grade repetition, and decreases in behavior problems. Long-term test score gains in some state pre-K studies have been comparable to averages from the meta-analysis. These effects are much, much larger than those found for child care programs or Head Start.

Should government-sponsored preschool be targeted to children in need or open to all?

In recent years, a number of states—Florida, Georgia, Illinois, Iowa, Maryland, New York, Oklahoma, and West Virginia—have

moved toward providing free public pre-K for all children.²⁴ These states vary considerably in their actual coverage and program quality: only Oklahoma can be considered to have succeeded in providing high-quality preschool education to almost all 4-year-olds. Florida and Georgia serve most of their 4-year-olds, however, the quality of their programs is suspect, particularly in Florida. Florida requires lead teachers to have only a paraprofessional credential and funds the program at about \$2,500 per child for a school year (about one-third of the amount per child for Head Start).

By and large, early childhood policy in the United States remains firmly focused on serving only the economically disadvantaged. This targeted approach is fundamentally unsound and should be changed in favor of public preschool for all. Our reasons, which we expand on below, are as follows:

- Targeting does not serve disadvantaged children well in practice.
- Targeting is based on a misconception that low academic performance in America is primarily a problem of the poor.
- Most children from middle-income families lack access to high-quality preschool.
- Effective preschool programs produce strong academic and social gains for all children, even though gains for disadvantaged children are somewhat larger.
- The added benefits of universal programs outweigh the added costs.

The United States first committed to providing children in poverty with preschool programs in 1965, when the federal Head Start program was launched. States have added to this commitment by funding their own pre-K programs; the vast majority target children from low-income families. Yet, today, less than half the children in poverty attend a public preschool program at age 4 and an even smaller percentage attends at age 3. Many of those who are enrolled attend programs that are less than highly effective. Subsidized child care brings the percentage of 4-year-olds enrolled in a center-based program to more than 50 percent, but effectiveness and quality are even lower in child care. After nearly a half-century of failure to achieve the nation's goals with targeted preschool, it is time to consider another approach.

Our inability to serve most children in poverty often goes unnoticed because it is naively assumed that all children in Head Start and other targeted programs are poor. In fact, about half the children enrolled in Head Start are not poor, and state pre-K programs are even less tightly targeted. This is not just because the eligibility rules are loose or poorly enforced. Family income fluctuates over time, and few families are poor two years in a row. Some states redetermine eligibility for child care subsidies frequently to tighten targeting, but bouncing children in and out during the year is no way to run an educational program. In addition, neither Head Start nor other targeted programs are entitlements, and they have never been funded at levels adequate to fully enroll the eligible populations. Finally, some families shy away from programs limited to poor families, either to avoid stigma or because they worry about negative consequences for their children if the only peers they associate with are also poor.

Pre-K for all would greatly increase the number of children from poor and near-poor families who receive a free public preschool education. It also would at least double the enrollment in public preschool programs of children from families in the bottom 40 percent of income. Just how close to 100 percent participation we get would depend on program quality and how well it accommodates parental needs for child care (for example, by offering wraparound care outside school hours). Some of New Jersey's



Classroom teacher Carol Graff and paraprofessional Emily Colon act out a story (that includes music and dance) with the students. Movement is an important part of the preschool day.





Above, Carol Graff reads a story to a small group of students seated in the science center. Working with small groups allows Graff and Colon to see which students understand the material covered in class and which ones need more help. Right, Perth Amboy students enjoy outdoor play.



pre-K programs have reached that 100 percent mark (to learn more, see page 24).

Whether quality would improve with pre-K for all depends on how the policy is enacted. There is some temptation for politicians to offer universal pre-K on the cheap, so that they basically subsidize existing child care arrangements without raising quality. Florida's universal program seems to be following this pattern. On the other hand, Oklahoma offers preschool education to all 4-year-olds at a high level of quality.

Incorporating pre-K into public education is the best way to prevent this bait and switch. Currently, most state-funded programs are administered through state departments of education (sometimes jointly with other agencies). We believe that state and local boards of education should be responsible for providing high-quality preschool. However, they should partner with private organizations, including those that contract to deliver Head Start, to supply those services. Such partnerships can provide highly effective early education while meeting child-care needs and giving families more choices.

Under this system, all preschool programs are subject to public standards, accountability, and local democracy. Centers—that fail to meet standards for classroom practice and student learning despite support for improvement would lose their contracts. Our experience in New Jersey shows that few centers actually need to be eliminated when there is real accountability and support.

With this structure, pre-K for all stands to benefit economically disadvantaged children in another important way. Children learn from each other, not just from teachers. Research indicates that

disadvantaged children may learn significantly more if they attend classes with children from a broader socioeconomic spectrum. As we discussed earlier, pre-K teachers in Tulsa have the same credentials and compensation in the public schools and Head Start. Children's gains in mathematics are nearly identical in the two settings. However, children's gains in literacy and social skills are considerably larger in the public school pre-K classrooms than in Head Start.²⁵ Although differences in curricula and teaching practices cannot be ruled out as a cause, we suggest that children's interactions may contribute to the differences. Head Start serves a poorer and more limited socioeconomic range than the Tulsa public schools.²⁶

One of the main reasons why most public preschool programs have been limited to children from low-income families is that much of education policy in the United States focuses on closing the achievement gap between disadvantaged students and their higher-income peers. The achievement gap is a serious problem, more serious than most people realize. The fact is, the achievement gap between children from middle- and high-income families is as great as the gap between children from low- and middle-income families. To close the achievement gap, our preschool and other remediation programs need to serve children from both low- and middle-income families, as they all need assistance in catching up to their peers from high-income families.

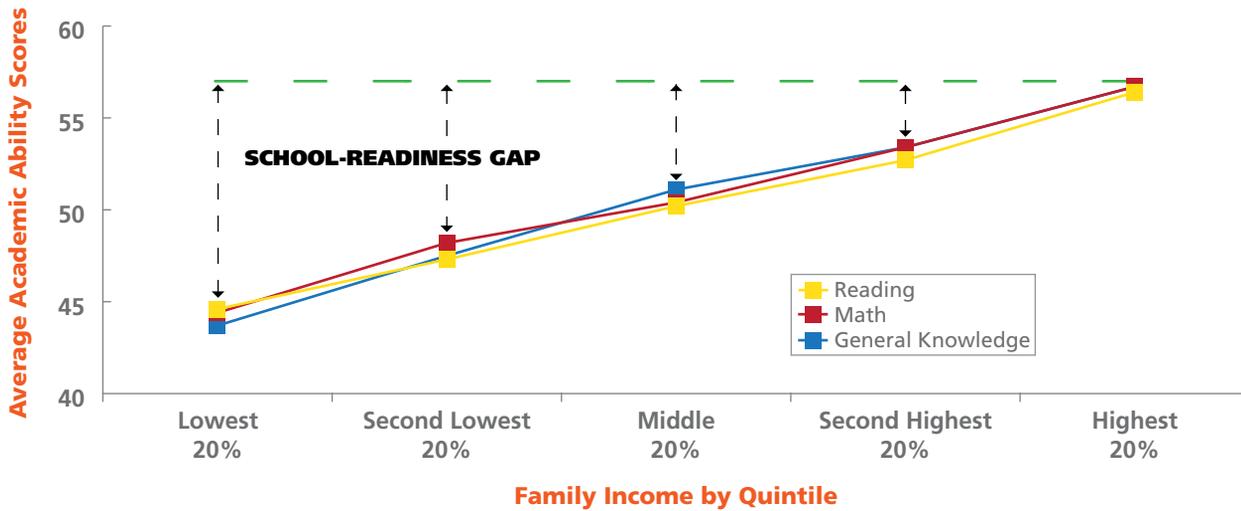
On average, children from low-income families are the furthest behind. But when we look at individual scores

instead of group averages, we see that very low achievement is not limited to children from very low-income homes. In fact, simply because there are many more children who are not poor than children who are, most very low-scoring children are not poor. Likewise, most children who repeat a grade or drop out of school are not poor. These middle-income children need the jump-start that a high-quality preschool program could offer—but without a universal program, most won't get it. If we as a nation focus on children in poverty alone, then we fail to address most of the achievement gap, school failure, and dropout problems.²⁷

A surprising number of studies indicate that all children from middle- and higher-income families (not just those who are behind) would benefit from universal pre-K. The Tulsa study, for example, found positive effects for all income groups. Effects for the highest income group were, on average, 87 percent as large as those for the lowest income group. A similar statewide study of universal pre-K in Oklahoma found test score gains for children who did not qualify for free or reduced-price lunch were 74 percent as large as the gains for children who did qualify. (To qualify,

Closing the School-Readiness Gap

When they enter kindergarten, children from lower- and middle-income families are, on average, far behind their wealthier peers in reading, mathematics, and general knowledge. High-quality preschool could help close this gap in school readiness.



SOURCE: ANALYSIS OF DATA FROM THE EARLY CHILDHOOD LONGITUDINAL STUDY, KINDERGARTEN CLASS OF 1998–99 (SEE NCES.ED.GOV/ECLS/KINDERGARTEN.ASP) BY W. STEVEN BARNETT AND MILAGROS NORES FOR THE NATIONAL INSTITUTE FOR EARLY EDUCATION RESEARCH.

a family's income must be under 185 percent of the poverty level, which is just over \$40,000 for a family of four.) Our study of New Jersey's Abbott pre-K program, available to all children in 31 cities with large low-income populations, found that effects averaged 81 percent as large for those who did not qualify for a school lunch subsidy.

Finally, we also find that targeted policies are bad economics; the added benefits of a high-quality universal program will exceed its added cost.²⁸ Partly, this is because a universal program will reach far more disadvantaged populations; as a result, it will produce larger academic and social gains for all disadvantaged children served. In addition, even if benefits for each middle-income child are only half as large as those for a disadvantaged child, the benefit per child will still far exceed the cost of serving a middle-income child. Perhaps, for high-income families, the benefits per child might not quite justify the cost. However, these children contribute to others' gains through their classroom interactions and, possibly, through their parents lobbying for high quality. High-income families also bear a disproportionate share of the costs through the tax system.

We have calculated costs and benefits under a wide range of assumptions, and have found that the universal approach is a much better public investment. Pre-K for all children is a pro-growth policy that can reduce the future costs of educational failure—expensive remediation, crime, and unemployment. A deep recession is exactly the time to move forward with such a policy. In closing, it's important to note that the United States is not the only source of evidence that high-quality public pre-K helps children from all backgrounds.²⁹ Studies in the United Kingdom find modest positive effects on cognitive and social development that persist at least through the primary grades for children from all socioeco-



Adam talks to Emily Colon during small-group instruction. With Colon's help, the children are using blocks to take measurements.

omic backgrounds. International comparisons find that more preschool education is associated with higher test scores, and high participation rates are associated with less within-country inequality in test scores. These international results reinforce the findings from the United States that high-quality preschool education is valuable for all children. They also confirm a pattern evident in the American research: all children benefit substantially, but disadvantaged children gain more, making preschool an excellent means of increasing overall achievement while narrowing our troubling gaps. □

(Endnotes on page 40)

The Promise of Preschool

(Continued from page 29)

Endnotes

1. L. A. Karoly et al., *Prepared to Learn: The Nature and Quality of Early Care and Education for Preschool-Age Children in California* (Santa Monica, CA: Rand, 2008); and D. M. Early et al., *Pre-Kindergarten in Eleven States: NCEDL's Multi-State Study of Pre-Kindergarten and Study of State-Wide Early Education Programs* (Chapel Hill, NC: NCEDL, 2005).
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6. Good teachers are actively engaged in their continuing professional development. Bowman et al., *Eager to Learn*; and E. C. Frede, "Preschool Program Quality in Programs for Children in Poverty," in *Early Care and Education for Children in Poverty: Promises, Programs, and Long-Term Results*, ed. W. S. Barnett and S. S. Boocock (Albany, NY: SUNY Press, 1998), 77-98. Whitebook et al., *Who Cares?* found that teachers receiving more than 15 hours of training were more appropriate, positive, and engaged with children in their teaching practices.
7. Preschool classrooms typically are taught by teams of a teacher and an assistant. Research focusing specifically on the qualifications of assistant teachers is rare, but the available evidence points to a relationship between assistant teacher qualifications and teaching quality. There is much evidence on the educational importance of the qualifications of teaching staff generally. Bowman et al., *Eager to Learn*; Burchinal et al., "Caregiver Training"; Barnett, "Better Teachers, Better Preschools"; and Whitebook et al., *Who Cares?* The CDA has been recommended to prepare assistant teachers who are beginning a career path to become teachers rather than permanent assistants. S. L. Kagan and N. E. Cohen, *Not by Chance: Creating an Early Care and Education System for America's Children* (abridged report, New Haven, CT: Bush Center in Child Development and Social Policy, Yale University, 1997).
8. The importance of class size has been demonstrated for both preschool and kindergarten. A class size of 20 is larger than the size that has been shown to produce large gains for disadvantaged children. W. S. Barnett, "Long-Term Effects on Cognitive Development and School Success," in *Early Care and Education for Children in Poverty: Promises, Programs, and Long-Term Results*, ed. W. S. Barnett and S. S. Boocock (Albany, NY: SUNY Press, 1998), 11-44; Bowman et al., *Eager to Learn*; J. D. Finn, "Class-Size Reduction in Grades K-3," in *School Reform Proposals: The Research Evidence*, ed. A. Molnar (Greenwich, CT: Information Age, 2002), 27-48; Frede, "Preschool Program Quality"; NICHD Early Child Care Research Network, "Child Outcomes When Child Care Center Classes Meet Recommended Standards for Quality," *American Journal of Public Health* 89 (1999): 1072-1077; and National Association for the Education of Young Children, *NAEYC Early Childhood Program Standards and Accreditation Criteria* (Washington, DC: NAEYC, 2005).
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