

## [Policy Report]

# The Benefits of Prekindergarten for Middle-Income Children

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Research has found high-quality prekindergarten programs to have important and lasting impacts on children's development and success in school and beyond. Most of this research has focused on prekindergarten for economically disadvantaged children—those most likely to start school behind their more affluent peers. Because high-quality preschool produces such positive results for these children, the federal Head Start program is targeted to children in poverty, and the majority of state-funded prekindergarten programs give top priority to economically disadvantaged children. Yet, it is essential that middle-income children have opportunities to participate in high-quality early education experiences as well. Research shows that the need for high-quality preschool education does not stop at the eligibility limits for targeted preschool programs. Rather, it proceeds on a continuum up the income scale. Many middle-income children—particularly those from families in the lower portion of middle income—lack the opportunity to attend high-quality preschool programs and as a result often start school unprepared. This situation can seriously affect their chances for success throughout school.

This policy report examines the importance of improving the school readiness of middle-income children and the role high-quality prekindergarten can play in helping ensure that more of these children enter kindergarten with the cognitive, social, and emotional skills they need. We present evidence that middle-income children frequently lack sufficient access to good early education opportunities, often do not possess the school readiness skills they need when they first enter school, and in many cases have difficulties throughout school. Moreover, we present evidence that high-quality prekindergarten has been effective in addressing these problems by enabling middle-income children to be better prepared for school. Unfortunately, while 38 states invest in some kind of prekindergarten initiative, only two states currently make prekindergarten universally available to families who choose to participate. In addition, many states do not set adequate quality standards for their prekindergarten initiatives. Without strong quality requirements—for well-qualified teachers, high staff-child ratios and small classes, and a comprehensive curriculum, among other standards—prekindergarten programs will not produce the outcomes we want for middle-income children.

Given the historical focus on disadvantaged children, there is a greater need for additional research on preschool and middle-income children. Such studies would help to inform the debates about universal voluntary prekindergarten programs. While several longitudinal studies with control groups have been

conducted to determine the effects of targeted prekindergarten programs on at-risk children, similar research on the effects for middle-income children is much more limited. Indeed, multi-site randomized trials could greatly add to our knowledge about what benefits are produced for all children, including those in middle-income families. Special attention could be given to the effects of variations in program duration, teacher qualifications, class size and other key program characteristics likely to affect both costs and benefits. Still, the fact that additional research is needed to determine how to make prekindergarten work best for middle-income children should not be an excuse for inaction. The weight of the evidence from multiple studies is that middle-income children can and do benefit from good prekindergarten programs.

### **A Word About Terminology**

Although the terms preschool, prekindergarten, and child care are often used interchangeably throughout this report, they are distinct. Preschool is used as a generic term for a classroom-based early childhood education experience for children, generally ages 3 and 4, before they enter kindergarten. Prekindergarten is often used as a more specific term to refer to state-funded initiatives that support preschool classrooms. Child care is typically used to refer to an arrangement with a center, family home, relative, or some other provider to care for a child while a parent works. However, it is important to note that these terms often overlap. For example, a high-quality child care center can offer a good early education experience, and a preschool program may offer extended hours to meet the child care needs of working parents.

### **Many Middle-Income Children Lack Access to Quality Preschool**

Many Americans may be surprised to learn that middle-income children often lack opportunity to participate in early education experiences that could help them enter school fully prepared. Such children are only slightly more likely to attend preschool than children with the lowest incomes, and are much less likely to attend preschool than higher-income children. Among families with incomes between \$30,000 and \$75,000, just half (50 percent) of children ages 3 and 4 who are not yet in kindergarten, are enrolled in preschool. This compares with 41 percent of children in the same age group whose families have incomes below \$30,000 and 74 percent of those whose families have incomes \$75,000 and above.<sup>1</sup>

Studies indicate that the supply of early care and education programs in middle-income neighborhoods is often no greater than in low-income neighborhoods and in some cases, even more scarce. A study of California child-care programs found that the number of center slots per 100 children ages 2 to 5 in low-middle income neighborhoods was the same as in low-income neighborhoods (22), and that the number in high-middle income neighborhoods was only slightly greater (24). Availability in all of these areas was much more limited than in high-income neighborhoods, which had 29 slots per 100 children.<sup>2</sup> Similarly, a study in Boston found that some working-class communities had a more limited supply of licensed child care slots relative to the child population than low-income areas.<sup>3</sup>

Much of the care that is available in middle-income communities is of inadequate quality. One study that examined a range of settings found that the childcare arrangements of middle-income children in fact had poorer quality ratings across a variety of measures than those settings predominantly serving children from low-income families.<sup>4</sup> The study analyzed data from the Profiles of Child Care Settings Study, which surveyed a nationally representative sample of 2,089 center directors,<sup>5</sup> and the National Child Care Staffing Study, which involved on-site visits to 227 centers in five metropolitan areas (Atlanta, Boston, Detroit, Phoenix, and Seattle). Centers serving mostly middle-income children offered lower wages and fewer benefits to teachers, had a smaller proportion of teachers with specialized and in-service training, and had higher staff turnover rates.<sup>6</sup>

Middle-income centers scored lower on a rating scale that reflected the appropriateness of teacher-child interactions and teacher supervision than higher-income centers, and were less likely to offer appropriate activities compared to both higher-income and lower-income centers. In addition, teachers in middle-income centers were significantly more strident in their interactions with children than in higher-income centers. On a four-point scale used to measure teachers' "harshness"—such as the extent to which they were punitive or critical toward children—teachers in middle-income centers rated a 1.64 compared to 1.46 for teachers in higher-income centers. Another study of preschool and kindergarten programs found that programs serving mostly poor children had smaller child-adult ratios and were more likely to embrace the child-centered approach to instruction favored by early childhood experts than programs primarily serving middle-income children.<sup>7</sup>

Middle-income families' lack of access to high-quality preschools is likely due to the fact that they earn too much to qualify for publicly funded programs, yet earn too little to be able to afford such programs on their own. Head Start and state prekindergarten programs that are offered free of charge are generally only available to low-income families. Among states with publicly funded preschool education programs, only Georgia and Oklahoma currently offer universal prekindergarten. The remaining states serve mainly children from low-income families, although many states permit at least some children above the income cutoff to qualify based on having other risk factors (see Table 1). Nationally, most middle-income families have to pay for preschool out of their own pockets. Faced with the high cost and low availability of high-quality preschool programs, many middle-income families are simply unable to enroll their children in preschool or have no choice but to use lower-cost programs that may be of lower quality.

## Eligibility for State Prekindergarten Program: Use of Risk Factors (2002-2003)

State	Income cutoff	Can children above the income cutoff qualify based on other risk factors?
Alabama	None	NA (no income cutoff)
Arizona	185% FPL	No
Arkansas	156% FPL	Yes (Risk factors considered include: abuse or neglect, low birth weight, limited English proficiency)
California	230% FPL	Yes (Children given top priority, regardless of income, if receiving protective services, victim of abuse or neglect, or at risk of abuse or neglect)
Colorado	185% FPL	Yes (Risk factors considered include: homelessness, drug or alcohol abuse by family member, low parental education)
Connecticut	75% SMI	Yes (Up to 40% of children served in each community may be over income)
Delaware	100% FPL	Yes (Up to 10% of children served may be over income; at least 10% of children served must have a disability)
Georgia	None	NA (no income cutoff)
Hawaii	85% SMI	No (Among children meeting the income cutoff, those with special needs given priority)
Illinois	None	NA (Children identified as being at risk are eligible; risk factors determined locally and include poverty, drug or alcohol abuse, non-English speaking, and teen parents)
Iowa	130% FPL	Yes (Up to 20% of children may qualify by having one or more risk factors, including developmental delay, exposure to abuse, limited parental education)
Kansas	130% FPL	Yes (Risk factors considered include: developmental delay, English Language Learners, migrant children, teen or single parent)
Kentucky	130% FPL	Yes (Children with disabilities are also eligible)
Louisiana 8(g)	None (priority given to low-income children)	NA (no specific income criteria)
LA4 & Starting Pts	185% FPL	No
Louisiana NSECD	200% FPL	No
Maine	None	NA (no income cutoff)

SMI: State Median Income

FPL: Federal Poverty Level

## Eligibility for State Prekindergarten Program: Use of Risk Factors (2002-2003)

State	Income cutoff	Can children above the income cutoff qualify based on other risk factors?
Maryland	None	NA (no income cutoff; children qualified based on risk factors including homelessness, referral, previous Head Start experience, health issues) <b>Note:</b> Eligibility criteria were revised for 2003-2004, giving priority to children eligible for free or reduced-price lunch (income below 185% FPL) and homeless children
Massachusetts	Up to 125% of SMI (after families up to 100% SMI are served)	Yes (Risk factors considered include: premature birth, low birth weight, homelessness, parent with disability)
Michigan	185% FPL	Yes (Up to 50% of children enrolled may be over income if they have at least 2 other risk factors)
Minnesota HdSt	100% FPL	Yes (Up to 10% of children served may be over income; at least 10% of children served must have a disability)
Missouri	None (priority given to programs serving low-income children and children with special needs)	NA (no income criteria)
Nebraska	None (at least 70% of programs' budgets must be used to serve children who are eligible for free or reduced-price lunch, were born prematurely or low birth weight, have teen parents, or are English Language Learners)	NA (no set income criteria)
Nevada	None (most programs give priority to low-income children)	NA (no set income criteria)
New Jersey Abbott	None (program limited to districts where at least 40% of children qualify for free or reduced-price lunch)	NA (no set income criteria; all children in eligible districts qualify)
New Jersey ECPA	None (program limited to districts where 20-40% of children qualify for free or reduced-price lunch)	NA (no set income criteria; all children in eligible districts qualify)
New Mexico	None (local communities set enrollment priorities)	NA (no set income criteria)
New York EPK	Economically disadvantaged (eligibility for free or reduced-price lunch, food stamps, Medicaid, etc.)	NA (no set income criteria)
New York UPK	None	NA (no set income criteria)
North Carolina	None (low-income children given priority)	NA (no set income criteria; children given priority if have risk factors related to health status, disability, parent education, English proficiency) <b>Note:</b> Eligibility criteria were revised for 2004-2005, requiring at least 80 of participants to have incomes at or below 75% SMI

SMI: State Median Income  
FPL: Federal Poverty Level

## Eligibility for State Prekindergarten Program: Use of Risk Factors (2002-2003)

State	Income cutoff	Can children above the income cutoff qualify based on other risk factors?
Ohio HdSt	185% FPL	Yes (Up to 10% of children served may be over income; at least 10% of children served must have a disability)
Ohio PSP	185% FPL	No
Oklahoma	None	NA (no income criteria)
Oregon	100% FPL	Yes (Up to 20% of children served may be over income; at least 10% of children served must have a disability)
Pennsylvania	None	NA (no income criteria)
South Carolina	None	NA (no set income criteria; children qualify based on risk factors including limited parent education, enrollment in Even Start, having an Individual Education Program [IEP], and low income)
Tennessee	185% FPL (highest priority)	Yes (Children eligible if at risk for abuse or neglect, in state custody, or have an Individual Education Program [IEP])
Texas	185% FPL	Yes (Children eligible if homeless or unable to speak or comprehend English)
Vermont	185% FPL	Yes (Up to 50% of children may qualify based on other risk factors including developmental delay, at risk for abuse or neglect, limited English proficiency, poor parental education, social isolation)
Virginia	None (eligibility based on locally determined risk factors)	NA (no set eligibility criteria; risk factors considered include poverty, homelessness, limited parental education, chronically ill parents)
Washington	110% FPL	Yes (Up to 10% of children may be over income; at least 10% must be children of migrant/seasonal farm workers or Native Americans)
West Virginia	None	NA (no income criteria)
Wisconsin – 4K	None	NA (no income criteria)
Wisconsin HdSt	100% FPL	Yes (Up to 10% of children served may be over income; at least 10% of children served must have a disability)

SMI: State Median Income

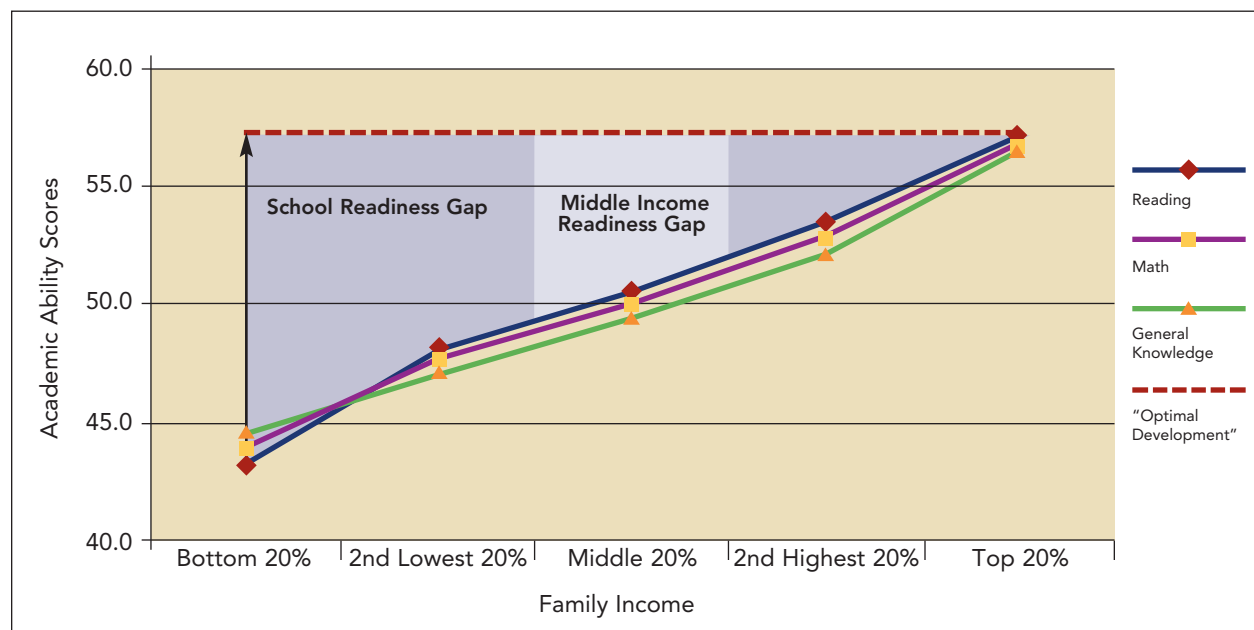
FPL: Federal Poverty Level

## Many Middle-Income Children Do Not Start School Ready to Succeed

When children do not have sufficient early education experiences, they start school lacking the social and academic skills that are critical to school success.<sup>8</sup> Arriving at kindergarten without the early education experiences children need is not uncommon. Maryland, for example, found that only 52 percent of children who entered kindergarten in 2002 were “fully ready.”<sup>9</sup> In a 2001 statewide survey, Colorado kindergarten and first-grade teachers reported that four out of 10 children were not academically prepared for school and that about one-third of their students were not socially and emotionally prepared.<sup>10</sup> In a 1995 survey of 3,500 kindergarten teachers from across the country, many reported that large proportions of their students lacked important school readiness skills. For example, 46 percent of the kindergarten teachers reported that at least half the students in their classes had difficulty following directions, 36 percent reported that at least half of their class lacked academic skills they needed, and 34 percent reported that at least half of their class had difficulty working independently.<sup>11</sup>

While low-income children are more likely to have difficulties when they enter school, it is not only low-income children who experience problems as they begin kindergarten. In 1998, a national sample of middle-income first-time kindergarten students participating in the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K) performed better than low-income children on cognitive tests, but more poorly than high-income children. Dividing the children into five income groupings, the children in the middle group (the middle quintile) scored 6 points higher in reading, 7.3 points higher in general knowledge, and 6.5 points higher in math than the children in the bottom quintile (the 20 percent of families with the lowest incomes). Yet, they were still 6.7 points lower in reading, 6.5 points lower in general knowledge, and 6 points lower in math than children in the top quintile (the 20 percent of families with the highest incomes)<sup>12</sup> (See Figure 1). A similar pattern is found for the social skills of children at different income levels, with middle-income children performing better than low-income children but below the levels of high-income children (See Figure 2).

Figure 1. Academic Abilities of Entering Kindergartners by Family Income

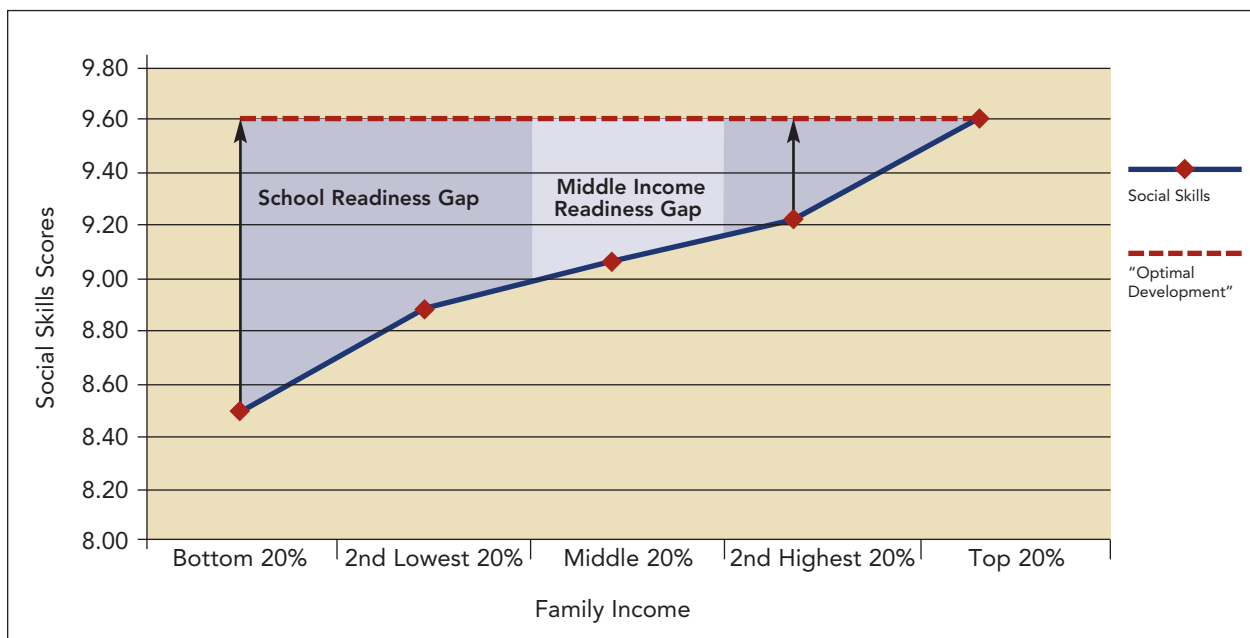


Without a strong start, many middle-income children fail to make adequate progress as they continue through elementary school. In 2003, 37 percent of fourth graders scored below basic on the reading section of the National Assessment of Educational Progress (NAEP).<sup>13</sup> While low-income children were much more likely to score below basic, there were also many middle-income children whose reading skills lagged behind. The majority (59 percent) of non-poor children (those with family incomes above the cutoff to qualify for free and reduced-price lunch) had not reached the proficient level in the NAEP study, including one-quarter of non-poor children who were not reading at the basic level.<sup>14</sup>

A high rate of grade retention further indicates that many middle-income children are struggling in school. Twelve percent of middle-income (the middle 60 percent by income) children repeat a grade.<sup>15</sup> Although this is lower than the *percentage* of low-income children who are retained in a grade (17 percent), the larger size of the middle-income population overall means that the *number* of middle-income children who are retained is greater. As a result, the success or failure of this group can have a significant impact on state and local education budgets.

Middle-income children also experience a relatively high dropout rate, with more than one out of ten (11 percent) failing to complete high school.<sup>16</sup> This indicates that economic disadvantage is not the only factor that places children at risk of dropping out. These children can experience other risks, such as mental health issues, family stresses and drug and alcohol abuse, that can affect their likelihood of graduating high school, according to a study of 200 middle-income children who had dropped out of school and entered an experimental alternative educational program in Fort Worth, Texas between September 1986 and May 1988.<sup>17</sup> Moreover, the study found that, above any of these problems, the decision to drop out most frequently stems from children’s sense of alienation in school. This demonstrates the importance of helping children build a strong relationship with their teachers and schools from the start.<sup>18</sup>

Figure 2. Social Skills of Entering Kindergartners by Family Income



## High-Quality Early Education Gives Middle-Income Children a Boost

Evidence has accumulated rapidly in recent years indicating that increasing middle-income children's access to high-quality early education programs is an effective approach to improving their readiness and school success. This body of evidence includes the results of a rigorous evaluation of universal prekindergarten.

A study of Oklahoma's universal prekindergarten program shows that the benefits of early education extend to middle-income children.<sup>19</sup> The study examined scores from three tests taken by approximately 4,700 prekindergarten and kindergarten students in Tulsa in September 2003. Children who had just completed the prekindergarten program served as the treatment group and children about to begin the program served as the control group. While only children in the lowest income category—those eligible for free lunch—showed significant gains on a test of pre-numeracy skills, children in all three income categories—children eligible for free lunch (incomes under 130 percent of poverty), those eligible for reduced-price lunch (incomes between 130 and 185 percent of poverty), and those with incomes too high to qualify for free or reduced-price lunch—made significant gains in letter-word identification and spelling scores.

The Oklahoma study found that some of the greatest gains were not for children with lowest incomes, but for children in a somewhat higher income category. Children eligible for free lunch achieved greater gains on letter-word identification and spelling scores (56 percent and 31 percent gains, respectively) than children paying full price for lunch (41 percent and 17 percent gains, respectively). However, scores rose the most for children eligible for reduced-price lunch, with a 74 percent increase in letter-word identification and a 37 percent increase for spelling. It is children in this middle category who may be most vulnerable to missing out on prekindergarten opportunities since their families likely earn too much to qualify for means-tested programs such as Head Start. Yet their incomes are not far above the poverty line. Such families may find their finances drained by the costs of the child care they must have in order to work, which is often of poor quality given that they cannot afford better quality care. For these families, a good early education may remain out of reach. A prekindergarten program like Oklahoma's—which is not only universally available at no charge to parents but also has strong quality standards, such as a requirement that teachers have higher degrees in early education—can help address this gap.

Further evidence of the benefits of high-quality preschool for middle-income children is provided by the Cost, Quality, and Outcomes Study, a longitudinal study involving child care centers in four states.<sup>20</sup> This study followed a sample of children with a wide variety of family backgrounds from their next-to-last year in preschool (prior to entering kindergarten) through their early elementary school years. Higher quality programs were found to be associated with better cognitive and social outcomes for children across the economic spectrum.

Another longitudinal study found that preschool education had positive effects on the second- and third-grade achievement scores of boys from low-risk, educationally advantaged families.<sup>21</sup> The study involved about 200 children randomly assigned to an experimental group given a free preschool education at Brigham Young University Preschool or a control group that did not receive a free preschool education. There were no significant differences in test scores between girls who attended preschool and girls who did not. However, boys who participated in the preschool program performed significantly better on reading, language, and spelling tests and scored higher overall. This is despite the fact that boys (and girls) in the control group already scored above average on these tests.

Several large-scale studies of preschool in the United States and abroad offer further evidence that preschool matters for children from a wide variety of backgrounds. Although these studies do not use experimental designs, and therefore cannot as easily distinguish the impact of preschool from other factors that influence children's development and academic progress, the consistency with which these studies identify a link between preschool attendance and positive outcomes strengthens the case.

One analysis examined the impact of preschool on children in the United States using data from the Early Childhood Longitudinal Study. The analysis, which involved a representative sample of 12,800 children who attended kindergarten in the fall of 1998, found higher reading and math scores and lower retention rates for all children who had attended preschool, after controlling for other background characteristics.<sup>22</sup> While the effects of preschool were somewhat greater for disadvantaged children than other children, the impact on grade retention was similar across different groups of children.

Similarly, a national longitudinal study in Canada found that children who attended early education programs performed better academically in kindergarten and first grade, regardless of their family income level or their mother's educational background.<sup>23</sup> In a study that followed 20,000 French children, preschool participation was determined to correlate with lower rates of grade retention and higher academic achievement for children from different socioeconomic groups, with larger effects observed the further children went along in school.<sup>24</sup> In addition, a recent study that tracked a sample of children from five regions across England concluded that quality preschool was associated with positive cognitive and social development for children from economically advantaged and disadvantaged backgrounds alike.<sup>25</sup>

Findings from a study of Georgia's universal prekindergarten program, which is available on a voluntary basis to all children regardless of income level, also suggest that middle-income children benefit from such programs.<sup>26</sup> Children who participated in the program gained during the course of the year relative to national norms. In fact, children in the program, who came from a wide variety of economic backgrounds, actually gained on their more advantaged counterparts who attended private preschool programs. On the Peabody Picture Vocabulary Test of receptive language skills, Georgia prekindergarten children gained 4.32 points between the start of preschool and the start of kindergarten, compared to a gain of 3.42 points for private preschool children; on letter and word recognition, Georgia prekindergarten students increased their scores by 4.29 points while private preschool children had an increase of 1.82 points; and on a test of pre-math problem solving skills, Georgia prekindergarten children gained 3.82 points while private preschool children gained 3.13 points.

In addition to positive impacts on children's cognitive and social development, preschool programs also can have favorable effects on parents and their relationship with their children. There is evidence that programs incorporating a parent education component can increase the likelihood that middle-class parents will regularly engage in positive activities with their children.<sup>27</sup> A study of 127 middle-class families attending the Brigham Young University preschool and parent education program found that fathers participating in the program increased the number of 20-minute one-on-one activities they did with their children. Other research has indicated that in middle-income families, young children in child care or preschool spend more time interacting with their fathers than those in home care. A study involving 40 3-year-olds enrolled in two centers in the metropolitan Memphis area determined that children in child care spent an average of 30 hours per week in activities with their father, compared to 15 hours per week

for children in home care. The time mothers spent with their children was not affected. These findings help counter concerns that preschool could cut into parents' time with their children, demonstrating that preschool can actually increase parent-child interactions.<sup>28</sup>

## Policy Recommendations

Several steps can be taken to enable middle-income children to have access to early education experiences that will prepare them to succeed in school:

*Expand publicly funded prekindergarten programs to include middle-income children.* Many middle-income children are missing opportunities to participate in early education programs that would clearly benefit them and society at large. America cannot afford to lose one in ten children from middle-income families to school failure and a lifetime of limited economic productivity. Making publicly funded programs now primarily targeted to the most disadvantaged more broadly available will enable more middle-income children to have greater access to prekindergarten. Of course, it is essential that sufficient resources be provided for additional slots in these programs so that the participation of middle-income children does not come at the expense of program quality or access for low-income children.

*State quality standards for child care and early education programs should be strengthened to ensure that prekindergarten is educationally effective.* Research demonstrates that child care and early education programs are most effective in producing positive outcomes for all children, including middle-income children, when they are of high quality. It is essential that states set strong standards to ensure that children—whether attending a private or public program, whether part day or full day—receive an education that significantly improves their development and learning.

*Additional research should be conducted to increase our knowledge of effective prekindergarten for middle-income children.* Much more can be learned about how to best educate young children to make the most of every child's potential, including middle-income children. Special attention should be paid to identifying those at higher risk of school failure and precise strategies for improving their developmental trajectories. Studies should investigate the full range of potential benefits for children's cognitive and social development as well as other areas such as children's attitudes toward school. Ideally, many studies would employ an experimental design.

## Endnotes

- <sup>1</sup> Calculations using data from the U.S. Census Bureau. *School enrollment—Social and economic characteristics of students: October 2002 detailed tables*. Table 3. Preprimary School Enrollment of People 3 to 6 Years Old, by Mother's Labor Force Status and Education, Family Income, Race and Hispanic Origin: October 2002. Available at <http://www.census.gov/population/www/socdemo/school/cps2002.html>.
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- <sup>3</sup> Wen, P. & Dedman, B. (September 1, 2002). Stuck in a day-care dilemma working-class families struggle with shortage. *The Boston Globe*, B1.
- <sup>4</sup> Phillips, D. A., Voran, M., Kisker, E., Howes, C., & Whitebook, M. (1994). Child care for children in poverty: Opportunity or inequity? *Child Development*, 65, 472-492.
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- <sup>9</sup> Bowler, M. (March 26, 2003). Fifty-two percent of Kindergartners in Maryland judged 'fully ready.' *Baltimore Sun*.
- <sup>10</sup> Educare Colorado and Colorado's Children's Campaign. (February 20, 2002). First-ever statewide K-1 teacher survey on school readiness. Available at [http://www.ecs.org/clearinghouse/33/40/3340\\_files/frame.htm](http://www.ecs.org/clearinghouse/33/40/3340_files/frame.htm).
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- <sup>12</sup> Data from the Early Childhood Longitudinal Study—Kindergarten Cohort (Fall 1998) conducted for the National Center for Education Statistics.
- <sup>13</sup> National Center for Education Statistics. (2003). *National assessment of educational progress, The nation's report card, Reading highlights 2003 (2004-452)*. Washington, DC: U.S. Department of Education.
- <sup>14</sup> National Center for Education Statistics. (2003). *National assessment of educational progress, The nation's report card, Reading highlights 2003 (2004-452)*. Washington, DC: U.S. Department of Education. Table B.7 Average reading scale scores and achievement-level results, by eligibility for free/reduced-price school lunch, grade 4 public schools: By state, 2003. (The data were not broken down into more detailed income groups.)
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- <sup>16</sup> Multi-year averages based on figures from the National Center for Education Statistics. (1997). Washington, DC: U.S. Department of Education.
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- <sup>18</sup> Schweinhart, L. J. (2004). *The High Scope Perry Preschool Study Through Age 40*. Ypsilanti, MI: High/Scope Press.
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