



Education

School readiness is based upon skills that children learn in their first years of life.

It's often said that parents are a child's first teachers and home is the nation's smallest schoolhouse. Everything that happens in the first few years of life contributes a child's development, and establishes the foundation on which later successes are built. The first three years are vital, for example, in early language development, in the formation of pre-reading and pre-math skills, in symbol and pattern recognition, and in the early development of emotional control and of the social skills that lead to school success.



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Children are expected to arrive at kindergarten able to pay attention for reasonable periods of time, able to resolve conflicts with their classmates in peaceful ways, and able to follow two and three step directions. They also are at an advantage if they bring a familiarity with language and a developing vocabulary, if they are familiar with story telling and enjoy being read to, and if they have some familiarity with letters and numbers. These basic skill sets allow children to participate effectively and raise the likelihood that they will thrive in school and beyond.

Children who enter kindergarten with a strong early foundation of cognitive, behavioral, and social skills generally have higher academic outcomes throughout school. Children who lack this foundation are at higher risk for poor test scores, being held back a grade, being placed in special education classrooms, and dropping out of school.¹ Unfortunately, as is true across the country, many children in Memphis reach kindergarten with major delays in both social-emotional and cognitive development. Research suggests that, nationwide, over one third of children are not prepared when they reach kindergarten.²

Differences in early experiences translate into differences in school readiness.

School readiness is based on skills that children learn in their first years of life. Early experiences during this period have long-term implications for children's later achievement, and differences in readiness among children are largely a reflection of differences in their early exposure to risk factors like poverty.³ Children from low-income families begin school at a disadvantage. Research has shown that on some cognitive measures, children from impoverished backgrounds are already a full year behind their more affluent peers when they first arrive at kindergarten.⁴

A large part of the readiness and achievement gap between different racial and ethnic groups is explained by socioeconomic differences between these groups. There is a strong association between family income and the level of student preparedness for kindergarten: the higher the income, the better prepared the student.^{5,6}

There are many reasons for these differences. Compared to middle-class children, poor and low-income children have fewer books at home and enjoy fewer early learning opportunities. As a general rule, there are also significant differences in language and literacy patterns between low and middle-income households. Middle-class parents tend to engage in more direct conversation with their children. They ask more questions, use a larger vocabulary, and are more likely to offer praise and encouragement.⁷ As a result, there are large socioeconomic differences among young children's language and cognitive development that often become differences in school readiness and academic success.

Beating the odds: Low-income children and school readiness.

Memphis City Schools (MCS) use a measure called the Kindergarten Readiness Indicator (KRI) to help kindergarten teachers understand the level of readiness of incoming kindergarten students. In a recent policy brief from The Urban Child Institute and Memphis City Schools, the authors find a strong correlation between family income and the level of school readiness. In general, the higher a family's income, the better prepared their child will be when he or she reaches kindergarten.

Importantly, this study also indicates that the relationship between income and readiness is not fixed. A significant number of children from poor families and neighborhoods reach kindergarten well prepared. Healthy and developmentally rich early life experiences, such as positive parenting and high-quality early education, can make a profound difference when it comes to the educational trajectory of disadvantaged children.

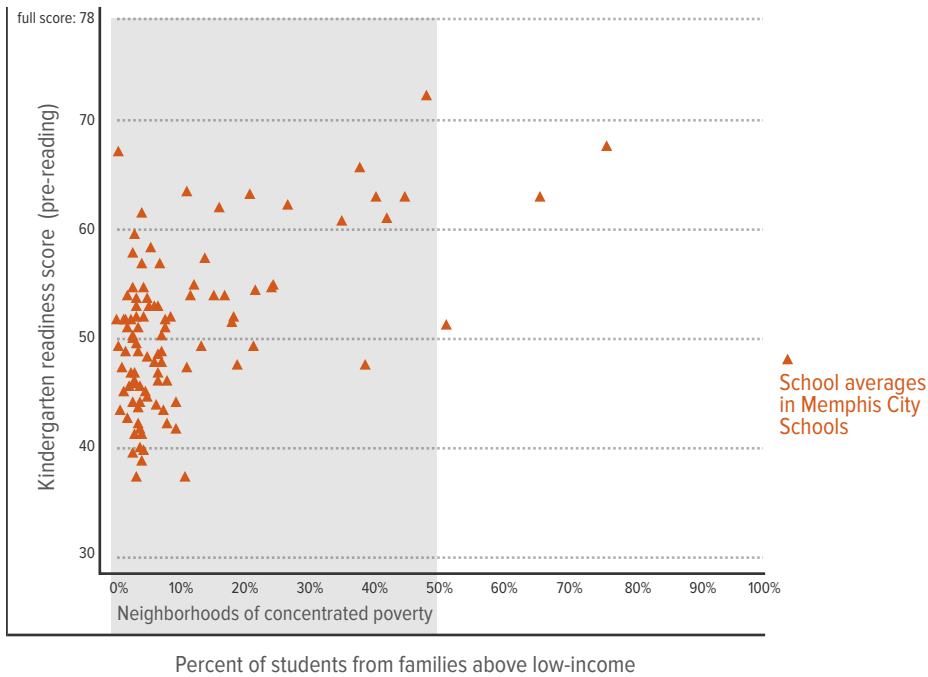


FIGURE 1:
Average School
Kindergarten
Readiness
Indicator by
Poverty

Source:
Sell, M. & Imig, D.
Understanding the
relationship between
family income and
school readiness in
Memphis. 2011.
Available at:
[http://www.tuci.org/
sites/all/files/Readi-
ness.2011-02-18.pdf](http://www.tuci.org/sites/all/files/Readiness.2011-02-18.pdf)

Figure 1 shows the relationship between family income and levels of kindergarten readiness in each Memphis City School. The vertical axis indicates the average KRI reading score of each elementary school (so that the higher the school's position on the graph, the higher the school's average score). Meanwhile, the horizontal axis indicates the percentage of economically disadvantaged children in each school. (Following the federal government's definition, economically disadvantaged students are those children who are eligible for free or reduced-price lunch.) Schools further to the right in the figure have more children from higher-income families. As the graph indicates, schools with higher concentrations of low-income children generally have lower levels of kindergarten readiness.

But even more striking are the differences in levels of school readiness among schools that serve predominantly low-income children. While it's true that the lowest levels of readiness are found among low-income schools, it is also true that some low-income schools receive incoming kindergartners who are extremely well prepared. As the figure suggests, many Memphis children who would traditionally be considered 'at risk' arrive at school prepared to learn.

Quality education before kindergarten prepares children to begin school.

One of the factors that can make a tremendous difference in improving school readiness is the quality of a child's earlier educational experiences. Study after study makes it clear that children who attend a pre-kindergarten program in the year before kindergarten score higher on language and math tests, even after accounting for differences in background factors like race and family income.⁸

A recent and careful evaluation of Tennessee's Pre-K program conducted by researchers from Vanderbilt University offers a clear-eyed assessment of the benefits of pre-kindergarten in Tennessee. In 14 school districts across the state, a standardized test of early language and math skills was administered to a group of children who attended pre-k and to a group of children who did not. Both groups took the test at the beginning of the pre-k year and again at the end of the year. The gains made by pre-k participants were then compared to the gains made by non-participants.

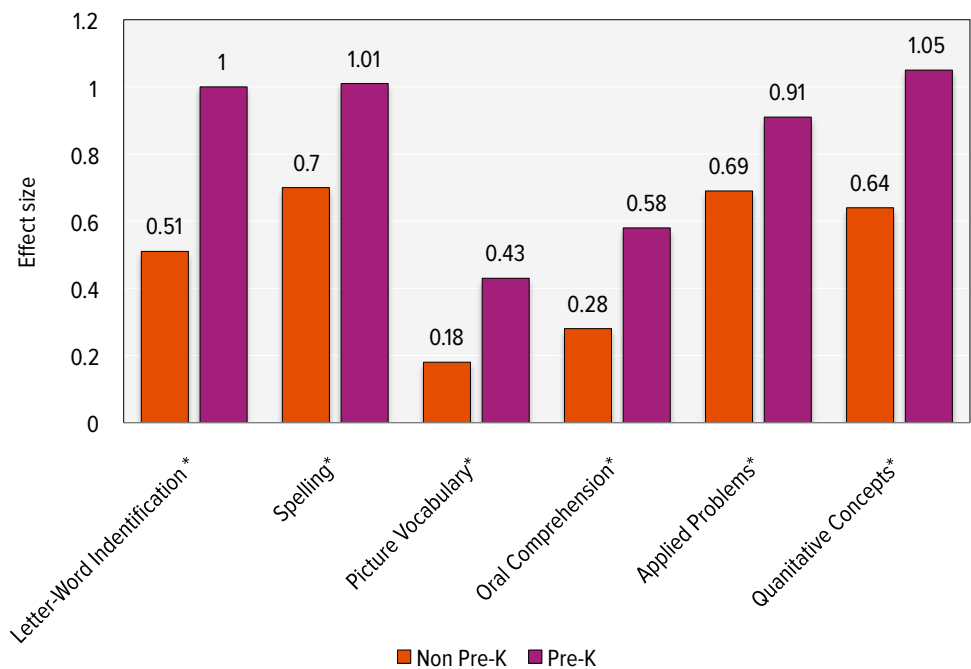
Figure 2 reports on the findings of the Vanderbilt Study, and shows the average effect sizes for both groups on the six skill areas measured by the assessment.

- Children who attended pre-k showed greater improvements in all areas than children who did not attend.
- The largest differences were seen for language-related skills (Letter-Word Identification, Spelling, Vocabulary, and Oral Comprehension).
- For all six skill areas, the differences between pre-k and non-pre-k children were statistically significant.

FIGURE 2:
Tennessee
Woodcock Johnson
Scores Before and
After Pre-k

Source: Lipsey, M. & Farran, D. Evaluating the effectiveness of Tennessee's voluntary pre-k program: Initial results. Peabody Research Institute & Vanderbilt University, 2011.

Available at: http://peabody.vanderbilt.edu/Documents/pdf/PRI/Summary_TN%20State%20Pre-K%20Study%20initial%20results2.pdf



These findings align with the results of a recent study of kindergarten readiness in MCS. In this analysis, incoming students' scores on the KRI were grouped according to children's educational experiences before kindergarten.

The results are telling: Kindergartners who attended MCS pre-kindergarten, a Head Start program, or center-based care earned markedly higher scores on the KRI than students who did not attend a similar program.

Illustrating the findings of that report, Figure 3 shows KRI scores according to the type of care children received in the year before kindergarten.

- Children who attended MCS Pre-K had, on average, the highest kindergarten readiness scores.
- Head Start children and children from center-based childcare had similar average scores.
- Children who did not attend pre-k, Head Start, or center-based care had the lowest average scores.

These results are consistent with previous research. Studies using large, national samples of children find that children in pre-kindergarten or center-based care at age four are better prepared for kindergarten than children who were cared for exclusively by parents or relatives. Pre-kindergarten programs are typically found to have greater benefits than other types of care.⁸

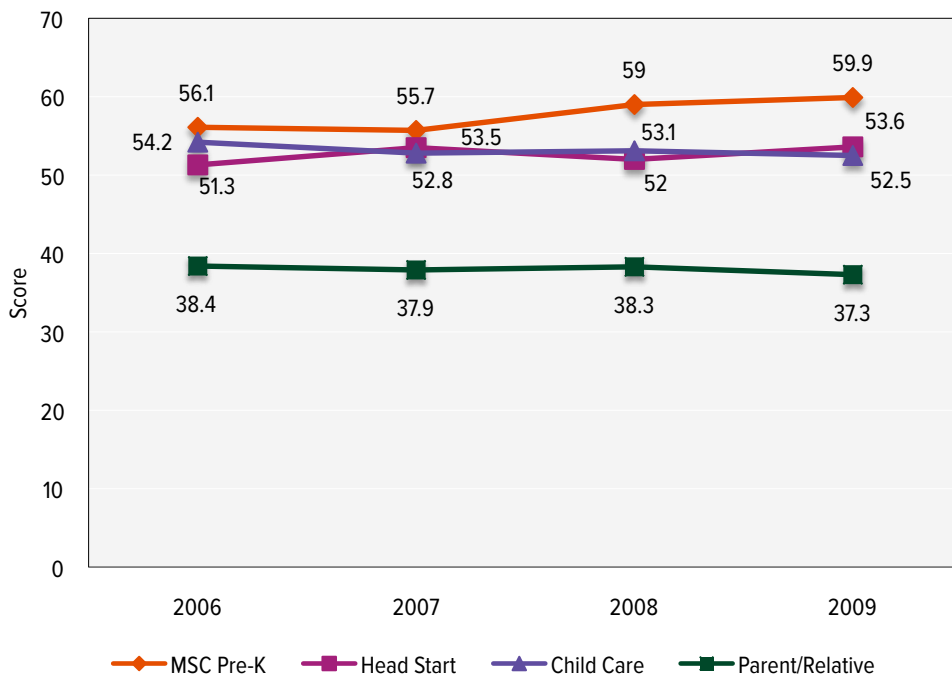


FIGURE 3:
Memphis City
School Kindergarten
Readiness Indicator
Scores by Type of
Care in Previous
Year

Source: Banks, T. & Sell, M. The effects of pre-k experience on Kindergarten Readiness Indicator scores: 4 year trends. Memphis City Schools Office of Evaluation. Available at: <http://www.mcsk12.net/docs/Data/PreK/Effects%20of%20Pre-K%20Experience%20on%20KRI%20Scores%20-%204%20Year%20Trends.pdf>

Pre-kindergarten gains are strengthened when we start much earlier.

The evidence is clear: Pre-kindergarten education raises children's school readiness scores. Still, persistent readiness gaps remain between racial and socioeconomic groups, and these readiness gaps become achievement gaps as children make their way through school. A proven response would be for a community to make meaningful, long-term investments in high quality early childhood education, beginning long before pre-kindergarten.

Recently, Edward Zigler, the father of the federal Head Start Program, commented on our growing scientific understanding of early development: "Today, as opposed to 1965, there is a vast literature available to inform planners and policymakers. The Nobel laureate James H. Heckman has studied this literature and concluded that program payoffs are much higher for young children than they are for interventions that occur at later ages. And the national impact study of Title I supported this position, showing that younger students benefited more from reading instruction than older ones ... So it would seem that a key guide to effective programming is 'the younger the better'."⁹

The foundation for school readiness is already being built in the first three years of life. For instance, stimulating learning environments and engaged, responsive parenting in infancy have been linked to language and cognitive abilities at age three.¹⁰ The learning disparities that result in school readiness gaps are based in early experiences. The black-white gap in school readiness scores is already apparent by age three, and tends to grow larger throughout the preschool and elementary years.¹¹ Similarly, low-income children have fallen behind their middle-income peers in vocabulary and pre-reading skills by age three.^{5,12}

Early experiences affect children's early brain development.

The reason for the early appearance of these achievement gaps involves the way that a child's brain develops in the first years of life. The first three years are an especially important period for brain development. In areas of the brain most closely associated with cognitive and language skills, most connections are formed before age three. In fact, the brain forms many more synapses than it needs, then gradually prunes away connections which are rarely or never used. A child's early experiences help decide which connections become stronger and which connections are eliminated.^{13,14}

Positive experiences help create strong and efficient connections that form the foundation for more advanced networks that will be formed later. A child's ability to achieve in preschool and kindergarten is tied to early skills that were learned before age three.¹⁵ By the same token, risk factors like poverty can begin affecting children's language and behavioral development in the first three years,¹⁶ and recent research shows that risk exposure in infancy is more detrimental to a child's school readiness than risk in the preschool years.¹⁷

There is growing evidence that poverty-related differences in learning stimulation and responsive parenting between low-income and higher-income families lead to differences in children's brain structure and functioning in the first years of life.^{18,19} These differences, in turn, translate into disparities in cognitive and emotional development, and this process is well underway by the time children reach preschool age.

Investments in children should begin earlier.

Research shows that the effects of poverty and other risk factors can be dramatically reduced by interventions that reach children during their first three years, when brain development is particularly responsive to positive experiences. Early intervention improves cognitive, language, and behavioral development, giving children a more secure foundation for school readiness and long-term well-being.^{20,21}

Investments that target children's earliest years of development establish the foundation for the highest rate of returns, particularly when they are combined with effective later intervention. As the economist James Heckman argues, the most effective intervention strategy is to "invest early and don't stop".²²

As our understanding of early childhood brain development expands, so too should our appreciation for the importance of high-quality early care and education. During this period, the foundation is laid for all subsequent development. As a result, the first years of life represent an exciting opportunity for us to improve the future well-being of our community. The quality of the care that children receive at home and in child-care settings makes a tremendous difference.

When children arrive at kindergarten without the developmental skill-sets in place to thrive, they are more likely to struggle and fall behind in school, are more likely to engage in risky behaviors as teenagers and become teen parents, and are more likely to drop out of high school. On the other hand, young children who are nurtured by warm, supportive caregivers in the first years of life develop greater social competence, exhibit fewer behavioral problems, and develop enhanced thinking skills.²³ This foundation, in turn, translates into enhanced academic performance and greater lifetime well-being. This is what we would wish for all children.

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