

Early experiences affect a child's cognitive and brain development.

A child's earliest experiences strongly influence his later development. Ideally, children spend their earliest years in nurturing surroundings that promote optimal brain development and provide young children with a solid foundation on which their later skills and abilities will be built. Conversely, when children grow up in an environment characterized by toxic stress, chaos, and uncertainty, their ability to develop to their full potential is hindered.¹ As a result, children from economically and socially disadvantaged homes often reach kindergarten far behind their peers in the skills needed to succeed academically.

Beginning at birth, many of our community's youngest children are affected by economic

factors, family circumstances, and health risks that are often associated with later difficulties in school.² Of the 14,000 babies born in Memphis in a typical year:

- more than 70 percent are from poor or low-income families.³
- 11 percent are born at low birth weight.³
- about 16 percent are born to a teenage mother.³
- more than 60 percent are born to an unmarried mother.³
- 30 percent are born to a mother who lacks a high school diploma.³

Children who are prepared to enter kindergarten are more likely to succeed throughout school.

Kindergarten readiness refers to a child's ability to participate successfully in the learning process when he reaches school. Children who are unprepared for kindergarten often have a difficult time catching up with their classmates: school readiness is strongly associated with later achievement.

Although children need a foundation of physical, social and emotional skills in order to make a smooth transition to formal schooling, cognitive skills such as reading and math are the best predictor of academic success.^{4,5}

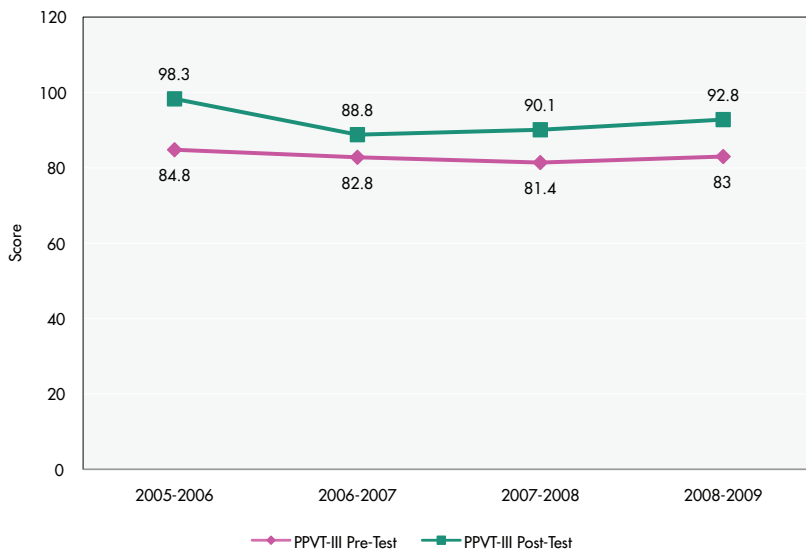


FIGURE 1:
Peabody Picture
Vocabulary Test Scores
Before & After MCS
Pre-K, 2005-2009

Source:
Sell M. Memphis City Schools Pre-K
program evaluation. Office of
Evaluation.

Attending pre-kindergarten appears to improve children’s cognitive skills.

Pre-kindergarten programs are typically funded and administered by public schools. Pre-kindergarten has a stronger educational focus than preschool and center-based care, and studies show that it provides greater developmental benefits to children than other types of care.⁶

Since 2005, Memphis City Schools (MCS) has collected information about its Voluntary Pre-K program that helps us see how pre-kindergarten participation influences children’s cognitive and language development. The Peabody Picture Vocabulary Test (PPVT), an assessment of children’s early language skills, is administered to children as they enter Pre-K and again as they complete the program. Comparing the results of the two assessments provides an indication of how enrollment in the program affects participants’ skill levels.⁷

A score between 85 and 115 on the PPVT indicates average language development. As Figure 1 shows, average scores of entering students fall slightly below 85, indicating language skills that are just below the normal range for 4-year-olds.

On the second assessment, after a year of pre-kindergarten, children show a 6 to 13-point improvement: average scores are within the normal range (although still in its lower half).

As a group, children who complete a year of MCS Pre-K are more prepared for kindergarten than they were before. (Due to data limitations, we assume that the first and second assessment groups are made up of the same children, although it is probable that some children enter or exit the program during the school year.)

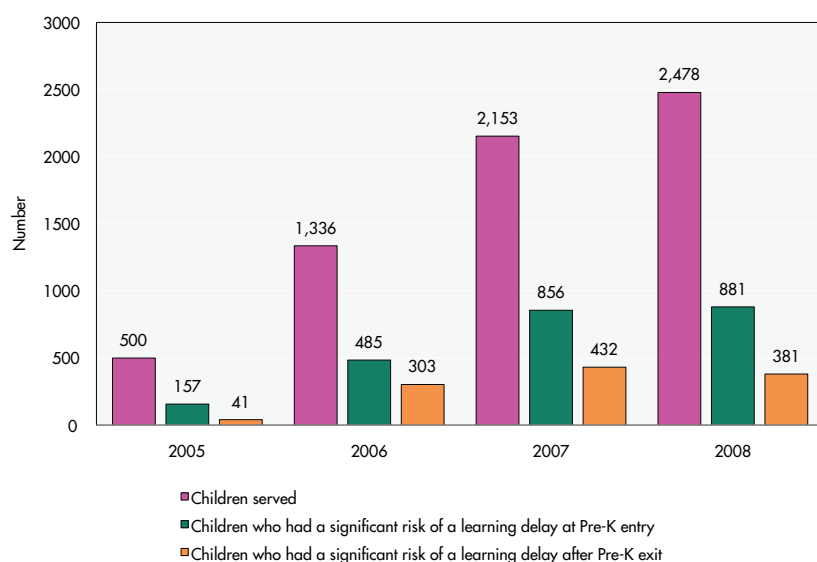
For many children, pre-kindergarten reduces the risk of learning delays.

Research shows that high-quality early learning programs are especially beneficial to children at risk. Compared to their peers, children from poor families, children of single parents, and children whose mothers lack a high school diploma tend to show bigger gains in reading and math, for example. These children tend to have fewer cognitively stimulating experiences at home, and high-quality learning programs appear to compensate to some degree. Early learning interventions improve at-risk children's language and cognitive abilities and increase their chances of completing high school and attending college.^{6,8}

Many children entering MCS Pre-K are already well behind their classmates. 30 to 40 percent of incoming children have scores below 75 on the PPVT, indicating that they are at risk for learning delays. The evidence suggests that MCS Pre-K is an effective intervention for helping children with delayed language abilities gain the skills they need. After a year of Pre-K, about half of these children are no longer at risk (Figure 2).

FIGURE 2:
Number of Children
at Risk for Learning
Delays Before
& After MCS
Pre-K, 2005-2008

Source:
Sell M. Memphis City Schools Pre-K
program evaluation. Office of
Evaluation.



Which types of learning experiences best prepare children for kindergarten?

The Kindergarten Readiness Indicator (KRI), an assessment developed by Memphis City Schools, is administered to all children as they enter MCS kindergarten. The KRI tests a variety of language and number skills, including identification of rhyming sounds, ability to follow directions, and knowledge of colors and shapes.

Because MCS also collects information from parents about the type of care their children received in the year before kindergarten, we can use KRI results to compare the effects of different kinds of early learning experiences. Figure 3 displays average KRI verbal scores of children who come from similar backgrounds but experienced different types of care.

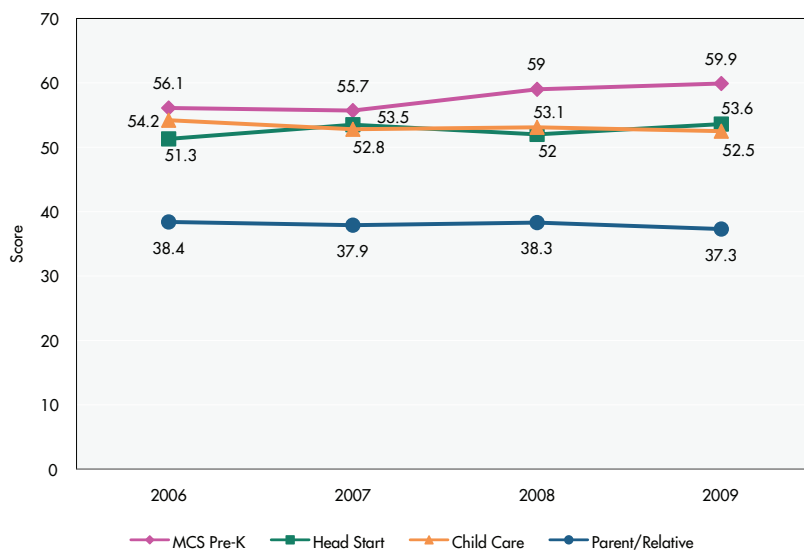


FIGURE 3:
Kindergarten Readiness Indicator Language Scores by Type of Care Before Kindergarten, 2006-2009

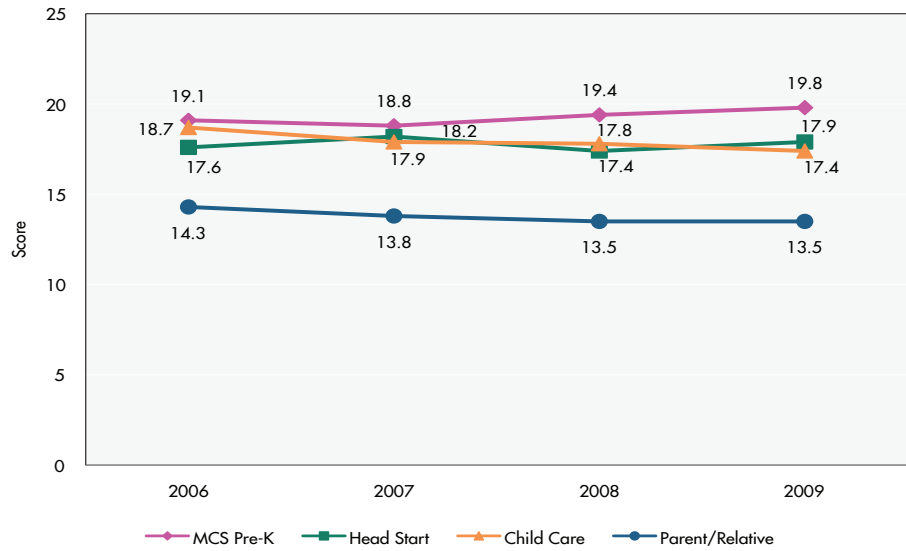
Source:
Banks, T. & Sell, M. The effects of pre-k experience on Kindergarten Readiness Indicator scores: 4 year trends. Memphis City Schools Office of Evaluation.

The pattern that emerges is consistent with national research showing that pre-kindergarten tends to provide more benefits than other kinds of programs. As a group, children who attended MCS Pre-K had the strongest language

development. Center-based care and Head Start programs were less beneficial than Pre-K but more beneficial than parent/relative care. The same pattern is seen in KRI math scores, although the comparative advantage of MCS Pre-K is slightly smaller (Figure 4).

FIGURE 4:
Kindergarten Readiness
Indicator Math Scores
by Type of Care Before
Kindergarten,
2006-2009

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.



Early learning experiences matter for kindergarten readiness and school success.

In early childhood, before school begins, a child's developmental trajectory is shaped, for better or worse, by her environment. Many children in Memphis are routinely exposed to risk factors associated with economically and socially

vulnerable homes and families. Fortunately, high-quality early learning experiences can help protect these children by promoting optimal development and increasing the likelihood that they will reach school ready to learn and thrive.

References

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