



## EARLY CHILDHOOD EDUCATION

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High quality early childhood education and preschool programs that implement best practices have been shown to improve school success and graduation rates for disadvantaged children. This paper, one in a series of papers that CRC is publishing on important education issues facing Michigan, describes programs that invest in the “front end” of formal education: kindergarten, Head Start, and Michigan’s Great Start Readiness Program. It also describes research on brain development that helps to explain why investing in early education may be a more effective strategy than other strategies that are being pursued.

The educational achievement gap between poor and non-poor children, and between minority and White children, has been at the center of education policy discussions for decades. Although it narrowed from 2005 to 2009, the achievement gap between White and Black fourth grade students in Michigan remains among the largest in the nation. Furthermore, Michigan institutions of higher learning topped the lists of both public and private colleges and universities with the largest White-Black graduation rate gaps: Wayne State had the largest gap among public universities and Lawrence Technological University had the largest gap among private colleges and universities. Both the K-12 system and higher education are challenged to address an achievement gap that, for many children, develops prior to school enrollment.

Michigan public schools are required to offer full day or half day kindergarten for five-year-olds, although under Michigan law, parents do not have to send their child to school until the child reaches the age of six. For most children, however, kindergarten is the entry into the formal education system, where they are exposed to basic academic concepts (numbers, letters, shapes, sizes, colors) and learn social skills (following directions, sharing, communicating), generally through organized play activities in a classroom setting. There is no universally accepted defini-

tion of the specific knowledge and skills that a child should have on kindergarten entry, but according to the U.S. Department of Education’s Early Childhood Longitudinal Study (ECLS-K) data, most children on entering kindergarten can name all of the letters, count beyond ten, recognize single digit numbers, identify simple shapes, identify patterns, and compare the relative length of rod-shaped objects. The majority are in good health, are reasonably well behaved, and exhibit a positive approach to classroom tasks. However, 34 percent cannot identify letters of the alphabet by name; 18 percent are not familiar with the conventions of print (reading from left to right and from top to bottom of a page); 42 percent cannot count 20 objects, read some single digit numbers, and judge relative length of objects; and six percent cannot count ten objects.

Michigan law entitles a resident child who is at least five years old on or before December 1 to enroll in public kindergarten. Because some parents delay their child’s entry into kindergarten to allow the child more time to mature, a kindergarten class may include children ranging from four to six years old, which can create a relative disadvantage for the youngest children. In addition to the child’s age and gender, certain family characteristics have been found to be negatively correlated with children’s skills and knowledge, as well as health, social development, and behavior, at kindergarten entry. The ECLS-K study found that 46 percent of kindergarteners had one or more of four risk factors:

- Having a mother who had less than a high school education (14 percent)
- Living in a family receiving food stamps or cash welfare (18 percent)
- Living in a single-parent family (23 percent)
- Having parents whose primary language is not English (9 percent)



Having more risk factors was correlated with poorer cognitive performance, as well as with poorer health, social development, and behavior, though not with physical growth or gross motor coordination. Studies have identified common consequences for those children who are already far behind when they enter kindergarten: increased rates of assignment to special education, grade retention, dropping out of school, teenage parenthood, welfare, and incarceration. These risk factors have particular relevance: In 2009, 615,494 Michigan children were under five years old, and 22.2 percent of Michigan families with children under five had incomes below the poverty level. More than half (53.6 percent) of families headed by a woman, with no husband present, with children under five years of age, were living in poverty. Forty-five percent of all births in Michigan are to single women below the poverty level.

Recent research helps to explain, on a biological basis, some of the challenges faced by children from disadvantaged backgrounds. Developmental neuroscience has highlighted a broad variety of hazards to avoid to ensure healthy brain development. In addition to avoiding hazards, the factors that are necessary to development of healthy young brains are abundant, safe opportunities to learn and active, reciprocal relationships with adults.

These ingredients are available in the vast majority of families with adequate resources, but unfortunately may not be available to children in families of extreme poverty or dysfunction. The improved understanding of brain development has helped federal and state policymakers identify the conditions that place young children at risk and develop programs targeted at specific at-risk populations. It has also explained why early intervention, at a time when young brains retain a great deal of flexibility, is more cost effective than later intervention.

## Demonstration Projects

Several scientifically controlled projects conducted in the 1950s and 1960s demonstrated the effectiveness of high quality early childhood education in ameliorating the effects of early disadvantages. These programs were specifically designed to test the effect of high quality early childhood programs on at-risk children, they had sound research designs and were longitudinal (they followed children in treatment and control groups through school and into adulthood), they measured a number of different outcomes, and they calculated benefit-cost ratios. These benefit-cost analyses generally found substantial benefits from high quality early intervention, which is defined to include better trained caregivers, smaller child to staff ratios, aca-

ademic focus, and intensive services. The reported return on investment (up to \$17 for each dollar invested) has been used to support the allocation of public funds for pre-K programs for at-risk preschoolers.

Some studies have concluded that teachers with a bachelor's degree and specialized training in early childhood education and development are more effective in promoting academic achievement than those who lack such credentials. An academic curriculum is crucially important, but it cannot substitute for poor quality teaching. The size of the class and teacher-child ratio is important: in high quality programs there are no more than 20 children in a classroom and no more than ten children for every teacher. Family engagement in a child's learning environment has been linked to increased reading achievement, decreased rates of grade retention and special education, and higher high school graduation rates.

## Head Start

Head Start, which was established in the Economic Opportunity Act of 1964 as part of President Lyndon Johnson's War on Poverty, is the federal initiative to address the special needs and boost the school readiness of low income preschool children by replicating the successful demonstra-

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tion projects on a large scale. Head Start provides comprehensive child development services including preschool education; medical, dental, and mental health care; nutrition services; and social and other services including parent involvement services to enrolled children from ages three through five and to their families. Head Start requires all teachers to hold at least a Child Development Associate Degree (CDA) credential and at least half of lead teachers to hold an associate level degree (more than 70 percent of Head Start teachers do not have a teaching degree). Language in the 2007 reauthorization requires that all teachers must have an associate degree in a related field and half of teachers must have bachelor's degrees by 2013, although no funding was provided for this mandate.

The final report of the Head Start Impact Study, released in January, 2010, revealed that the program had a positive effect on language and literacy development at the end of one program year, but cognitive effects faded quickly. At the end of kindergarten and first grade, the Head Start children (with the exception of some subgroups) and control group children were at the same level on essentially all of the measures used. While there were no significant impacts on math skills, pre-writing, children's promotion, or teacher reports of children's school accomplishments or abilities, children in Head Start centers were much more likely to receive various health care services than children in other center-based care. Fadeout effects have been attributed to poor schools and to the paucity of home resources, lead-

ing to questions about the effectiveness of short-term intervention and the need for continuing enrichment programs.

The Head Start program demonstrates the problems of taking lessons learned in demonstration projects to scale: the effort to serve many more children at lower cost results in use of less well trained staff and larger classes and/or caseloads.

In Michigan, Head Start serves about 35,000 children each year.

## Great Start School Readiness Program

Because federal funding is insufficient to enable Head Start programs to reach all eligible children, 40 states and the District of Columbia have established state funded pre-K programs. The Michigan School Readiness Program (MSRP) was established in 1985 to offer preschool to four-year-olds who may be at risk of school failure, on the basis that children who have high quality child care and preschool experiences, including support for health and emotional well-being, are more successful in later school years, are less likely to repeat a grade, are more likely to graduate from high school, attend college, and become productive citizens. Starting with the 2008-09 school year, the name of the program was changed to the Michigan Great Start School Readiness Program (GSRP).

GSRP provides part-day or full-day, comprehensive, free, compensatory pre-K programs and bases eligibility on family income and other criteria designed to

measure need. The risk criteria are extremely low or low family income; diagnosed disability or identified developmental delay; severe or challenging behavior; primary home language other than English; parent or guardian with low educational attainment; abuse or neglect of child or parent; and environmental risk.

GSRP has a maximum adult to child ratio of one to eight. A qualified associate teacher must be added with the ninth child, and a third adult with the 17<sup>th</sup> child in the class. Lead teachers must have a valid Michigan teaching certificate with an early childhood specialist endorsement (ZA), a valid Michigan teaching certificate with a child development associate credential (CDA), or a bachelor's degree in child development with specialization in preschool teaching. GSRP paraprofessionals must have CDA, an associate's degree in early childhood education or child development, or the equivalent as approved by the state board.

Funding is provided from the state school aid fund for formula based grants to eligible school districts and from the general fund for competitive grants to other providers. In 2010-11, the allocation is \$89.4 million for the formula component and \$8,875,000 for competitive grant funding. Any public or private for-profit or non-profit entity (private child care centers, Head Start programs, social service agencies, mental health agencies, ISDs, school districts, and public school academies that also have a Head Start program) may apply for a competitive grant. According to an October 2009 analysis, 20,822

children attended GSR programs funded through school districts and 3,615 children attended programs run by agencies that received competitive grants.

Generally, the Michigan School Readiness Program, which has been recognized as “definitely among the better conceptualized and staffed in the country,” has been found to produce significant, meaningful improvements in children’s readiness to enter kindergarten. Michigan’s state pre-school policy requirements met seven of the ten quality benchmarks used by the National Institute for Early Education Research (NIEER) to evaluate state-funded pre-K. Michigan ranked 21st of 38 states on access for four-year-olds, 16th on state spending, and 22<sup>nd</sup> on all reported spending.

A 2009 analysis by Richard Chase and Paul Anton of Wilder Research estimated that \$1.15 billion was realized in Michigan in 2009 from cost savings and revenues that resulted from investments in school readiness over the past 25 years. These benefits include savings from reduced grade repetition and special education, crime and criminal justice, welfare spending, unemployment benefits, and child care subsidies, and were generated by current school children who received early education services and by young adults who have been more successful because of school readiness. According to the analysis, there were about 80,000 adults, age 18 to 29, in the Michigan labor force who were high school graduates who would probably have dropped out of school if not for Michigan’s investment in their school readiness. The estimated economic impact of these

adults is about \$1.3 billion annually, including \$584 million in reduced government spending and increased tax revenues and at least \$700 million in additional wages they have generated. Using an estimate of 35,000 four-year-old Michigan children who were eligible but not served by Head Start or GSRP, this study placed the cost of not investing in school readiness for all disadvantaged children at \$598 million annually. The cost of expanding GSRP to all eligible children was estimated at \$236 million, which is \$362 million less than the estimated costs associated with not expanding the program.

## Conclusions

Most children who enter kindergarten without basic early literacy skills never catch up to their peers, and children who have not already developed some basic literacy skills when they enter school are three to four times more likely to drop out. A number of demonstration projects have proven that high quality, evidence based, early childhood education can ameliorate some disadvantages, increase lifetime earnings and decrease dependency on public services. Very high quality, comprehensive early childhood education has been shown to have lifelong benefits for children that persist even 40 years later.

Early childhood programs including Head Start and Michigan’s Great Start Readiness Program are designed to sever the link between childhood poverty and poor outcomes in lifelong learning, behavior, and health, by supplementing the role of the family in early childhood nurturing and education. Michigan’s GSRP has adopted higher stan-

dards than the federal program and appears to be more effective, though the very poorest children attend Head Start.

High quality pre-K programs may not increase IQ over the long term, but they do affect motivation, emotional stability, self control, and sociability, all of which are equally important to the choices an individual makes throughout his or her life. High quality pre-K improves the odds that children will become successful adults, and reduces the societal costs associated with poor school performance, crime and incarceration, unemployment and welfare.

Michigan’s Great Start Readiness Program serves only eligible four-year-old children, raising the issue of whether the program should be expanded to include a component for three-year-old children, or for those even younger. Other issues include the adequacy of funding; the criteria used to determine eligibility; whether funding should be restricted to public school districts; home visits and family engagement; and integration with K-12 expectations.

Extraordinary budget challenges facing the State of Michigan have forced policy makers to make difficult decisions about the best use of limited resources. At the same time that the state must improve its economic competitiveness, it must also reduce costs associated with K-12, corrections, and Medicaid. High quality pre-K programs targeted at disadvantaged three and four-year-olds and high quality, all day kindergarten may be the best long term investment in the state’s human capital.