



Pre-Kindergarten: An Investment in Montana's Future Fall 2013

Children are one of Montana's greatest resources. They are the future of our state and economy. However, not all children in Montana are getting the start they need to be successful.

Poverty impacts a staggering number of Montana children. Twenty percent of Montanans under the age of eighteen live below the poverty level.¹ Younger children tend to be even more vulnerable. Twenty-four percent of children under the age of five live in poverty, with that number increasing to 57 percent for those living in female-headed households.² In 2011, eight percent of children under six lived in families with incomes less than 50 percent of the federal poverty level.³

Poverty significantly affects young children's development. At age three, the average child in a low-income household knows half as many words as their higher income counterparts.⁴ Despite the large percentage of children living in poverty, Montana is one of only ten states without a state-funded pre-kindergarten program.⁵ Only 14 percent of three year olds and 23 percent of four year olds are enrolled in publicly funded Head Start or a special education program, and three-fifths of Montana children are not enrolled in any preschool program at all.^{6,7}

Policy leaders at both the federal and state level recognize the importance of pre-k for our children's future. In 2011, the Obama administration announced plans for universal early childhood education for all children in the United States. This plan would permit federal funds to expand high quality preschool for four year olds living in low- and moderate-income families. The plan also requires the implementation of statewide standards, an increase in the qualifications of and pay for teachers that is more comparable those of K-12 school staff, and the institution of low child-to-adult ratios.⁸ Governor Bullock has also emphasized the importance of early childhood education, listing it as a top policy priority for his administration.⁹

Benefits of Pre-K

Early childhood education holds substantial benefits for enrolled children. Public schooling typically begins with kindergarten at age five, but this practice is based on social convention rather than scientific evidence.¹⁰ Early childhood is an extremely important developmental period, with lifelong consequences for children's academic, social, and medical futures.

Pre-k most greatly impacts a child's cognitive outcomes.¹¹ A meta-analysis of 36 pre-k programs demonstrated that for disadvantaged young children, pre-k can increase intelligence quotient (IQ) by an average of eight

Benefits of Pre-K

Academic and Cognitive Benefits

- Higher math and verbal achievement
- Increased school readiness
- Higher IQ
- Decreased need for grade retention and special education
- Increased high school graduation rates
- Higher rates of college completion

Social Benefits

- Better health outcomes
- Less likely to experience abuse or neglect
- Decreased use of tobacco or marijuana
- Decreased teen pregnancy
- Reduced rates of incarceration and delinquency
- Higher rates of employment
- Reduced need for public assistance programs

points.¹² In the Perry Preschool Program, a longitudinal study of a preschool program in Ypsilanti, Michigan, 67 percent of participants had IQs higher than 90 at age five, compared to only 28 percent in the control group.¹³

Pre-k also improves school readiness.¹⁴ Currently, over half of Montana fourth graders are unable to do math at a proficient level, and nearly two-thirds are unable to read at a proficient level.¹⁵ However, children who attend pre-k achieve greater academic success.¹⁶ Those in the Perry program were more likely to do their homework at age 15 and were also three times more likely to have a basic level of school achievement at 14.¹⁷ Another meta-analysis shows that higher-quality child care has been linked to improved scores in math, reading, and memory in the third grade.¹⁸ Likewise, the Early Childhood Longitudinal Study-Kindergarten Cohort shows improved math and reading test scores for those who attended pre-k compared to those who did not.¹⁹

Children who participate in pre-k are also less likely to repeat a grade, require special education, or drop out of high school.²⁰ Eight out of ten studies analyzing grade retention and special education found that attending pre-k significantly reduced the need for either of those interventions.²¹ Participants in the Perry program were 13 percent more likely to graduate from high school than those students in the control group. For females, the outcome was even stronger – 88 percent of program participants graduated, compared to 46 percent of those in the control group.²² The Abecedarian study, another longitudinal study of a preschool program in North Carolina, found pre-k participants were four times more likely to have earned a college degree (23 percent vs. 6 percent).²³ A recent study of the Arkansas pre-k program showed children in the program yielded 31 percent greater growth in vocabulary at kindergarten entry and 37 percent more growth in math skills than their peers who did not attend.²⁴ The College Board lists increasing the percentage of three and four year olds in preschool programs as the first step in increasing college completion rates.²⁵

While the strongest outcomes for pre-k are cognitive, there are important social benefits as well. Children who participate in high-quality pre-k programs are more likely to have higher rates of immunization and have access to better nutrition and health care, both of which lead to better overall health outcomes. In addition, they are less likely to experience child abuse and neglect and to become teenage parents.²⁶ The Abecedarian project also showed participants in the pre-k program were more likely to be consistently employed (75 percent had worked full time for 16 out of the last 24 months), compared to only 53 percent of the control group. Additionally, program attendants were five times less likely to receive public assistance in the future.²⁷ In the Child-Parent Center Education Program study, 20 percent of participants achieved moderate or higher level of socioeconomic status.²⁸

Pre-k also reduces delinquency. Students who attend a pre-k program demonstrate a reduced trend for smoking and marijuana use.²⁹ In the Perry study, those in pre-k were less likely to be arrested five or more times (55 percent vs. 36 percent), a result which was even more pronounced for males alone. Violent crimes, drug related crimes, and property crimes were also significantly reduced in the Perry study.³⁰ Participants in the Chicago-based Child-Parent Center Education Program study found that for those in the program, 28 percent fewer enrollees abused drugs and alcohol, 22 percent fewer had a felony arrest, and 28 percent fewer had experienced incarceration or jail.

Preschool Leaves Lasting Impacts

“The weight of the evidence establishes that ECCE [early childhood care and education] can produce large effects on IQ during the early childhood years and sizable persistent effects on achievement, grade retention, special education, high school graduation, and socialization. In particular, the evidence for effects on grade retention and special education is overwhelming. Evidence is weaker for persistent achievement effects, but this weakness is

probably the result of flaws in study design and follow-up procedures. Evidence for effects on high school graduation and delinquency is strong but based on a smaller number of studies.”- W. Steven Barnett

The impacts of preschool persist well beyond the early years of childhood. Initial studies on early childhood education from the 1960s concluded that cognitive impacts faded out by third grade, instigating rumors about the ineffectiveness of pre-k.³¹ However, more recent and better quality research offers a more complex view of the matter. Although boosts in IQ do tend to fade during elementary school, other concrete and important impacts such as a reduced need for special education and grade retention, higher graduation rates, and decreased criminal behavior are long lasting.³² Tim Bartik attributes this phenomenon to the development of “soft skills,” the social and character skills which help children achieve long-term success.³³

The National Institute for Early Education Research asserts that although the average effects of preschool decline as students move into elementary school, substantial impacts continue for years.³⁴ Furthermore, it is important to note that diminishing differences in students who have and have not attended pre-k is different than a fadeout effect. Schools help students who did not attend pre-k catch up later in elementary school, eventually reducing some differences, but at a greater cost to taxpayers.³⁵ Studies have found that quality matters in achieving long lasting impacts from pre-k.³⁶ The many academic and social benefits of pre-k last long into adulthood, making early childhood education a vital social investment.

Economic Benefits to Society

“The central conclusion...is that at current total investment levels, efficiency would be enhanced if human capital investment were reallocated to the young.”- James J. Heckman, PhD. Nobel Laureate in Economics.

In addition to the individual benefits to children, pre-k programs also give communities a boost. Because there is more time to accumulate a return, investing in early childhood education is one of the most cost effective societal investments.³⁷ Currently, we invest the most substantial portion of our education dollars in school and college aged years, rather than early learning years when the brain is doing most of its development.³⁸ Although some academic benefits of pre-k become less pronounced during elementary school, the ones which have greater societal benefits are long lasting.

Estimates of the return for every dollar spent on pre-k range from four to seventeen dollars.³⁹ The benefits to the general public far exceed the benefits to the individual. The Federal Reserve Bank of Minneapolis estimates a 16 percent return on investment per year for the Perry Preschool project, with three-quarters of the return benefitting the government and non-participating public, and one quarter going to the participating individual. This is a significantly larger return than even the most optimistic stock portfolio.⁴⁰

Economic benefits of pre-k come from a variety of areas. These include:

- Savings on special education
- Savings on costs of repeating grades
- Decreased teacher turnover
- Reduced spending on adult criminal justice
- Increase in income tax revenues due to higher earnings
- Reduced unemployment and welfare benefits
- Reduced costs to victims of crimes
- Reduced health costs due to less alcohol and drug abuse
- Increased earnings for parents

A study by EPI estimates the benefits of universal (open to all) or targeted (open to low-income children) preschool. Although a universal program is more expensive with a lower benefit to cost ratio, the total return is higher. No study has found negative returns from investing in preschool. Even if returns were dramatically lower than estimated, Steven Barnett of the National Institute for Early Education Research (NIEER) points out, they would still be economically beneficial.⁴¹

Pre-k also has immediate economic benefits. Pre-k programs provide jobs, employing nearly 3 million people nationwide. Preschool centers also purchase goods and services, creating a ripple effect in their local economies. Providing reliable childcare for parents also helps businesses to retain their employees.⁴² Nearly two-thirds of children under age six have both of their parents in the labor force.⁴³ Montana business leaders rate childcare as “extremely or very important” in encouraging employees’ productivity.⁴⁴ A lack of safe and affordable childcare can force employees to miss work, or in the long term, quit their jobs. This employee departure is expensive. Turnover costs for salaried staff amounts to 150 percent of earnings. So for an individual earning \$8 an hour, turnover costs would equal \$9,000.⁴⁵ The long-term social benefits also translate to economic ones. The Economic Policy Institute estimates that the savings to individuals in Montana from crime reduction due to a pre-k program would be \$210 million in 2050.⁴⁶

Universal vs. Targeted Pre-K Program in Montana		
	Universal	Targeted
When the program would start paying for itself	9 years	4 years
Annual cost of fully phased-in program*	\$88 million	\$19 million
Total benefits in 2050*	\$1.7 billion	\$716 million
Costs in 2050*	\$212 million	\$54 million
Ratio of total benefits to costs in 2050*	8 to 1	13.2 to 1
When program would pay for itself in budget benefits alone	17 years	7 years
Budget benefits in 2050*	\$386 million	\$177 million
Ratio of budget benefits alone to costs in 2050*	1.82 to 1	3.28 to 1
Total increased compensation (wages & benefits) in 2050*	\$894 million	\$328 million
Savings to individuals from crime reduction in 2050*	\$418 million	\$210 million
Source: EPI		
*Estimates assume program began in 2008		

Types of Preschool Programs

There are two types of state-funded pre-k programs: universal and targeted. Universal programs serve all children, regardless of income, and targeted programs focus primarily on low-income children. The vast majority of state-funded pre-k programs in the US are targeted programs. There are benefits to both approaches.

Targeted programs require a total lower investment due to the smaller numbers of children participating. Additionally, because of the lower number of participants, targeted programs have the potential to invest a higher dollar amount per child, and thus provide better quality care. Research shows that the benefits of pre-k for low-income children are more pronounced than for middle-income children.

On the other hand, targeted programs are often unable to provide the intensity and quality of education needed to be effective. Middle-income parents who have greater social and economic resources may lobby for better quality universal preschool, whereas targeted programs often have trouble maintaining public support.⁴⁷ Additionally, despite the higher overall costs, universal pre-k programs produce greater total benefits.⁴⁸ Although low-income children experience more benefits from pre-k, many middle income children who are not eligible for targeted programs may still receive a boost from the program.

Quality is vital to a successful preschool program. Children in high quality childcare centers have better outcomes in areas such as math, reading, memory, and cognitive and attention skills.⁴⁹

Elements of a quality pre-k program include: ⁵⁰

- Comprehensive early learning standards;
- Educational requirements for staff, including a bachelor degree with a specialization in early childhood for teachers and a child development associate degree for assistants;
- Staff pay that is comparable to teachers in K-12 schools;
- In-service training for teachers;
- A maximum class size of 20, with a staff-child ratio at 1:10;
- Screening, referral, and support services for vision, hearing, and health;
- One meal per day; and
- Regular site visits.

A 2007 study of state-funded pre-k programs in Michigan, New Jersey, Oklahoma, South Carolina, and West Virginia found significant improvements for participants in receptive vocabulary, print awareness, and math upon entrance into kindergarten.⁵¹ However, the authors of this study emphasize that these results cannot be extrapolated to state programs in general, rather, that *quality* state-funded programs have significant impacts. This study found that common elements of successful programs included: nearly all teachers having a four year college degree with a focus on early childhood, teacher compensation comparable to K-12 public school teachers, and 20 or fewer children per classroom, with the help of a full-time aide.⁵²

Pre-K in Montana

Montana is one of ten states that offer no form of state-funded pre-k. Many states lacking state-funded pre-k are rural, which increases the costs of the program. However, Alaska, Kansas, Maine, and Nebraska are among the most sparsely populated states and have developed high-quality pre-k programs. Pre-k in Montana would cost an estimated \$3,543 per child – the lowest estimate in the country.⁵³

Currently, some public school systems in Montana, including Great Falls, Missoula, and Hamilton, offer limited public preschool to students with and without disabilities. These programs rely on limited alternative sources, rather than state support, for their funding.⁵⁴

Conclusion

The advantages of preschool are measurable and long lasting. These gains reach beyond our children, who will benefit from both academically and socially, and extend into our families and communities. Montana should choose to invest in state-funded pre-k in order to maintain pace with the vast majority of other states who have this decision to ensure strong communities. With a vast variety of policy options available, it is possible to find a solution that works for Montana. Investing in Montana's children is a necessary step for ensuring a bright future.

APPENDIX I

Programs in Other States

The vast majority of U.S. states offer some form of state-funded pre-k. Florida, Oklahoma, Vermont, Wisconsin, and West Virginia have the highest percentage of access. This is a selection of notable state-funded pre-k programs that meet the most quality standards benchmarks, such as class size and teacher training, as set by NIEER.⁵⁵

*Alabama*⁵⁶

Name of program: First Class: Alabama's Voluntary Pre-K Program

Number of benchmarks met: 10

Percent of 4 year olds enrolled: 6 percent

Universal: Yes

Cost spent per child: \$7,198

Estimated amount needed to meet benchmarks: \$7,682

Eligibility requirements: Be a resident of the state and be 4 years old. However, enrollment is low due to limited funding.

Funding source and distribution: Sites such as churches, Head Start programs, private childcares, and public schools can apply for funding. Sites must match funds at 25 percent, may also charge a sliding scale of parent fees.

Length: 6.5 hours per day, 5 days a week during the academic year.

Alaska

Name of program: Alaska Pre-Kindergarten Program

Number of benchmarks met: 10

Percent of 4 year olds enrolled: 2 percent⁵⁷

Cost spent per child: \$8,057

Estimated amount needed to meet benchmarks: \$4,545

Universal: No

Eligibility requirements: Must be below 100 percent of FPL, unless programs have space, then may raise eligibility to 130 percent

Funding source and distribution: Funding is given to public schools that can then sub-contract with faith based child cares, home daycares, Head Start programs, and private day cares.

Length: 3-5 hours per day, 4-5 days per week during academic year.

Arkansas

Name of program: Arkansas Better Chance/Arkansas Better Chance for School Success

Number of benchmarks met: 9

Percent of 4 year olds enrolled: 37 percent

Universal: No

Cost spent per child: \$8,753

Estimated amount needed to meet benchmarks: \$7,217

Eligibility requirements: 90 percent of children must be at or below 200 percent of FPL. Other risk factors can help determine eligibility, including developmental delays, parents who are active duty military, teen parents, low birth weight. The program was initially only in school districts with 75 percent of children testing below "proficient," but is now expanding.

Funding source and distribution: Funded through dedicated sales tax, also through excise tax on packaged beer. 40 percent of funds must be through local contributions, cash or in-kind, and funding sources are determined locally.

Length: 7 hours a day, 5 days a week during the academic year.

Kentucky

Name of program: Kentucky Preschool Program

Number of benchmarks met: 9

Percent of 4 year olds enrolled: 30 percent

Universal: No

Cost spent per child: \$6,876

Estimated amount needed to meet benchmarks: \$4,230

Eligibility requirements: Be below 150 percent of FPL.

Funding source and distribution: School districts subcontract with Head Start programs, private child care centers, and special education providers.

Length: 2.5 hours per day, 4-5 days a week during the academic year

Minnesota

Name of program: Minnesota Head Start

Number of benchmarks met: 9

Percent of 4 year olds enrolled: 9 percent in Head Start programs (8 percent through federal funding, 1 percent through state funding)

Universal: No

Cost spent per child: \$7,592

Estimated amount needed to meet benchmarks: \$4,628

Eligibility requirements: Same as eligibility for Head Start

Funding source and distribution: Provides supplemental funding to Head Start and Early Head Start.

Length: 3.5 or more hours per day, 4 days a week, 32 weeks a year.

North Carolina

Name of program: NC Pre-K

Number of benchmarks met: 10

Percent of 4 year olds enrolled: 19 percent

Universal: No

Cost spent per child: \$7,803

Estimated amount needed to meet benchmarks: \$8,276

Eligibility requirements: 80 percent of children must be below 75 percent of state median income. Also serves at-risk children who have developmental disability, chronic health condition, limited English proficiency. Additionally, serves those whose parents are active duty military.

Funding source and distribution: Funded through state general fund and state lottery, as well as federal and non-required local services. NC Pre-K classrooms are available in Head Start programs, private child care centers, and public schools. Private settings must have high ratings under the state licensing system.

Length: 6.5 to 10 hours per day, 5 days a week during academic year.

Oklahoma

Name of program: Oklahoma Early Childhood Four-Year-Old Program

Number of benchmarks met: 9

Percent of 4 year olds enrolled: 74 percent

Universal: Yes

Cost spent per child: \$7,427

Estimated amount needed to meet benchmarks: \$6,229

Eligibility requirements: None

Funding source and distribution: School districts receive funding, and then may subcontract with programs by placing public school teachers in programs such as Head Start, childcares, and community based centers. The program is considered to be part of the public school system.

Length: 2.5 (part day) or 6 (school day) hours, 5 days a week, during the academic year.

Tennessee

Name of program: Tennessee Voluntary Pre-K

Number of benchmarks met: 9

Percent of 4 year olds enrolled: 22 percent

Universal: No

Cost spent per child: \$5,814

Estimated amount needed to meet benchmarks: \$8,059

Eligibility requirements: Three tier eligibility process: top priority is given to children who qualify for free or reduced lunch, are homeless, or in foster care, second to IEP children, those with a history of abuse or neglect, English language learners, and children in state custody, and third to locally determined risk factors such as low parent education, teenage parents, and those in the with parents who are active duty military.

Funding source and distribution: Funded through state lottery and Federal TANF. A local match, determined by funding formula, is required. Grants are available to public schools through a competitive process. These schools then subcontract with programs such as community based childcares, Head Start, public housing programs, higher education institutions, etc.

Length: 5.5 hours per day, 5 days a week during the academic year

Washington

Name of program: Washington Early Childhood Education and Assistance Program

Number of benchmarks met: 9

Percent of 4 year olds enrolled: 8 percent

Universal: No

Cost spent per child: \$6,800

Estimated amount needed to meet benchmarks: \$5,411

Eligibility requirements: 90 percent of children must be below 110 percent of FPL. The other 10 percent may be enrolled based on other environmental or developmental risk factors.

Funding source and distribution: Program provides many services besides pre-k, such as family support, medical services, and social services

Length: Locally determined, for a minimum of 320 hours per year.

¹American Community Survey, Selected Economic Characteristics 5 year estimates, 2007-2011, accessed July 2013.

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