



HIGH-QUALITY EARLY CHILDHOOD EDUCATION: *Good for Children, Good for the Economy*

High-quality early childhood education benefits children and is fiscally responsible. Returns on investment (ROI) in early childhood education are high, especially for children experiencing multiple risk factors (e.g., poverty, child welfare involvement).¹ Cost savings primarily occur through increased earnings, reduced crime, and increased tax revenue.^{2,3}

- The greatest ROI for high-quality preschool occurs among children from families in the highest poverty—an ROI of \$17.92 in societal benefit per \$1 spent compared to an ROI of \$4.05 per \$1 for less disadvantaged families.¹
- Children who attend Head Start fare better than siblings who do not because they're more likely to graduate from high school, attend college, and earn post-secondary credentials.^{4,5} (Note: these studies addressed a critique of earlier studies comparing children from different families).

Addressing Critiques

Are benefits overestimated? Early research on preschool education has been sharply criticized for overestimating benefits because samples were drawn from very small randomized trials (e.g., Perry Preschool, Abecedarian Program).⁶ Those provided an intensive preschool experience with wraparound services for the entire family, which is not comparable to universally available preschool programs like Head Start⁷, and cost-benefit estimates for those intensive programs far exceed the estimates for Head Start.⁸ While this ROI cannot be expected for a universal program with more limited resources, these studies demonstrated that poverty's negative effects can be lessened with proper supports.

Do preschool effects “fade out”? Research has suggested that academic benefits among Head Start students “fade out”—that is, academic benefits apparent in the 1st grade sometimes fade over time.⁹ However, even when “fade out” effects occur, these same children consistently have better outcomes as adolescents and adults, exhibiting higher rates of high school completion and college attendance and greater income, among other benefits associated with lower rates of intergenerational poverty and dependence on government subsidies.^{10,11} Researchers have suggested that early childhood education can support children's social-emotional development (e.g., perseverance). One recent study indicated that when pre-K teachers teach lessons designed to support students' social-emotional learning, students' gains in social skills and self-control continue into elementary school.¹² Theories and preliminary evidence aside, more research is needed to understand academic fade out that occurs despite having better outcomes later in life (e.g., graduation).

Moreover, new findings from a study of 1 million North Carolina students who attended early childhood education programs concluded that benefits persist through 5th grade. These include higher test scores, a lower chance of being held back a grade, and fewer special education placements.¹³ The researchers are careful to note that their study does not show the same “fade out” effects due to the high quality of the two programs evaluated.¹⁴

There has been a great deal of speculation about why some studies indicate that preschool effects fade out. In addition to potential social-emotional benefits that may underlie long-term outcomes such as high school graduation, some suggest that preschool quality may explain the potential fade effect. Researchers from the North Carolina study suggested that the benefits of preschool persist when preschool quality is high and elementary schools are of sufficient quality to capitalize on early gains. More research is needed to better understand which aspects of quality explain differences in outcomes between programs in which “fade out” does or does not occur. Such research may point to ways to strengthen academic instruction and social-emotional skill development in low-income schools to foster economic development and effectively reduce poverty.

Highlights

- Children in high-risk families will benefit the most from Head Start.
- Head Start benefits associated with test scores may fade over time; however, despite that fade, studies have demonstrated that Head Start children have better outcomes later in life (e.g., higher graduation rates).
- To explain complex longitudinal findings, future research should explore how children's social-emotional development may be a key predictor of success later in life.
- Our understanding of which aspects of preschool quality relate to positive child outcomes is somewhat limited; future research should refine quality measurement tools.
- To ensure that public funds are targeted towards the quality factors that have already been identified, federal efforts should use indicators of classroom quality related to positive child outcomes.

Moving Forward: The Need for High-Quality Early Childhood Education

High-quality implementation is necessary for any preschool benefits to be realized. Teachers must be trained and coached on best practices for student development, including developmentally appropriate instruction in literacy and numeracy, and social-emotional skill development with implications for classroom behavioral management. Furthermore, smaller classes and all-day care¹⁵ are associated with better academic and behavioral outcomes.

Beyond these core-components of preschool quality, our understanding of what “high quality” means is limited by the research that has been conducted.¹⁶ Some widely used measures of preschool quality (e.g., ECERS) have been criticized because those quality ratings are not consistently related to better outcomes among preschool students.^{17,18}

Specific aspects of preschool quality, such as student-teacher interactions, may better depict aspects of preschool quality that are relevant to student outcomes. Moreover, federal efforts to strengthen preschool quality largely rely on the ability to measure quality (e.g., QRIS systems); much more research is needed to refine those measurement tools.¹⁷

Core Components of Preschool Quality

- √ Developmentally appropriate instructional practices
- √ Instruction in literacy and numeracy
- √ Development of social-emotional skills (e.g., emotional regulation) particularly in teacher-child and child-child interactions
- √ Classroom size with appropriate student:staff ratio
- √ All-day programming
- √ Alignment of pre-K curricula with kindergarten standards

Recommendations

1. **Federally funded research via Institute of Educational Sciences, Administration for Children and Families, and National Institutes of Health should continue and expand support of rigorous research on early childhood education.**¹⁹ Such research should focus on identifying:

- Factors that cause the “fade out” effect and how those can be addressed;
- Factors that explain long-term benefits of preschool despite the “fade out;” and
- Measurement tools for quality implementation that are linked with positive student outcomes.

2. **Federal efforts should use indicators of classroom quality that have been shown to relate to positive child outcomes.**

References and Resources

- ¹ Reynolds, A. J., Temple, J. A., White, B. A. B., Ou, S.-R., & Robertson, D. L. (2011). Age 26 cost–benefit analysis of the child-parent center early education program. *Child Development, 82*, 379–340. doi: 10.1111/j.1467-8624.2010.01563.x
- ² Bauer, L. & Whitmore Schanzenbach, D. (2016). *Economic analysis: The long-term impact of the Head Start program*. Retrieved from: http://www.hamiltonproject.org/papers/the_long_term_impacts_of_head_start.
- ³ Karoly, L. (2016). The economic returns to early childhood education. *Future of Children, 26*, 37–55.
- ⁴ Deming, D. (2009). Early childhood intervention and life-cycle skill development: Evidence from Head Start. *American Economic Journal: Applied Economics, 1*, 111–134. <http://www.aeaweb.org/articles.php?doi=10.1257/app.1.3.111>.
- ⁵ Garces, E., Thomas, D., & Currie, J. (2002). Longer-term effects of Head Start. *The American Economic Review, 92*, 999–1012.
- ⁶ Anderson, M. L. (2008). Multiple inference and gender differences in the effects of early intervention: A reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects. *Journal of the American Statistical Association, 103*(484), 1481–1495. doi:10.1198/016214508000000841.
- ⁷ Armor, D. J. (2014, October 15). *The evidence on universal preschool: Are benefits worth the cost?* Cato Institute Policy Analysis, no. 760.
- ⁸ Belfield, C. R., Nores, M., Barnett, W. S., & Schweinhart, L. (2006). The High/Scope Perry preschool program: Cost-benefit analysis using data from the age-40 follow-up. *Journal of Human Resources, 40*, 162–190.
- ⁹ Klein, J. (2011, July 7). Time to ax public programs that don’t yield results. TIME.com. Retrieved November 15, 2016, from: <http://content.time.com/time/nation/article/0,8599,2081778,00.html>.
- ¹⁰ Currie, J. & Thomas, D. (2000). School quality and the longer-term effects of Head Start. *Journal of Human Resources, 35*, 755–774.
- ¹¹ Ludwig, J. & Phillips, D. (2008). Long-term effects of Head Start on low-income children. *Annals of the New York Academy of Sciences, 1136*, 257–268. doi: 10.1196/annals.1425.005.
- ¹² Bierman, K. L., Heinrichs, B. S., Welsh, J. A., Nix, R. L., & Gest, S. D. (2017). Enriching preschool classrooms and home visits with evidence-based programming: Sustained benefits for low income children. *Journal of Child Psychology and Psychiatry, 58*, 129–137. doi: 10.1111/jcpp.12618.
- ¹³ Dodge, K. A., Bai, Y., Ladd, H. F., & Muschkin, C. G. (2016). Impact of North Carolina’s early childhood programs and policies on educational outcomes in elementary school. *Child Development*. Advance online publication. doi:10.1111/cdev.12645.
- ¹⁴ Barnett, W. S., Friedman-Krauss, A. H., Gomez, R. E., Horowitz, M., Weisenfeld, G. G., Clarke Brown, K., & Squires, J. H. (2016). *The state of pre-school 2015: State preschool yearbook*. New Brunswick, NJ: National Institute for Early Education Research.
- ¹⁵ Walters, C. R. (2015). Inputs in the production of early childhood human capital: Evidence from Head Start. *American Economic Journal: Applied Economics, 7*, 76–102. <http://dx.doi.org/10.1257/app.20140184>.
- ¹⁶ Faria, A.-M., Greenberg, A., Hawkinson, L., & Metzger, I. (2016). *Development and implementation of quality rating and improvement systems in Midwest Region states* (REL 2016-143). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. Retrieved from: <http://ies.ed.gov/ncee/edlabs>.
- ¹⁷ Sabol, T. J. & Pianta, R. C. (2014). Do standard measures of preschool quality use in statewide policy predict school readiness? *Education, 9*, 116–164.
- ¹⁸ Keys et al. (2013). Preschool center quality and school readiness: Quality effects and variation by demographic and child characteristics. *Child Development, 84*, 1171–1190. doi: 10.1111/cdev.12048
- ¹⁹ Barnett, W. S. (2011, August 19). Effectiveness of early educational intervention. *Science, 333*, 975–978. doi: 10.1126/science.1204534.

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