



Early Learning: Program Quality in Early Childhood Education Annotated Bibliography

Overwhelmingly, research shows that program quality is a major determinant in the achievement gains for young children who participate in early education programs. Teacher quality, in particular, is closely related to positive educational outcomes for preschool participants. Research shows that children in programs whose lead and supporting teachers have higher education qualifications and ongoing professional development show the greatest gains. Also, research shows that the use of developmentally appropriate curricula predicts program quality, as does a high degree of direct instruction that comes from smaller staff-child ratios and focused small group activities. Evidence suggests that these positive outcomes benefit a diverse range of children from various racial, ethnic, and socioeconomic backgrounds. The development of Quality Rating and Improvement Systems (QRISs) shows promise in giving states a tool to assess program quality accurately and link together disjointed components of early childhood education systems.

The following studies provide a sampling of research on policy topics with nationwide applicability.

The importance of program quality on educational outcomes

1. **Yoshikawa, H., Weiland, C., Brooks-Gunn, J., et. al. (2013). *Investing in Our Future: The Evidence Base on Preschool Education*. Society for Research in Child Development and the Foundation for Child Development. Available online at www.srcd.org**

This study of studies draws conclusions about eight topics related to pre-K education. It concludes that large-scale public preschool programs can have substantial impacts on children's early learning, that quality preschool education is a wise investment, and that the most important features of good preschool education are stimulating and supportive interactions between teachers and children and the effective use of curricula. It concludes that preschool benefits middle-class children as well as disadvantaged children, that a second year of preschool helps, and that preschool has long-term benefits in spite of test-score convergence. It cautions that added comprehensive services be targeted and wisely chosen to ensure solid returns.

2. **Weiland, C. & Yoshikawa, H. (2013). Impacts of a Prekindergarten Program on Children's Mathematics, Language, Literacy, Executive Function, and Emotional Skills. *Child Development* (84.6), 2112-2130.**

This study assessed the impacts of Boston Public Schools' (BPS) city-wide public prekindergarten program. It makes a significant contribution to pre-K research, because BPS pre-K is a free, full-day program open to all children. Therefore the study provides evidence on the effects of pre-K on children from all income levels. The program provides a comprehensive literacy and math curriculum delivered with a district-developed teacher-coaching system. As all BPS teachers, the pre-K teachers were required to have bachelor's degrees — and master's degrees within five years of hiring. This study found significant gains in math, literacy and measures of executive functioning for participating children. It found those from low-income households benefited more than others on measures of math and executive functioning. Hispanic children benefited most — and Asian and black students made significant gains. Higher-income white children also benefited significantly from the program. The researchers found no differences in program impact by gender.

3. **Keys, T.D., Farkas, G., Burchinal, M.R., Duncan, G.J., Vandell, D.L., Li, W., Ruzek, E.A., & Howes, C. (2013). Preschool Center Quality and School Readiness: Quality Effects and Variation by Demographic and Child Characteristics. *Child Development* (84.4), 1171-1190.**

In this study of studies, researchers investigate the linkage between preschool center quality and the level of school readiness demonstrated by program participants at kindergarten entry. Additionally, this meta-analysis looks at how a child's demographic background or childhood characteristics, such as initial

cognitive skills and behavioral problems, will impact the relationship between center quality and school readiness outcomes. Findings from four large-scale childcare studies indicate that center quality positively affects children's school readiness skills, including early math and language development. The researchers found little evidence of differential effects based on children's demographic or initial child characteristics.

- 4. Fuhs, M.W., Farran, D.C., & Nesbitt, K.T. (2013) *Preschool Classroom Processes as Predictors of Children's Self-Regulation Skills Development. School Psychology Quarterly (28.4), 347-359.***

This study assesses the role of classroom practices in the development of children's cognitive self-regulation skills or their ability to focus and follow tasks. Cognitive self-regulation is a necessary predictor of a child's level of school readiness. The study follows children in over 60 classrooms across the Southeast. Researchers found that interactive classrooms led to gains in children's self-regulation ability throughout the school year, as did teacher behaviors focused on affirmation and positive emotional feedback. Classrooms with more teacher-led instructional time, higher quality instruction, and more time spent on early math and literacy instruction also were positively related to gains in self-regulation. This work stresses the importance of ongoing professional development and training in shaping child outcomes from preschool participation.

- 5. Burchinal, M., Kainz, K., & Cai, Y. (2011). *How Well do Our Measures of Quality Predict Child Outcomes? A Meta-Analysis and Coordinated Analysis of Data from Large-Scale Studies of Early Childhood Settings. In Zaslow, M., Martinez-Beck, I., Tout, K. & Halle, T. (Eds.), Quality Measurement in Early Childhood Settings (pp. 11-31). Baltimore, MD: Brookes Publishing Co.***

In this study of studies, the authors compare the findings from 20 research projects to determine if the measured and observed quality of early childhood education programs is associated with children's developmental outcomes. They found that children in high-quality programs had greater achievement in academic, language, and social skills than children not enrolled in high-quality programs. These positive outcomes were greater for two- and three-year-old participants than for four-year-olds, indicating that earlier educational intervention can make a larger impact on children's development. In a separate analysis isolating the educational impact of high-quality programs on children of various income levels, the authors found that low-income children benefited significantly from high-quality programs in their academic, language, and social development.

- 6. Vandell, D.L., Belsky, J., Burchinal, M., Steinberg, L., Vandergrift, N., & the NICHD Early Child Care Research Network. (2010). *Do Effects of Early Child Care Extend to Age 15 Years? Results from the NICHD Study of Early Child Care and Youth Development. Child Development (81.3), 737-756.***

This report assesses the long-term benefits of high-quality child care for the more than 1,000 children who participated in the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (NICHD). The report follows the study participants from birth to age 15; it found that teenagers who participated in high-quality early child care as children performed better academically later in school than ones who had low-quality or no early child care. These positive benefits for program participants increase as the quality of their program increases. High-quality care is associated with less participant-reported negative externalizing behaviors, such as physical aggression and rule breaking. Increased hours of child care outside the home, regardless of quality, is associated with more participant-reported behavioral issues, such risk-taking behaviors and impulsiveness.

- 7. Burchinal, M., Vandergrift, N., Pianta, R.C., & Mashburn, A.J. (2010). *Threshold Analysis of Association Between Child Care Quality and Child Outcomes for Low-income Children in Pre-kindergarten Programs. Early Childhood Research Quarterly (25), 166-176.***

In this evaluation of prekindergarten programs in 11 states, researchers investigate the role of teacher-child interactions and intentional instruction quality on the academic and social outcomes for children from low-

income households. Children from low-income households in high-quality programs benefited more from quality instruction than similar children in low-quality classrooms. The quality of instruction has positive effects on children's language, reading and math skills. Also, the quality of teacher-child interactions made a larger impact on the social and behavioral outcomes for these children in high-quality classrooms than for those in lower-quality classrooms.

8. Phillips, D., & Meloy, M. (2012). High-Quality School-Based Pre-K Can Boost Early Learning for Children with Special Needs. *Exceptional Children* (78.4), 471-490.

In this study of Tulsa, Oklahoma's school-based pre-K program, researchers measure the impact of the state program in preparing children with special needs for school entry. Oklahoma's school-based pre-K delivers significant achievement gains in early literacy for children with special needs, helping these children to stay on pace with their peers. This finding demonstrates that states can effectively use high-quality pre-K programs as an early intervention service for children with special needs.

Teachers build the foundation of pre-K program quality and success

9. Whitebrook, M., & Ryan, S. (2011). Degrees in Context: Asking the Right Questions about Preparing Skilled and Effective Teachers of Young Children. *Preschool Policy Brief* (22), National Institute for Early Education Research. Available online at www.nieer.org

This brief draws conclusions on the necessary components of teacher quality to achieve long-term educational outcomes in early childhood education programs. While formal teacher qualifications such as an associate or a bachelor's degree are important, not all teacher education programs are created equal. In order for teachers to be effective, teacher preparation programs should focus on developmentally-appropriate curricula and competencies needed for young children. Likewise, this brief stresses the significance of continued professional development to ensure that teachers are delivering the most effective curricula and using the best practices. Finally, the brief contends that workplace conditions, teacher compensation, and teacher well-being can affect teacher quality and level of instruction. The authors recommend modifying professional development and teacher certification programs to focus on practice-based learning that addresses all of the developmental needs of young children, strengthening teacher requirements to address gaps in instructional knowledge, creating early learning longitudinal data systems, and increasing early childhood education teachers' access to ongoing learning.

10. Mashburn, A.J., Pianta, R.C., Hamre, B.K., Downer, J.T., Barbarin, O.A., Bryant, D., Burchinal, M., Early, D.M., & Howes, C. (2008). Measures of Classroom Quality in Prekindergarten and Children's Development of Academic, Language, and Social Skills. *Child Development* (79.3), 732-749.

In this study of publically funded pre-K programs in 11 states, researchers found that aspects of program quality can help increase enrolled four-year-olds' preparation for school. The study measured program quality in three ways: an evaluation of formalized program standards, an observation of classroom environment and quality, and an observation of teacher-child interactions. Results indicate that the level of instruction and emotional support achieved by quality teachers impacted children's development of school readiness skills most. Instructional interactions between teachers and children positively impacted academic and language skills, while emotionally-supported interactions between teacher and child predicted children's social skills. These findings suggest that professional development and policies that support beneficial teacher-child interactions, such as small staff-child ratios, can reap long-term benefits in preparing children for school.

11. Kelley, P., & Camilli, G. (2007). *The Impact of Teacher Education on Outcomes in Center-Based Early Childhood Education Programs: A Meta-analysis*. National Institute for Early Education Research and The Pew Charitable Trusts. Available online at www.nieer.org

In this meta-analysis, the authors study the impact of teacher education requirements on the overall quality of early childhood education programs and the developmental outcomes of the children in these programs.

Researchers compared the findings from 32 studies of early childhood education programs. Their comparison found that teachers with a bachelor's degree are associated with a significantly larger positive effect on program quality than teachers with less formal education.

The role of states in monitoring program quality — Quality Rating and Improvement Systems (QRISs)

- 12. Lahti, M., Sabol, T., Starr, R., Langill, C., & Tout, K. (2013). Validation of Quality Rating and Improvement Systems (QRIS): Examples from Four States. *Research-to-Policy, Research-to-Practice Brief OPRE 2013-036*. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Available online at www.acf.hhs.gov**

The authors pull together findings from four state QRISs to stress the importance of validation studies in system development. They find that the quality of standards and indicators used in the four QRISs prove to be valid, however the functionality of quality measurements in QRISs need more work to strengthen the link between QRIS ratings and program outcomes. For instance, their evaluation finds that QRISs that measure observed program quality produce valid ratings for classroom quality measures. Not all QRISs include such classroom quality measurements in their design. Likewise, the measurements of children's developmental growth employed in the four QRISs weakly link with QRIS ratings and program quality. The authors conclude that work is needed to strengthen the relationship between QRIS ratings and measurements of program quality. States should use data-driven validation studies as they develop their statewide QRIS to ensure that the established ratings clearly correspond to the quality and outcomes of programs.

- 13. Schulman, K., Matthews, H., Blank, H., & Ewen, D. (2012). *A Count for Quality: Child Care Center Directors on Rating and Improvement Systems*. The National Women's Law Center. Available online at www.nwlc.org**

In this report, the authors compare the experiences of child care directors in nine states with QRISs that include quality standards, monitoring and assessment, and financing and support to find areas of improvement and success in the quality rating systems. Overall, the directors indicated that QRISs that are focused on continuous quality improvement, that offer levels of support — including financial incentives and mentoring opportunities, and have aligned child care with other high-quality systems such as after-school care — are the most effective. The authors' comparison is instructive in showing how various states have designed QRISs and in highlighting opportunities and obstacles faced by states in QRIS implementation. With the help of the child center directors, the authors recommend that policy-makers connect quality ratings standards that fully address the essential elements of quality care, develop a reliable quality assessment for programs under the QRIS, incentivize and support programs to increase their quality rating, ensure that the public is aware of the QRIS and its role in locating quality child care, and align the state's QRIS with other high-quality educational programs within in the early childhood system.

- 14. Sabol, T.J., Soliday Hong, S.L., Pianta, R.C., & Burchinal, M.R. (2013). Can Rating Pre-K Programs Predict Children's Learning? *Science* (341.6148), 845-846.**

Researchers compiled data from studies of children in over 703 state-funded pre-K classrooms across nine states to investigate how well the quality components in the state QRIS correlate with program participants' level of school readiness when entering kindergarten. They found that QRISs with two elements are better predictors of participants' outcomes: the quality of teacher-child interactions as measured by Classroom Assessment Scoring System and the overall learning environment of the early childhood program as measured by the Early Childhood Environmental Rating Scale. The study found that interactions should be stimulating and supportive to aid children's early development. However, most of the studied rating systems failed to observe and assess the quality of teacher-child interactions. This work is instructive in demonstrating the importance of linking the quality rating with measures of children's learning.

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