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Timing of Early Childhood Education:

Is there an optimal time to intervene in a young child's life to improve readiness for school?

Increasing evidence suggests that high quality early care and education (ECE) is important for children's readiness for kindergarten and later success in school. As a result, more children than ever are attending ECE programs and more states are funding some type of ECE for preschool-aged children. What is less well understood is *when is the right time* to begin ECE services for children to reap the most powerful benefit on children's school readiness.

Review of Existing Literature

This review is focused on center-based ECE programs serving children who are developing at a typical rate and who may or may not be low-income. Outside its scope are large literatures on timing in early childhood special education, and timing for outcomes of interest other than school readiness.

There are few existing studies that systematically compare outcomes and benefits for children who began ECE at different ages. Reynolds and Temple (2005) summarize long-term findings from three model programs serving children at risk for school failure, primarily due to poverty. The model programs are high quality, comprehensive, center-based ECE programs: Abecedarian, High Scope, and the Chicago Parent Child Centers. The authors note that all three programs began serving children sometime during the birth-to-three period. Findings indicate that while the one program that began in infancy demonstrated significant economic returns (roughly $3 per every dollar invested), this was significantly less than the programs that began when the children were three years old (roughly $7 -$8 per every dollar invested). This indicates that center-based programs for infants and toddlers may not have as large of an economic payoff as center-based programs serving preschoolers, it must be noted, however, that these studies were initiated some time ago, and that findings for age-at-start may be different if conducted today, given advances in curriculum and intervention and changes in target populations.

Recommendation:

To have the greatest impact on children's readiness for kindergarten and beyond, begin early care and education programs at the age of three. This recommendation assumes high-quality and comprehensive programming targeted to at risk children.

Beyond the economic benefit, several studies (from a state-funded preschool program, a large-scale nationally representative sample following children from birth to kindergarten entry, and a evaluation of a model preschool program), have found that children who began in center-based ECE at age 3 are better prepared academically for kindergarten and/or are more successful in the early years of school than are children who began either *earlier or later* (Arteaga, Humpage, Reynolds, and Temple, 2009; Frede, Jung, Barnett, and Figueras, 2009; Loeb, Bridges, Bassok, Fuller, and Rumberger, 2007). Therefore, assuming high quality and intensive programming, research suggests that beginning center-based ECE at the age of three has the greatest impact on a child's readiness for formal education, though significant benefits were still found for children who began attending the model programs at the age of four.

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Potential Counter-Evidence

Like many other areas of social and behavioral scientific research, there are few well-established, unambiguous answers or guidelines that can be extracted from the existing literature. Research on age of entry into ECE is no exception. While the findings outlined above come from well-designed studies and can be judged to be credible, other credible studies offer different perspectives.

For instance, a few large-scale studies have *not* found sustained benefits from beginning ECE earlier than age 4 (NICHD, 2001, 2005; US Department of Health and Human Services, 2010). While these studies are credible, there are important differences. The studies are of community-based ECE programs with a much wider range of quality and number of hours spent in programming over the course of early childhood. As a result, it is possible that some of the children included start ECE *earlier*, are in ECE *for more hours*, and were in *lower quality care,* as center-based care for infants and toddlers has been repeatedly shown to be of lower quality than care for older children. While it might be important to do so, current research makes it virtually impossible to disentangle the three variables mentioned above (age-at-start, total time spent in programming, and program quality).

Additionally, in several of the longitudinal studies mentioned in this review (Loeb et al., 2007; Arteaga, Humpage, Reynolds, and Temple, 2009), the evidence in promotion of two years of preschool is mixed, depending on both the domain (i.e. socio-emotional vs. academic) and the time period in which the benefits were ascertained (i.e., short-term benefits vs. long-term benefits).

MELF Connections

- Consistent with the literature focused on school readiness, MELF funding emphasized programming which began at the age of three, including the Parent Aware pilot, the Scholarship pilot, Joyce Preschool, Caring for Kids Initiative (CfKI), and Bloomington Preschool.
- From the forthcoming report of the MELF Bloomington Preschool evaluation of full day versus half day: Although the length of the day did not relate to children's readiness at the end of the ECE, children who began ECE at age 3 demonstrated better outcomes at the end of the ECE year compared to their peers who began ECE at the age of 4.

Citations

U.S. Department of Health and Human Services, Administration for Children and Families (2010). Head Start Impact Study: Final Report. Washington D.C.

Frede, E., Jung, K., Barnett, W.S. & Figueras, A. (2009). The APPLES Blossom: The Abbott Preschool Program Longitudinal Effects Study (APPLES). New Brunswick, NJ: The National Institute of Early Education Research.

Loeb, S., Bridges, M., Bassok, D., Fuller, B., & Rumberger, R. (2007). How much is too much? The influence of preschool centers on children's social and cognitive development. *Economics of Education Review, 26*, 52-66.

NICHD Early Child Care Research Network. (2001). Child care and children's peer interaction at 24 and 36 months: The NICHD Study of Early Child Care. *Child Development, 72,* 1478-1500.

NICHD Early Child Care Research Network. (2005). Early Child Care and Children's Development in the Primary Grades: Follow-Up Results from the NICHD Study of Early Child Care. *American Educational Research Journal, 42,* 537-570.

Reynolds, A. J., & Temple, J. A. (2005). Priorities for a new century of early childhood programs. *Infants & Young Children, 18*, 104-118.

Reynolds, A. (1995). One Year of Preschool Intervention or Two: Does it Matter? *Early Childhood Research Quarterly, 10,* 1-31.

Arteaga, I., Humpage, S., Reynolds, A. J., & Temple, J. A. (2009). One Year of Preschool or Two: Does it Matter for Long-term Outcomes? Presented at the Human Capital Research Collaborative Mini-Conference: Promoting Child Health and Well Being, Birth to Age Five, April, 27 2009. Downloaded from http://www.humancapitalrc.org/events/2009/childhealth.cfm, on May 13th, 2010.