Model early childhood education programs
Pre-K to 12 Education
Literature review updated December 2013.

As part of WSIPP's research approach to identifying evidence-based programs and policies, WSIPP determines "what works" (and what does not work) to improve outcomes using an approach called meta-analysis. For detail on our methods, see our Technical Documentation. At this time, WSIPP has not yet calculated benefits and costs for this topic.

Program Description: This analysis focuses on pre-kindergarten programs developed and administered by researchers primarily in the 1960s and 1970s, including demonstration and pilot programs such as Abecedarian and Perry Preschool. The curriculum and philosophy of these programs varied widely and programs ranged in length from one to five years.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect size and standard error			Unadjusted effect size (random effects model)	
				ES	SE	Age	ES	p-value
Crime	Primary	2	110	-0.322	0.214	29	-0.322	0.132
High school graduation	Primary	3	203	0.314	0.265	18	0.314	0.237
Test scores	Primary	2	309	0.568	0.123	4	0.568	0.001
K-12 grade repetition	Primary	3	192	-0.463	0.253	17	-0.463	0.067
K-12 special education	Primary	3	204	-0.470	0.263	17	-0.470	0.074
Teen births under age 18	Primary	2	109	-0.441	0.395	17	-0.441	0.265
Teen births (second generation)	Secondary	2	109	-0.441	0.395	17	-0.441	0.265

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Barnett, W.S., & Masse, L.N. (2007). Comparative benefit-cost analysis of the Abecedarian program and its policy implications. *Economics of Education Review, 26*(1), 113-125.

Campbell, F.A., Pungello, E.P., Burchinal, M., Kainz, K., Pan, Y., Wasik, B.H., Barbarin, O.A., Sparling, J.J., & Ramey, C.T. (2012). Adult outcomes as a function of an early childhood educational program: An Abecedarian Project follow-up. *Developmental Psychology, 48*(4), 1033-43.

Campbell, F.A., Ramey, C.T., Pungello, E.P., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian project. *Applied Developmental Science, 6*(1), 42-57.

Deutsch, M., Taleporos, E., & Victor, J. (1974). A brief synopsis of an initial enrichment program in early childhood. In S. Ryan (Ed.), *A report on longitudinal evaluations of preschool programs, Volume 1: Longitudinal evaluations* (pp. 49-60). Washington, DC: Office of Child Development, U.S. Department of Health, Education, and Welfare.

Heckman, J.J., Pinto, R., Shaikh, A.M., & Yavitz, A. (2011). *Inference with imperfect randomization: The case of the Perry Preschool program* (Working Paper No. 16935). Cambridge, MA: National Bureau of Economic Research.

Karnes, M.B., Shwedel, A.M., & Williams, M.B. (1983). A comparison of five approaches for educating young children from low-income homes. In The Consortium for Longitudinal Studies (Contributors), *As the twig is bent . . .: Lasting effects of preschool* (pp. 133-169). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Schweinhart, L J., Barnes, H.V., & Weikart, D.P. (1993). *Significant benefits: The High/Scope Perry Preschool Study through age 27.* Ypsilanti, MI: High/Scope Press, 1993.

Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2005). *Lifetime effects: The High/Scope Perry preschool study through age 40.* Ypsilanti, MI: High/Scope Press.

Wasik, B.H., Ramey, C.T., Bryant, D.M., & Sparling, J.J. (1990) A longitudinal study of two early intervention strategies: Project CARE. *Child Development, 61*(6), 1682-1896.

Washington State Institute for Public Policy