

Does it Work?

What the Research Says

A growing body of research supports the effectiveness of Montessori education over a range of outcomes, including school readiness, academic achievement, executive function skills, and more. A recent large-scale study in South Carolina¹ and an in-depth study in Connecticut² have supported all of the findings below as well as showing gains across racial and income sub-groups.

EXECUTIVE FUNCTIONS: Children in Montessori classrooms have shown strengths in executive function skills, including self-regulation, working memory, planning, and inhibitory control, especially with high fidelity implementation. Executive function strengths were associated with academic achievement. Executive function skills predict positive life-long outcomes such as academic achievement, income potential, and marital satisfaction.^{3, 4, 17, 18, 5}

SOCIAL DEVELOPMENT: Children in Montessori classrooms have shown better social problem solving ability, a stronger sense of community and social justice, and more positive perceptions of classmates, and they used more positive social problem-solving strategies.^{6, 16, 17}

GENERAL ACADEMIC ACHIEVEMENT: Children in Montessori classrooms have shown higher levels of self-regulation, which was associated with academic success. Montessori students have also shown higher levels of intrinsic motivation and time on academic tasks.^{5, 6, 7}

LANGUAGE: Children in Montessori classrooms have shown strengths in phonological decoding, letter-word identification, reading assessments, sentence structure, and writing creativity^{16, 18, 18, 8, 9, 10, 11}

MATHEMATICS: Children in Montessori classrooms have shown higher scores in applied problem solving, understanding of math concepts, and standardized test scores.^{16, 17, 18, 8, 9, 12, 13, 14}

SCIENCE: In one study, children in a public Montessori program from ages 3 to 11 achieved significantly higher science standardized test scores in high school.¹²

SCHOOL READINESS: While the Montessori approach recognizes that learning begins at birth, well before conventional schooling starts, children in Montessori preschool and kindergarten classrooms have shown strengths in traditional “school readiness” measures such as phonological decoding, letter-word identification, and math skills.^{15, 16, 17, 18}

¹ Culclasure, B., Fleming, D. J., Riga, G., & Sprogis, A. (2018). An Evaluation of Montessori Education in South Carolina's Public Schools. The Riley Institute at Furman University. Unpublished manuscript.

<https://riley.furman.edu/sites/default/files/docs/MontessoriOverallResultsFINAL.pdf>

² Lillard A. S., Heise M. J., Richey E. M., Tong X, Hart A and Bray P. M. (2017) Montessori Preschool Elevates and Equalizes Child Outcomes: A Longitudinal Study. *Front. Psychol.* 8:1783. doi: 10.3389/fpsyg.2017.01783

³ Diamond, A. & Lee, K., “Interventions Shown to Aid Executive Function Development in Children 4 to 12 Years Old,” *Science* 333:959-964 (August 2011)

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- ⁴ Diamond, A., "Executive Functions," *Annu Rev Psychol.* 2013; 64: 135–168.
- ⁵ Ervin, B., Wash, P. D., & Mecca, M. E. (2010). A 3-year study of self-regulation in Montessori and non-Montessori classrooms. *Montessori Life*, 22(2), 22-31.
- ⁶ Rathunde, K., & Csikszentmihalyi, M. (2005a). Middle school students' motivation and quality of experience: A comparison of Montessori and traditional school environments. *American Journal of Education*, 111(3), 341-371.
- ⁷ Rathunde, K., & Csikszentmihalyi, M. (2005b). The social context of middle school: Teachers, friends, and activities in Montessori and traditional school environments. *The Elementary School Journal*, 106(1), 59-79.
- ⁸ East Dallas Community Schools Summer Newsletter 2010, available from National Center for Montessori in the Public Sector.
- ⁹ Mallett, J. D., & Schroeder, J. L. (2015). Academic achievement outcomes: A comparison of Montessori and non-Montessori public elementary school students. *Journal of Elementary Education*, 25(1), 39-53.
- ¹⁰ Moody, M. J., & Riga, G. (2011). Montessori: Education for life. In L. Howell, C. W. Lewis, & N. Carter (Eds.), *Yes we can!: Improving urban schools through innovative education reform* (pp. 127-143). Charlotte, NC: Information Age Publishing.
- ¹¹ Rodriguez, L., Irby, B. J., Brown, G., Lara-Alecio, R., & Galloway, M. (2005). An analysis of reading achievement related to pre-kindergarten Montessori and transitional bilingual education. In V. Gonzalez & J. Tinajero (Eds.), *Review of research and practice* (Vol 3., pp. 45-65). Mahwah, NJ: Laurence Earlbaum Associates.
- ¹² Dohrmann, K. R., Nishida, T. K., Gartner, A., Lipsky, D. K., & Grimm, K. (2007). High school outcomes for students in a public Montessori program. *Journal of Research in Childhood Education*, 22(2), 205–217. doi:10.1080/02568540709594622
- ¹³ Donabella, M. A., & Rule, A. C. (2008). Four seventh grade students who qualify for academic intervention services in mathematics learning multi-digit multiplication with the Montessori checkerboard. *TEACHING Exceptional Children Plus*, 4(3). Retrieved from ERIC: <http://files.eric.ed.gov/fulltext/EJ967477.pdf>
- ¹⁴ Reed, M. K. (2008). Comparison of the place value understanding of Montessori elementary students. *Investigations in Mathematics Learning*, 1(1), 1-26.
- ¹⁵ Ansari, A. & Winsler, A. (2014). Montessori public school pre-K programs and the school readiness of low-income Black and Latino children. *Journal of Educational Psychology*, 106(4), 1066–1079.
- ¹⁶ Lillard, A. S. & Else-Quest, N., "Evaluating Montessori Education," *Science* 131: 1893-94 (Sept. 29, 2006).
- ¹⁷ Lillard, A. S., "Preschool Children's Development in Classic Montessori, Supplemented Montessori, and Conventional Programs," *Journal of School Psychology* 50:379-401 (June 2012).
- ¹⁸ Lillard, A. S. & Heise, M. J., "An Intervention Study: Removing Supplemented Materials from Montessori Classrooms Associated with Better Child Outcomes," *Journal of Montessori Research* 2(1) (2016).