

Montessori education significantly impacts academic and non-academic outcomes



Photo: Corey Borgman

Montessori students performed better than students in traditional education on academic and non-academic outcomes.

What is the aim of this review?

This review examined whether children who receive Montessori education have better academic and non-academic outcomes than children who receive traditional education. This review also examined whether certain elements moderate the effects of Montessori education (i.e., grade level, public vs private Montessori settings, random assignment, treatment duration and length of follow-up measurements).

Relative to traditional education, Montessori education has modest but meaningful positive effects on children's academic and non-academic (executive function, creativity and social-emotional) outcomes. This is indicated by a meta-analysis of 32 studies in which it was possible to compare traditional business-as-usual education to Montessori education.

What is this review about?

How best to educate children is an issue of enduring concern, and Montessori is the most common alternative to the conventional education system. Montessori includes a full system of lessons and hands-on materials for children from birth to 18 years, presented individually, and embedded in a philosophical framework regarding children's development and its optimal conditions.

The term Montessori is not trademarked, and, therefore, its implementation can vary. We studied the range of variations included in the literature, which likely reflects the range of implementations encountered in the world. We also compared Montessori with a range of control conditions described in the literature as traditional (sometimes referred to as conventional, or business-as-usual), reflecting the implementation of traditional education in the real world.

What studies are included?

From a search yielding over 2,000 studies, the review evaluated 32 of the most rigorous Montessori studies, with publication dates ranging from 1970 to 2020.

Study participants were spread across age levels: preschool, elementary school and middle and high school.

The studies took place in eight countries: the USA (18 studies), Turkey (four studies), Switzerland (three studies) and one each in England, France, Malaysia, Oman, Iran, The Philippines and Thailand.



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How up-to-date is this review?

The review authors searched for studies published through February 2020.

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About this summary

This summary is based on Randolph, J. J., Bryson, A., Menon, L., Henderson, D. K., Kureethara Manuel, A., Michaels, S., rosenstein, d. l. w., McPherson, W., O'Grady, R., & Lillard, A. S. (2023). Montessori education's impact on academic and nonacademic outcomes: A systematic review. *Campbell Systematic Reviews*, 19, e1330. <https://doi.org/10.1002/cl2.1330>.

Financial support from the American Institutes for Research for the production of this summary is gratefully acknowledged.



How effective is Montessori education?

On academic outcomes, Montessori students performed about 1/4 of a standard deviation better than students in traditional education. The magnitude of these effects could be considered small when compared to findings obtained in tightly-controlled laboratory studies, but they could be considered to be medium-large to large when compared to studies in real-world school contexts involving standardized tests.

Most (29) of the included studies were conducted in schools implementing Montessori as a full program; the remaining three studies were short-term add-ons to otherwise traditional school curricula.

The effect sizes for academic outcomes are similar to those obtained in other studies that compared “No Excuses” charter schools to business-as-usual urban schools.

The magnitude of Montessori education's non-academic effects was slightly stronger than its effects on academic outcomes. Montessori students performed about 1/3 of a standard deviation higher than students in traditional education on non-academic outcomes, including self-regulation (executive function), well-being at school, social skills and creativity.

The magnitude of Montessori education's effects was greater for randomized than non-randomized study designs, greater for preschool and elementary school than for middle and high school, and greater for private Montessori compared to public Montessori settings.

What do the findings of the review mean?

Across a wide range of implementations (likely reflecting the range of Montessori implementations in the real world) and in studies of moderate to high quality, Montessori education has a nontrivial impact on children's academic and non-academic outcomes.