

Executive Summary

With support from the Self Family Foundation and the South Carolina Education Oversight Committee, the Riley Institute has completed a comprehensive study of Montessori education in South Carolina's public schools. Between 2011 and 2016, this mixed-method study examined how Montessori impacts a range of stakeholders in South Carolina and provided information needed to guide future investment in Montessori. Researchers investigated the following as parts of the study: the extent to which schools implemented Montessori with fidelity; the demographic makeup of public school Montessori students; the impact of Montessori education on academic and behavioral outcomes; the impact of Montessori education on affective skills such as creativity, social skills, work habits, student attitudes, and executive function in students; and Montessori teachers' perspectives on job satisfaction and the impact of Montessori. The study results conclude that students in public school Montessori classrooms across the state are faring well, as compared to similar non-Montessori public school students, when examining academic, behavioral, and affective outcomes.

Study Components

Impact Study: Data about academic and behavioral outcomes, such as standardized test performance, discipline, and attendance, were explored yearly as part of the impact study, along with affective outcomes such as creativity, social skills, work habits, and executive function.

- **Analyzing Student Demographics.** Using existing student record databases maintained by South Carolina Department of Education (SCDE), researchers compared demographic characteristics (gender, race, family income, ESL status, and special education status) of Montessori students to non-Montessori public school students. All Montessori students in the state were included in this yearly analysis.
- **Analyzing Student Academic and Behavioral Outcomes.** Researchers used existing student record databases maintained by the SCDE to examine standardized test performance, discipline, and attendance. The research team compared outcomes of Montessori students to demographically similar students who did not attend a Montessori school and to public school students across the state. All Montessori students in the state were included in this yearly analysis.
- **Examining the Impact of Montessori on Affective Outcomes.** Researchers examined differences in how Montessori students and non-Montessori students performed on assessments measuring creativity, work habits and social skills, student attitudes, and executive function. A cohort of students in a high-fidelity Montessori school was selected, one with a "no choice" enrollment situation (Montessori was the only choice for parents wanting to enroll their children in preschool). A cohort in a demographically matched school in another region of the state was selected as the comparison school. Approximately 100 Montessori and 100 non-Montessori students were included in the analysis each year.
- **Gaining a Deeper Understanding of Montessori Programs: Surveying Montessori Teachers.** Researchers used a survey instrument designed by the study team to examine how Montessori programs affected students, teachers, and schools from the perspectives of teachers. In the 2013-14 and 2015-16 academic years, an online survey was administered to all Montessori teachers within the South Carolina public school system. For both years of distribution, an average of 76% of Montessori teachers responded.

Implementation Study: Information about the extent to which public schools were adhering to the Montessori model was assessed in a two-part fidelity study.

- **Programmatic Fidelity.** All Montessori principals in the state were asked to complete a survey about the school's Montessori program. Questions were asked about implementation factors including multi-aged groupings, student assessment protocols, Montessori materials and equipment, Montessori accreditation, and teacher and assistant Montessori credentialing and training.
- **Classroom Observations.** Over four years, 126 classrooms across the state were randomly selected for an unannounced observation. Retired Montessori teachers who met stringent requirements and underwent extensive training conducted these observations. Teacher interviews were included as a part of this process.

Overview of Key Research Findings: Preliminary Results

- **Fidelity to the Model.** On average, public school programs in South Carolina are implementing the Montessori model with fidelity, although there is variation regarding the extent to which different programs implement authentic Montessori. Only those students in schools that met a minimum level of fidelity were considered “Montessori students” in the analyses below.
- **Student Demographics.** By the end of the study in the 2015-16 academic year, there were 7,402 students participating in a public Montessori program in 46 different schools across 22 districts in South Carolina. According to the National Center for Montessori in the Public Sector, this is higher than any other state in the country except California. Most Montessori programs are in Title I schools and the majority of students are low-income. One in ten Montessori students has a special education designation. While Montessori students are generally quite similar demographically to other public school students, Montessori students are slightly more advantaged when compared to non-Montessori public school students on these demographic variables.
- **Academic Outcomes.**
 - **Proficiency.** For the most recent year of data collection (2015-16), 52% of Montessori students met or exceeded state standards in ELA, 46% met or exceeded state standards in Math, 70% met or exceeded state standards in Science, and 80% met or exceeded state standards in Social Studies. When compared to non-Montessori public school students across the state, Montessori students were more likely to have met or exceeded the state standards in all four subjects.
 - **Achievement Growth Analyses.** After matching Montessori students to demographically similar non-Montessori students and controlling for student demographics and previous test scores, researchers found that Montessori students score significantly higher on ELA standardized tests than non-Montessori students across all three years of the analysis. Further, there was a significant Montessori advantage in two of the three years in Math and Social Studies. When examining multiple years of growth, Montessori students exhibited more achievement growth than non-Montessori students in all subjects except Writing. Subgroup analyses indicated that low-income Montessori students score significantly higher than low-income non-Montessori students in ELA, Math, and Social Studies.
- **Affective Outcomes.** Direct assessments of a cohort of students over four years show that Montessori students generally perform better than or similar to non-Montessori students on assessments of executive function, social skills/work habits, and student attitudes, although the results are mixed over the years. Montessori students exhibited significantly higher levels of creativity than non-Montessori students.
- **Behavioral Outcomes.** Montessori students consistently demonstrated higher school attendance than matched non-Montessori students after adjusting for the attendance rate in the previous year and student characteristics. Further, Montessori students were significantly less likely than similar non-Montessori students to have had a disciplinary incident during the school year.
- **Teacher Perceptions.** A majority of Montessori teachers report that they love their job and plan to remain in the profession. Few show interest in administration. Concerns expressed by teachers include the authenticity of their school’s program, the lack of understanding of Montessori by school and district administrators, the pressure of a standards-based curriculum, and the amount of time spent testing.