AN EVALUATION OF MONTESSORI EDUCATION
IN SOUTH CAROLINA’S PUBLIC SCHOOLS

EXECUTIVE SUMMARY

With support from the Self Family Foundation and the S.C. Education Oversight Committee, the Riley Institute has completed a comprehensive study of Montessori education in South Carolina’s public schools. Over the five-year period, this mixed-method study has developed a better understanding of how Montessori impacts a range of education stakeholders in South Carolina and provided information needed to guide future investment in Montessori. During the course of the study, researchers examined the following: the extent to which schools implemented Montessori with fidelity; the demographic makeup of public school Montessori students; the impact of Montessori education on student academic and behavioral outcomes; the impact of Montessori education on creativity, social skills, work habits, and executive function in students; and Montessori teachers’ perspectives on job satisfaction and the impact of Montessori on their students. The study results, detailed in the section below, 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 outcomes, behavioral outcomes, and affective outcomes such as creativity, social skills, and work habits.

STUDY COMPONENTS

Impact Study: Data about academic and behavioral outcomes, such as standardized test performance, discipline, and attendance, were explored as a part of the impact study, along with affective outcomes such as creativity, social skills, work habits, and executive function. Researchers accomplished this by undertaking the activities described below for each of the four years of data collection, although not all activities took place each year.

a. **Comparison of Montessori and Non-Montessori Public School Students: An Analysis of Student Demographics.** Using existing student record databases maintained by South Carolina Department of Education (SCDE), researchers compared characteristics (gender, race, family income, ESL status, and special education status) of Montessori students to non-Montessori public school students.

b. **Comparison of Montessori and Non-Montessori Public School Students: An Analysis of Student Academic and Behavioral Outcomes.** Researchers used existing student record databases obtained by the SCDE to examine differences in standardized test performance, discipline, and attendance. The research team compared outcomes of Montessori students to similar students who did not attend a Montessori school and to students across the state.

c. **Generalizing the Effects of Montessori on Students: A Cohort Analysis.** Using a variety of age-appropriate assessments administered directly to students, researchers examined differences in how Montessori students and non-Montessori students performed on assessments measuring creativity, work habits, social skills, and executive function. A cohort of students in a Montessori school was selected, one with large cohorts of students and a “no choice” enrollment situation (Montessori was the only choice for parents of three and four year-old students wanting to enroll their children in preschool.) Another demographically matched school in another region of the state was selected as the comparison school.

d. **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 perspective of teachers. Surveys were web based and emailed to all Montessori teachers in the state.
Implementation Study: Information about the extent to which public schools were adhering to the Montessori model was assessed. Researchers undertook a two-part fidelity study each year of the study, as described below.

a. Programmatic Fidelity: All Montessori principals were asked to complete an in-depth yearly program implementation survey on the school's Montessori program. Questions were asked about challenges to authentic Montessori implementation, along with information on implementation factors including multi-aged groupings, student assessment protocols, Montessori materials and equipment, Montessori accreditation, and teacher and assistant Montessori credentialing and training.

b. Classroom Observations: Over four years, 99 classrooms across the state were randomly selected for observation. Retired Montessori teachers who met stringent requirements and underwent extensive training conducted these observations. All Montessori programs were observed at least once.

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: While most of Montessori programs in South Carolina are in Title I schools, an analysis of multiple years of data show that Montessori students are slightly more advantaged than non-Montessori public school students across the state in terms of poverty status. Some differences also exist when analyzing race, special education and ESL status. Thus, any analyses of academic and behavioral outcomes must control for these differences.

• Academic Outcomes:
  Year-by-Year Analyses. After controlling for student demographics, statistically significant results over multiple years pointed to Montessori students generally scoring better on ELA and Writing standardized tests and non-Montessori generally scoring better in Math standardized tests, although there were inconsistencies among years. In an effort to deal with selection bias, researchers matched Montessori students to non-Montessori students with the same demographics and with similar test scores. These analyses indicated that Montessori students scored higher in ELA (both overall and among nearly every subgroup). There were no significant overall differences in Math or Writing. Supplemental analyses indicated that Montessori students also demonstrated higher test scores in Social Studies.

  Year-to-Year (Growth) Analyses. After controlling for student demographics, statistically significant results indicated that Montessori students had higher standardized test score growth in both Math and ELA across two years of learning and across three years of learning. Higher Montessori achievement growth was generally present for all subgroups of students, including low-income and minority students as compared to their non-Montessori counterparts.

  Future Analyses. Researchers will examine specifically how third grade reading scores differ between Montessori and non-Montessori populations; how fidelity to the Montessori model affects outcomes; and how different analytical approaches may affect the above results.

• Affective Outcomes: Direct assessment of a cohort of students over four years show that Montessori students generally perform better than non-Montessori students on assessments measuring creativity, social skills, and work habits. Results are mixed for assessments measuring executive function.

• Behavioral Outcomes: Cross-sectional analyses show that Montessori students consistently demonstrate better behavioral outcomes (discipline) than similar non-Montessori students. These results are statistically significant. Few consistent differences were seen in attendance, although any differences detected favored Montessori students.

• 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.