South Carolina’s push to bring the century-old Montessori model to public classrooms may be paying off in both student performance and creativity, according to a new longitudinal evaluation.

The Riley Institute, a public policy research group at Furman University in Greenville, found public students in Montessori-based schools on average outperformed public students in schools with other pedagogical models in English/language arts and math, and also in a separate measure of creativity. The schools using the Montessori model also had higher attendance and lower suspension rates than other public schools.

The study found a higher percentage of students in Montessori programs met or exceeded state performance benchmarks in language arts, math, science, and social studies, and showed faster growth in language arts over the course of the study. That was not equal for all students, though. White students in Montessori schools performed better than those in other public schools in all subjects, and black Montessori students outperformed their peers in other schools in language arts and social studies, but not math and science. Hispanic students performed about the same in both types of schools.

"I think it’s definitely something our state should look at very closely," said Brooke Culclasure, the study’s lead investigator and research director at the Riley Institute’s Center for Education Policy and Leadership. "These are very convincing results and it is something that needs to be looked at ... but this is a piece of the puzzle," she said.

Public Montessori programs are rising in popularity. Of the more than 500 public Montessori schools nationwide, more than half have been opened in the last 15 years. But there has been less evidence on the effectiveness of the model, which focuses on student-centered learning and multi-age classes, in public schools. South Carolina has more public Montessori programs than any other state but California, and the researchers found white and black tended to attend public Montessori and non-Montessori schools at similar rates, though fewer Hispanic students attended Montessori than non-Montessori public schools.

"There's been an open question of whether Montessori, which has been successful in the private sector, would really be as successful in the public sector," said David Fleming, a senior researcher at the Riley Institute, and assistant political science professor at Furman.

The study, backed by the Self Family Foundation and the South Carolina Education Oversight Committee, was not a randomized control trial; researchers created "matched" pools of students based on their prior achievement and characteristics, in line with a statistical method developed by Stanford University's Center for Research on Educational Outcomes. Researchers tracked students' achievement on state reading, writing, math, science, and social studies tests, as well as their performance on assessments of creativity and executive function, from 2012-13 to 2015-16. The researchers also surveyed principals, teachers, and students during that time, observed more than 120 classes, and analyzed school attendance and discipline data.

They found 21 of the 43 Montessori programs that were observed implemented the program with "high fidelity" in lesson planning, classroom environment, teacher practices, and student learning; only eight implemented the method loosely. However, lower-elementary classes were more likely to follow the model closely than upper-elementary or middle school classes.

"These schools were very good examples of how the Montessori method could be executed as a program," said Ginny Riga, a Montessori consultant for the South Carolina education department who contributed to the study.