

Reading and Math Achievement for African American Lower Elementary Students in Public Montessori Programs

Background

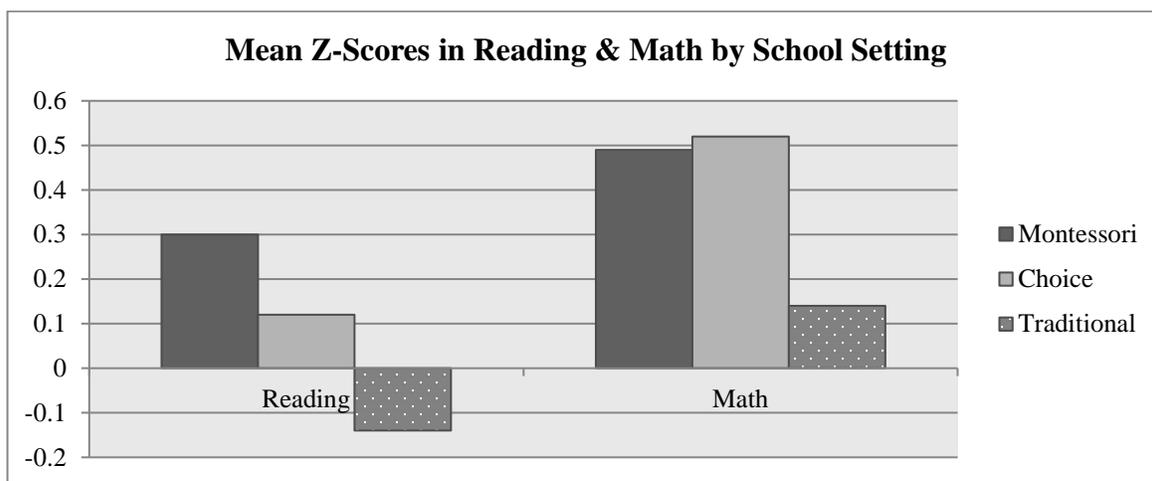
As Montessori programs in public schools expand, Montessori education is becoming available to a more diverse population of American students than ever before. Students of color have a significant presence in public Montessori schools; over a quarter of students in whole-school public Montessori programs are African Americanⁱ. As these programs grow, researchers have increasingly directed their attention to demonstrating that Montessori works in public schoolsⁱⁱ; however, few studies have examined outcomes for African American students at the lower elementary level, when critical reading and math skills are being established. This study sought to answer the question, how effectively does Montessori instruction promote achievement for African American third grade students in reading and math, compared to similar traditional schools and other public school choice programs?

Methods

This study compared mean reading and math state standardized test scores for African American third grade students in reading and math in Montessori, traditional, and other school choice settings within the same region of a single urban district in North Carolina. Since third grade marks the end of the lower elementary cycle, this was deemed an appropriate point for summative assessment. The sample consisted of 2,266 African American students who completed third grade at three public Montessori schools, three traditional schools, and three other school choice programs within this district between 2007 and 2014. Though end-of-grade standardized tests of reading and math are arguably not the best or most comprehensive measure of Montessori's impact, these tests remain the primary metric used by states, school districts, and charter authorizing bodies to evaluate public Montessori programs' effectivenessⁱⁱⁱ. A factorial multivariate analysis of covariance (MANCOVA) was conducted to check for statistically significant differences among group mean reading and math scores, with days absent from school included as a covariate.

Results

Test scores were converted to standard scores to facilitate comparisons across multiple editions of the test. The graph below shows mean scores for Montessori, traditional, and other choice program students.



The results of this omnibus test indicated that a statistically significant difference was present in adjusted mean reading and math scores by school setting, so planned comparisons were conducted to identify which between-group differences were statistically significant. The results suggest that African American, third-grade students in public

Montessori schools score significantly higher in reading and math than their counterparts in similar traditional schools, though when compared to their counterparts in other choice schools, Montessori students perform better in reading, but fare the same in math. Notably, the largest school in the other school choice program group was a STEM school, with an explicit focus on math. Though effect sizes were small, these differences were statistically significant.

Implications

Overall, these results suggest that Montessori instruction at the lower elementary level is somewhat effective in promoting academic achievement for African American students, especially in reading. Although this study does not explore how or why this might be, these findings lend support to Hall and Murray's^{iv} assertion that the Montessori method overlaps significantly with research-based best practices for teaching African American students. Along with the work of Hall and Murray and others who have documented the use of the Montessori method with culturally diverse students, this study is part of a counternarrative that challenges the misconception that Montessori is an elite pedagogy for predominantly White students in private schools^v. Similarly, although Montessori is sometimes pigeonholed as an early childhood program^{vi}, this study indicates that the Montessori method has value for African American students in the elementary years as well. These results indicate that African American students in public Montessori schools at grade three perform *at least* as well as their peers on traditional measures of academic achievement in both reading and math, and in many cases better. This is particularly remarkable given the lack of attention to testing and standardized test preparation characteristic of Montessori environments.

The finding that African American students in public Montessori schools perform significantly better than their counterparts in traditional schools also seems to validate Nancy McCormick Rambusch's^{vii} claim from 40 years ago that Montessori education could improve educational outcomes for these students, who historically have been underserved in American public schools. While this is not to say that Montessori is a panacea that will completely resolve the issue of inequitable outcomes for African American students, this study indicates that Montessori could be a viable tool to improve public education for these students.

ⁱ Debs, M. (2015). *Racial and economic diversity in US public Montessori schools*. Poster presented at the 2015 American Montessori Society Annual Conference. Philadelphia, PA. Retrieved from <http://amshq.org/Publications-and-Research/Research-Library/Conference-Handouts>

ⁱⁱ 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), 1066-1080; 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; Lillard, A., & Else-Quest, N. (2006). The early years: Evaluating Montessori education. *Science*, *313*, 1893-1894. doi: 10.1126/science.1132362; Lopata, C., Wallace, N., & Finn, K. (2005). Comparison of academic achievement between Montessori and traditional education programs. *Journal of Research in Childhood Education*, *20*, 5-13; 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.

ⁱⁱⁱ Whitehurst, G. J. (2014, July 10). *The future of test-based accountability*. Retrieved from Brookings: <http://www.brookings.edu/research/papers/2014/07/10-accountability-whitehurst>

^{iv} Hall, H. R., & Murray, A. K. (2011). *Intersections between Montessori practices and culturally-based curriculum for African-American students* [White paper]. Retrieved from the American Montessori Society: <https://amshq.org/Publications-and-Research/Research-Library/Position-and-White-Papers>

^v Murray, A. K. (2012). Public knowledge of Montessori education. *Montessori Life*, *24*(1), 18-21.

^{vi} Murray, 2012.

^{vii} Rambusch, N. M. (2007). Montessori as an American public school alternative. *Montessori Life*, 19(1), 26-33.
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