Examining Racial Segregation in Montessori Schools: A National Analysis of Enrollment Patterns and Sector Differences

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Abstract: This study examines racial enrollment patterns in Montessori schools across the United States and evaluates how these schools relate to broader patterns of school segregation. Using a national dataset of public and private Montessori and non-Montessori schools, we analyze Montessori programs' racial composition, demographic alignment with surrounding districts and neighborhoods, and contribution to within-district segregation. We estimate 37 percent of Montessori students are Black or Hispanic, with notable variation across school sectors. Further, we find Black or Hispanic students are underrepresented in many Montessori schools as compared to school district averages. Our multivariate analyses suggest Montessori schools contribute slightly more to within-district segregation than do non-Montessori schools, primarily due to enrollment patterns in private Montessori schools. Though Montessori education emphasizes inclusivity and cultural responsiveness, variation in enrollment patterns suggests access remains uneven across school sectors. This study examines the relationship between school choice, segregation, and the Montessori model, providing a baseline for evaluating current efforts to improve accessibility and inclusivity in Montessori schools nationwide.

Introduction

In March 2022, journalist Jessica Winter gained attention for a book review in *The New Yorker*. In her article titled "The Miseducation of Maria Montessori," Winter (2022) discusses Cristina De Stefano's (2022) biography of Maria Montessori, *The Child Is the Teacher: A Life of Maria Montessori*. In the article, Winter argues Montessori education in the United States does not match the philosophy of its namesake. She writes, "The obvious irony of Montessori's crusade on behalf of the poorest and least powerful in society is that its most visible legacy is selective private schools for the élite." While acknowledging the existence of a few hundred public Montessori schools across the country, Winter contends that Montessori education is a true option only for White children with higher-income parents because the Montessori "method was not only something to be taught; it was something to be sold."

Not surprisingly, Winter's article generated a significant reaction in the Montessori community. For example, Dr. Ayize Sabater, executive director of Association Montessori International of the United States (AMI/USA), responded to the article by noting that many in the Montessori community work diligently to make Montessori education more accessible and inclusive, despite larger structural and cultural challenges all education reformers face across the country (AMI/USA, 2022). Dr. Sabater also noted that Winter's observations about the current state of Montessori education were based on the author's "own limited experience and research."

Regardless of where one stands on Winter's argument, many in the Montessori community hold a sincere desire to make Montessori education more accessible to students of all racial and socioeconomic backgrounds. As these good faith efforts continue, it is essential to have a greater understanding of the state of Montessori education in the United States today to assess current challenges and establish a baseline for measuring future progress.

To this end, we examine the relationship between Montessori education and racial segregation across school sectors in the United States. Montessori education has expanded considerably in the public sector over the past 50 years, making it the "largest alternative pedagogy in the U.S. public school system" (Debs & Brown, 2017, p. 2). White and Huang (2022) found that Montessori is the eighth most common type of charter school in the

United States. Despite this growth in the public sector, the vast majority of Montessori schools in the United States are private, with approximately 4,500 private Montessori schools of 5,000 total (American Montessori Society, n.d.). Unlike previous analyses, which focused only on public Montessori students (e.g., Brown, 2016; Debs, 2016; Fleming & Culclasure, 2024), our analysis includes private Montessori schools, since this is how most students experience Montessori education.

An analysis of the relationship between Montessori education and school segregation is timely for three reasons. First, the COVID-19 pandemic significantly impacted students' well-being and learning. By one estimate, the average student lost about half of a grade level in math and one-third of a grade level in reading between 2019 and 2022 (Fahle et al., 2024). Second, racial and economic school segregation are associated with existing achievement gaps as well as the widening of those gaps over time (Reardon et al., 2024). Finally, as is further addressed below, the Montessori philosophy holds great promise for creating more equitable educational outcomes. Furthermore, evaluations of Montessori programs suggest they can enhance learning for students, including students of color (e.g., Fleming & Culclasure, 2024; Lillard, Tong, et al., 2023). Together, these factors highlight the value of examining how Montessori education relates to patterns of school segregation and educational equity.

Research Questions

Using the Urban Institute's Segregation Contribution Index (SCI), this study compares the racial composition of Montessori schools to that of surrounding neighborhoods and districts. Since Black and Hispanic students are grouped together in the Urban Institute data, we cannot examine them separately in this analysis. We seek to answer the following questions:

1) What is the proportion of Black or Hispanic students in Montessori schools, both overall and by school type?
2) How does the proportion of Black or Hispanic students in Montessori schools compare to the demographics of their local school districts and neighborhoods?
3) How does the presence of Montessori programs relate to racial segregation within school districts, and how does this differ by school sector?

In the following section, we provide an overview of trends in racial segregation in American schools and the impact of segregation on students. We also discuss several reasons Montessori programs could lead to better integrated schools, as well as factors that predict that Montessori education may exacerbate school segregation. In the subsequent section, we describe our dataset, which attempts to include all K–12 Montessori schools in the country. We combine these data with the Urban Institute's measure of school segregation. In the results section, we analyze the racial composition of Montessori student bodies, comparing those demographics across school sectors based on district and neighborhood averages. We then estimate how Montessori education relates to intradistrict school segregation. In the concluding section of the paper, we discuss important limitations of this analysis and highlight implications for future research.

Literature Review

Racial Segregation in America's Schools

Throughout the past 75 years, segregation of American schools has been a focus of the public, politicians, and researchers. In this paper, we define segregation as an uneven distribution of students across schools by race. Desegregation refers to efforts or policies aimed at reducing this unevenness, whereas integration goes further to imply meaningful, equitable inclusion of students across racial groups. Studies that have tracked changes in school segregation since *Brown v. Board of Education* (1954) identified initial declines in Black-White segregation from approximately the 1960s to the 1980s, followed by stagnation or even resegregation in more recent years (Reardon & Owens, 2014). Reardon and Owens (2024) found White-Black school segregation increased by 37% from 1991 to 2021. Hispanic-White and Asian-White segregation also increased from the late 1960s through 2020 (Orfield & Lee, 2007; Reardon & Owens, 2024). Further, income-based segregation has been rising across schools and districts for decades. One study estimates that school segregation between students eligible for free or reduced-priced lunches and those ineligible has grown by 52% from 1991 to 2019 (Reardon & Owens, 2024). Since the Supreme Court's *Milliken v. Bradley* (1974) decision, which greatly limits policies to mandate school desegregation across school district lines, efforts have mainly focused on reducing school segregation within school districts. However, most segregation is interdistrict, meaning it occurs between school districts, rather than intradistrict, which refers to segregation within a single district (Reardon & Owens, 2024; Stroub & Richards, 2013).

Causes of school segregation are quite varied. Residential segregation is a primary driver of school segregation, as a strong correlation exists between school and neighborhood segregation (Whitehurst et al., 2017). However, trends in increased neighborhood integration have not led to increased school integration (Reardon & Owens, 2024). Legal and policy factors, such as those related to *Milliken v. Bradley* (1974) and the U.S. Supreme Court's 2007 ruling in *Parents Involved in Community Schools v. Seattle School District No. 1*, have limited race-conscious desegregation efforts. Given the lack of interdistrict integration efforts, "White flight" out of diverse school districts as well as increased private school enrollment have exacerbated racial school segregation (Reardon & Yun, 2003, p. 1585). Parental decisions can reinforce segregation. White parents, in particular, exhibit racialized preferences when selecting schools for their children, even after controlling for academic achievement factors (Billingham & Hunt, 2016).

Research has identified school segregation's real-world implications and impacts on short-term and long-term student outcomes. Segregated schools, especially if combined with high levels of student poverty, tend to have lower academic achievement growth, leading to achievement gaps for Black and Hispanic students (Billings et al., 2014; Reardon et al., 2019). Achievement disparities are generally larger and grow faster in more segregated school districts, as students of color are often concentrated in high-poverty districts (Reardon et al., 2022, 2024). Educational attainment is also affected, as Reber (2010) demonstrates how court-ordered desegregation policies have led to reductions in dropout rates. Ending such court-ordered desegregation policies has increased dropout rates among Black and Hispanic students (Johnson, 2011; Lutz, 2011). Schools with high concentrations of students of color and low-income students have less access to experienced teachers, fewer advanced course offerings, and often lower per-pupil funding given student needs (Reardon & Owens, 2014). Segregated schools often employ harsher disciplinary policies, which lead to increased suspensions and expulsions for students of color (Reardon et al., 2019). Prior research indicates White students are not harmed by desegregation efforts. While well-integrated schools have been found to benefit students of color, they do not have a significant negative impact on White students'

educational outcomes (Guryan, 2004; Johnson, 2011; Reber, 2010).

Benefits of integrated schools are not limited to academic outcomes. Students attending racially diverse schools are more likely to develop cross-cultural understanding, cross-racial friendships, and greater social trust (Reardon & Owens, 2014). Long-term benefits can arise from desegregation efforts. Black students exposed to integrated schools had higher lifetime earnings and were more likely to enter higher-paying professions (Ashenfelter et al., 2006; Johnson, 2011; Reber, 2010). Further, Weiner et al. (2009) found that Black students exposed to desegregation had lower rates of incarceration and criminal activity. Johnson (2012) suggests the impacts of desegregation efforts extend beyond the first generation, benefiting also children and grandchildren of those who attended integrated schools. Despite the benefits of integrated schools outlined here, legal, policy, and political factors have made it difficult to dismantle a system of racially segregated schools in the United States.

Private Schools, School Choice, and Segregation

A holistic analysis of Montessori education and school segregation requires attention to school sector. Racial segregation rates are higher in private schools than in public schools (Reardon & Yun, 2002). Private school enrollment rates are lower for Black and Hispanic families than for White and Asian families (Clotfelter, 2004; Murnane et al., 2018; Reardon & Yun, 2002). Historically, many private schools have contributed to school segregation, particularly in the southern United States, where some White parents have used them as a way to avoid sending their children to integrated public schools (Clotfelter, 2004). Bankston and Caldas (2000) found that White enrollment in private schools is associated with higher levels of student-of-color concentration in public schools, reinforcing racial imbalances. The distribution of middle- and low-income students in private schools has declined by half over time, while enrollment of high-income students has remained steady (Murnane & Reardon, 2018). This disproportionality in private school enrollment can be attributed to a variety of factors, including increases in tuition, closure of low-cost Catholic schools, and expansion of charter and magnet schools (Murnane & Reardon, 2018; Murnane et al, 2018). Due to longstanding racial wealth gaps, private schools have often been out of reach for many marginalized communities.

Charter schools have also played an increasingly significant role in school segregation. Research on the relationship between charter schools and school segregation demonstrates charter schools are often more racially isolated than traditional public schools, especially in urban areas (Frankenberg et al., 2011, 2025). Charter schools tend to have a bimodal racial composition, with some serving predominantly White students and others overwhelmingly students of color. Monarrez et al. (2022) found that charter schools increase racial and socioeconomic segregation within school districts. Charter schools exhibit higher levels of segregation, even though they enroll a higher percentage of Black students. More than 80% of Black and Latine charter school students attend segregated schools (Frankenberg et al., 2011). While the number of "diverse by design" charter schools is increasing, they only constitute 2% of all U.S. charter schools (Potter & Quick, 2018, p. 1). This transition of wealthy, often White, students from private to public sector has been linked to exacerbating White-Black and socioeconomic segregation in the public school system (Alcaino & Jennings, 2020; Ladd et al., 2016; Renzulli & Evans, 2005). School entry structures, such as random lotteries in oversubscribed schools, may decrease school segregation, but they do not guarantee integrated school environments. Despite efforts of those in the charter school community, many charter schools are associated with increased segregation.

Magnet schools, however, have been more successful than charter and private schools at maintaining racial diversity. Given that their origins are tied to desegregation policies, magnet schools were deliberately designed to create integrated learning environments. Policies such as weighted admission lotteries, free transportation, and targeted outreach have helped maintain racial balance (Siegel-Hawley & Frankenberg, 2012). Siegel-Hawley and Frankenberg (2012) conducted a survey that found two-thirds of magnet schools have deliberate diversity recruitment practices. However, some magnet schools have moved away from desegregation efforts, instead focusing more on academic outcomes and reducing racial achievement gaps (Pack, 2017).

The effectiveness of magnet schools in addressing segregation remains debated. Some studies suggest magnet schools have contributed to racial segregation in non-magnet schools because high-achieving students leave their zoned schools to attend them, which increases racial isolation in traditional public schools (Taylor Haynes et al., 2010). Meanwhile, Davis (2014) found racial composition of magnet schools does not

statistically differ from traditional public schools, but magnet schools tend to be more heterogeneous within classrooms and across different tracking levels. However, Latine students tend to be underrepresented in magnet schools, perhaps due to policymakers focusing primarily on Black-White segregation patterns (Taylor Haynes et al., 2010). Overall, magnet schools have been more successful in creating integrated learning environments as compared to private and charter schools.

The Montessori Model and School Segregation

There are several reasons Montessori education may promote school integration, not only in terms of racial balance but also by fostering culturally sensitive learning environments that reflect integration beyond desegregation. Rooted in an egalitarian philosophy, Montessori education emphasizes educational inclusion as a core principle. For decades, Montessori programs have been used in urban districts to promote racial and economic diversity (Debs, 2019). As such, the Montessori model appeals to a wide variety of parents across racial and economic backgrounds (Debs, 2016).

As an alternative pedagogical approach, Montessori education has attracted interest across diverse groups. The Montessori model aligns with culturally responsive pedagogy (CRP) and can be used to promote social justice education (Lillard, Taggart, et al., 2023). Additionally, Montessori can incorporate culturally sustaining teaching to enhance school experiences for students of color (D'Cruz, 2022). A fundamental feature of the Montessori model—the three-year cycle with the same teacher—allows for deeper student-teacher relationships, which can benefit diverse learners (Brown & Steele, 2015). Montessori teacher training focuses on individual child development and emphasizes self-determination, allowing students of all backgrounds to reach their full potential without being limited by teacher biases (Lillard, Tong, et al., 2023). Montessori education features multiage classrooms, promoting inclusivity and a culture in which older students set expectations for younger students at the start of the school year. This structure fosters consistent classroom norms and engagement across age groups (Lillard, 2016).

Historically, low-income families were often early adopters of Montessori due to its concrete, hands-on approach to learning, which mirrored teaching styles of many working-class parents (Orem, 1968). This pattern persists today, with many working-class Black and Latine parents expressing satisfaction with their Montessori experience (Debs, 2019).

There is also empirical support outlining the benefits of Montessori education for students of color. A study of preschool outcomes found Montessori education reduces racial and ethnic disparities in academic achievement and social cognition (Lillard, Tong, et al., 2023). Although Black, Hispanic, and multiracial students initially scored lower than White students in both Montessori and traditional schools, by the end of preschool, these differences were no longer significant in Montessori schools, unlike in traditional schools. A study of Montessori pre-K Latine children from low-income families found that students in Montessori programs demonstrate stronger pre-academic skills at the end of pre-K and perform better on standardized tests in third grade as compared to non-Montessori peers (Ansari & Winsler, 2022). Additionally, Black students in South Carolina's public Montessori programs outperformed peers in traditional public schools as measured by reading growth on standardized tests (Fleming & Culclasure, 2024).

Although Montessori education has the potential to promote school integration, several factors may also contribute to its association with heightened school segregation. Despite its origins in serving under-resourced children, Montessori education in the United States has become associated with wealthier, White families (Winter, 2022). Although public Montessori programs may begin as diverse schools bringing together children from different backgrounds, they often become less racially diverse over time (Debs, 2019).

Several policies, such as selective admission processes, lack of public funding, and limited outreach to families of color, limit the potential for integration in some Montessori programs (Debs, 2019). Private, charter, and magnet Montessori schools use admissions strategies that sometimes disadvantage students of color by favoring applicants with previous Montessori experience, strong family interest, or higher socioeconomic status (Debs, 2019; Debs & Brown, 2017). Additionally, subjective admissions criteria, such as interviews and family interest assessments, may disadvantage underrepresented families (Kahn, 1990). Many private Montessori preschools charge tuition, creating a financial barrier for families of color due to the intersection of race and socioeconomic status (Debs & Brown, 2017; Gillborn, 2015).

Montessori school leadership is often majority

White, including school founders, PTA boards, and teachers (Debs, 2019). This leadership dynamic may contribute to school policies that disproportionately exclude or fail to recruit students of color. Research has found that White families are more aware of Montessori education than Hispanic, Black, Asian, and Native American families, with awareness strongly linked to parental education levels (Murray, 2008).

Furthermore, location and design of Montessori schools significantly affect their composition. Fleming et al. (2024) found that public Montessori programs in South Carolina were more likely to be established in districts with a lower percentage of students in poverty. Placing Montessori schools in wealthier, predominantly White areas may unintentionally limit access for marginalized students (Debs, 2019). Conversely, although placing Montessori schools in low-income communities can increase accessibility, it may discourage affluent families from enrolling and thereby reduce economic diversity. Also, some Montessori charter and magnet schools lack state funding for key amenities such as public transportation, robust free lunch programs, and after-school care, all of which disproportionately impact low-income families (Debs, 2019; Murray & Peyton, 2008).

Despite the importance of the relationship between Montessori education and school segregation, few studies have analyzed the demographics of Montessori students, and most research has focused solely on public Montessori schools, even though most Montessori schools are private. In a study of 85 public Montessori programs, Murray and Peyton (2008) estimated about 60% of enrolled students were White, 24% were Black, and 10% Hispanic. A study of nearly 12,000 public Montessori students in South Carolina found the racial makeup of Montessori programs mirrored state averages, though intradistrict comparisons indicated students of color were underrepresented in Montessori programs relative to other schools in the same district (Fleming & Culclasure, 2024). Debs (2016) found public Montessori students were less likely than their traditional public school counterparts to attend racially homogenous schools. However, compared to other schools within the same district, 58% of public Montessori schools had significantly lower percentages of students of color than did the surrounding district. Similarly, Brown (2016) found White students were overrepresented in Montessori charters relative to the district's racial composition (Brown, 2016).

Overall, Montessori schools have potential to either increase or decrease school segregation, depending on recruitment strategies, location, and access policies. Although many Montessori programs have attracted diverse families, evidence still shows White students are overrepresented in Montessori programs. However, previous studies have been limited in scope and are unable to estimate differences across school sectors.

Methodology

Data

This analysis combines three different datasets. The first dataset comes from the Urban Institute's 2020 report on school segregation (Monarrez et al., 2019). The authors used data from the National Center for Education Statistics (NCES) regarding public and private schools for the 2017–2018 academic year. This dataset includes a measure of each school's contribution to racial segregation within the school district. We augmented the Urban Institute data with the full Private School Universe Survey (PSS). While the PSS is meant to be a census of all private schools in the United States, not all schools are included. The estimated response rate for the 2017–2018 PSS was approximately 80%. Further, when we merged the PSS with the Urban Institute dataset, we successfully matched 78% of private schools in the PSS. Of the private schools not in the Urban Institute data, almost 50% have total school enrollments of fewer than 50 students. While the majority of private schools are included in this study, it is important to note our dataset does not include all private schools. The final dataset merged in this analysis is from the Montessori Census. The Montessori Census is a resource produced by the National Center for Montessori in the Public Sector. Our combined dataset attempts to identify all public and private Montessori schools in the country but is limited to K–12 programs. Because many Montessori programs primarily serve early childhood education, they are excluded from this analysis, restricting the generalizability of the study.

Measures

Whether or not a school is a Montessori school was our main independent variable. We utilized multiple methods to identify Montessori schools. First, we used the list of Montessori schools provided by the Montessori Census. Using this method, we identified 404 Montessori schools in the Urban Institute data. Second, the Private School Universe Survey (PSS) includes a question

that asks if the school is a Montessori school and an additional question regarding whether or not the school is affiliated with any Montessori organization. We used both methods to identify schools in our data. Our last method of labeling Montessori schools was to note if the school included "Montessori" in the name of the school.[1] In total, we identified 1,465 Montessori schools in the data. It is important to note that we have no method of determining the authenticity of Montessori instruction in any of these schools.

Importantly, the Montessori Census dataset includes a variable to identify Montessori programs that are schools-within-a-school. These are Montessori programs housed inside traditional schools. The dataset identifies 51 such programs. Given that the student demographic data in this analysis is at the school level, we are unable to estimate student demographics for Montessori programs within traditional schools. Therefore, we eliminated those schools from our sample, leaving a sample of 1,414 Montessori programs.[2]

Our final analytical dataset includes almost 76,000 schools across four school types (district, private, charter, and magnet). The sample includes 1,414 Montessori schools: 1,021 private schools, 184 charter schools, 124 district schools, and 85 magnet schools. These schools collectively enroll an estimated 214,446 Montessori students. Among the non-Montessori schools in the dataset are 51,208 district schools, 14,240 private schools, 6,128 charter schools, and 2,873 magnet schools. This analysis is particularly unique in Montessori education research because it includes both public and private schools.

There is no agreed-upon way to measure school segregation, and differences in conceptualizing and measuring segregation have led to conflicting evidence regarding recent levels of resegregation (Reardon & Owens, 2014). To examine this topic, we used a measure of segregation called the Segregation Contribution Index (SCI) developed by Monarrez et al. (2019). The index is a relative measure that quantifies how much an individual school contributes to system-level segregation, adjusting for demographics of the broader student population. This allows for more meaningful comparisons across geographic contexts and school sectors. In contrast, absolute measures, such as the isolation index or benchmarks like "90% minority" thresholds, can be misleading in areas where schools may reflect local populations rather than systemic imbalance (Monarrez et al., 2019, p. 3).

The formal calculation of the SCI is available in Monarrez et al. (2019).[3] The authors begin by calculating each school district's dissimilarity index as follows:

$$Seg = \sum_{i=1}^{N} \frac{p_i |m_i - M|}{2PM(1 - M)}$$

In the above equation, $i = 1, \ldots, N$ indexes schools; p_i is the number of students who are enrolled in school i; m_i is the share of school i's students who are Black or Hispanic; M is the share of Black or Hispanic students in the school district as a whole; and P is the total enrollment in the school district. Using the dissimilarity measure, segregation is equal to the proportion of Black or Hispanic students who would need to change schools to create a perfectly integrated school district, in comparison to the share who would have to move to achieve a perfectly integrated school district but starting from a perfectly segregated school district (Monarrez et al., 2019, p. 25).

If we assume the proportion of Black or Hispanic students at school i is equal to $m_i^O \neq m_i$, segregation will equal the following:

$$Seg_i^O = \sum_{-i} \frac{p_{-i}|m_{-i} - M|}{2PM(1 - M)} + \frac{p_i|m_i^O - M|}{2PM(1 - M)}$$

The first term in the above equation is equal to the segregation caused by every school in the district except school i. The second term is school i's component of the amount of segregation in the school district. If the proportion of Black or Hispanic students in school i is equal to the proportion of Black or Hispanic students in the school district, the term will equal 0 ($m_i^O = M$). To calculate the SCI, we focus on the percentage change in segregation that would occur if we were to change the racial composition of school i to be equal to the proportion of Black or Hispanic students in the district, equal to the following:

$$\varphi_i = \frac{Seg - Seg_i^O}{Seg} = \frac{p_i(|m_i - M| - |m_i^O - M|)}{\Sigma_i p_i |m_i - M|}$$

The φ symbol is the SCI, or the proportional contribution of school i to the segregation in the school district.

As demonstrated above, a school's SCI depends on three factors. The first factor is the difference in the percentage of Black or Hispanic students in the school and the percentage of Black or Hispanic students across the district in which the school is located. Given that

previous research has found Black and Hispanic students score lower on student standardized achievement exams than do White and Asian students (Musu-Gillette et al., 2017), the Urban Institute (2020, p. 2) measured school segregation as the separation of Black and Hispanic students from Whites, Asians, and students from other racial groups. As noted, because the Urban Institute data report Black and Hispanic students together, we are unable to examine these groups independently. Second, the size of the school is important. The larger the school, the more significant its impact on contributing to segregation in the school district. Lastly, the size of the school district in terms of student enrollment is significant. All else being equal, schools in smaller school districts have larger impacts in terms of contribution to segregation than do schools in districts with high enrollment. In short, the SCI contrasts each school's racial makeup to the demographics of the school district in which it is located. The index compares how the segregation of a school district would change if a given school were to have the demographics of the school district overall versus the school's actual demographics. "The SCI is therefore defined as the percentage decrease in segregation that would take place if the school reflected the [school district's] composition perfectly" (Monarrez et al., 2019, p. 10). The SCI serves as the dependent variable for our multivariate linear regression analyses.

Our analysis includes additional covariates. We examine school type (traditional public district schools, charter schools, magnet schools, and private schools), as previous research indicates racial segregation differs by school sector. We also control for the school's location by comparing rural and suburban districts with urban school districts. School enrollment is the next covariate. This is a key factor, as the size of a school plays an important role in calculating its SCI. Controlling for student enrollment accounts for the fact that high-enrollment schools have a more significant impact on SCI in smaller districts than in larger districts.

Our final covariate is a measure of racial demographics of the neighborhood in which each school is located. For each school in the data, a 1-mile radius was drawn to identify all schools serving the same grade level as the school in question (Monarrez et al., 2019). Then, the proportion of Black or Hispanic students, including those attending the school of interest, was determined within this radius. This estimate is our school neighborhood composition variable. If Monarrez et al. (2019) were unable to identify additional schools

offering the same grade level as the school in question, the algorithm increases the radius by 1 mile until a neighboring school is identified or a maximum of 15 miles is reached (p. 5). The school neighborhood composition is an important variable, as the racial makeup of neighborhoods can be quite different from the demographics of school districts as a whole.

Data Analysis Procedures

This analysis uses several approaches to examine the relationship between Montessori education and school diversity. First, we provide descriptive information regarding the average size of Montessori schools and the proportion of Black and Hispanic students who attend them. We also examine this issue by school sector (private, charter, magnet, and district). Second, we provide comparisons between Montessori schools and the enrollment-weighted percentage of Black or Hispanic students in the school district and neighboring schools.

Our next set of analyses shifts from sector-wide averages to examining individual Montessori schools in relation to their district and neighboring school demographics. We present scatterplots that demonstrate how the percentage of Black and Hispanic enrollment for each Montessori school relates to the corresponding percentage of the school's respective school district and neighborhood. We then estimate Pearson correlation coefficients (PCC), both overall and by school sector, to assess the extent to which Montessori schools reflect the racial demographics of their school districts and nearby schools. The PCC quantifies the strength and direction of a linear relationship between two variables, with values ranging from -1 to 1.

One limitation of the raw comparisons between percentages of Black and Hispanic students in each Montessori school and their districts or neighboring schools is the vast differences in school size. In low-enrollment schools, racial identity of a small number of students can substantially impact the proportion of students of color in the school. As we show, Montessori schools, especially private ones, are generally smaller in terms of student enrollment than are non-Montessori schools. To account for this, and following Debs (2016), we performed a series of chi-squared tests to examine if there is a statistically significant difference between a school's percentage of Black or Hispanic students and its school district. For each Montessori school, we calculate the expected number of Black and Hispanic students the school would have if it were to reflect the demographics

Figure 1

$$\varphi_{ij} = \alpha_j + \beta_1 Mont_{ij} + \beta_2 Suburb_{ij} + \beta_3 Rural_{ij} + \beta_4 Private_{ij} + \beta_5 Charter_{ij}$$
$$+ \beta_6 Magnet_{ij} + \beta_7 \ln(Enrollment_{ij}) + \beta_8(\% \ Black/Hispanic \ Neigh.)_{ij}$$
$$+ \alpha_j + \epsilon_{ij}$$

of its district. These estimates are then compared with the actual student composition of the Montessori school. Using these numbers, we calculate a chi-squared value for each school. Given that the critical value for a chi-squared test with one degree of freedom and a significance level of 0.05 is 3.841, we label each school with a chi-square value of less than 3.841 as not significantly different from the district's demographics.[4] We then perform the same set of analyses comparing the diversity of Montessori schools to their neighboring schools.

Our final set of analyses pertains to our third research question: How is the presence of Montessori programs in schools related to the level of racial segregation within school districts, and how does this differ by school type? To answer this question, we estimate a set of linear regressions predicting a school's Segregation Contribution Index (SCI).

Following Monarrez et al. (2019), we estimate multiple linear regressions. Our main model for this analysis is listed in Figure 1.

The φ_{ij} notation represents the SCI for school i in school district j.[5] Our main independent variable is a Montessori indicator variable. The other regression coefficients capture the relationship between the control variables and SCI. β_7 reflects the correlation for the natural log of school enrollment. The α_j is a school district-by-grade level fixed effect, and ϵ_{ij} is the school-level error term. Standard errors are clustered at the school district level, and the observations are weighted by enrollment. To examine differences between Montessori and non-Montessori schools by sector, we estimate an additional regression with an interaction between the Montessori variable and the sector variables. The modeling strategy is quite powerful, as it creates comparisons between Montessori schools and non-Montessori schools located in the same school district, serving the same grade level, with similar school enrollments, of the same school type, and in neighborhoods that have a similar percentage of Black or Hispanic students. Multiple models are estimated to examine how the Montessori coefficient changes with additional covariates.

Results

Characteristics of Montessori Schools and Students

Our first analysis examines the characteristics of Montessori programs. The results are presented in Table 1. The mean student enrollment for Montessori schools is 152 students, while the median school size is 72. One can see substantial variation in mean school size by sector. While district and magnet Montessori schools average more than 400 students per school, the mean enrollment for Montessori charter programs is 267, and only 73 students for private Montessori schools in the sample. As is examined more fully below, the relatively small enrollments of Montessori programs lowers the impact these programs have on within-school district segregation, holding other factors constant.

The data allow us to examine our first research question: What is the proportion of Black or Hispanic students in Montessori schools, both overall and by school type? Approximately 37% of Montessori students in our sample are Black or Hispanic, lower than the 46% Debs (2016) reported in a study of 300 whole-school Montessori programs. A study of 44 public Montessori programs in South Carolina programs estimates 41% of Montessori students are Hispanic or Black (Fleming & Culclasure, 2024). Student racial demographics significantly vary by Montessori school sector. We estimate 60% of magnet Montessori students, 50% of district Montessori students, and 34% of charter Montessori students are Black or Hispanic. Our estimates show Black or Hispanic students make up only 17% of enrollment in private Montessori schools.

How Montessori Schools Compare to Non-Montessori Schools

Table 1 also allows for comparisons between Montessori and non-Montessori schools across school types. As for school size, non-Montessori schools are consistently larger than Montessori programs. One reason for this could be that many Montessori schools target younger students, whereas high schools have larger enrollments on average. Similar trends are evident across

Table 1
Comparisons between Montessori and Non-Montessori Schools by School Type

	Total		District		Magnet		Charter		Private	
	Mont.	Non-Mont.	Mont.	Non-Mont.	Mont.	Non-Mont.	Mont.	Non-Mont.	Mont.	Non-Mont.
Enrollment	152	532	424	616	450	834	267	468	73	197
	72	*445*	*405*	*513*	*366*	*613*	*218*	*365*	*47*	*122*
	(195)	(466)	(203)	(444)	(287)	(631)	(220)	(533)	(84)	(254)
% Black/ Hispanic	37%	47%	50%	46%	60%	63%	34%	60%	17%	23%
	(30)	(32)	(28)	(31)	(25)	(27)	(27)	(33)	(20)	(27)
% Black/ Hispanic District	49%	47%	51%	45%	62%	58%	43%	58%	44%	48%
	(24)	(26)	(24)	(26)	(18)	(21)	(24)	(24)	(24)	(24)
% Black/ Hispanic Neigh.	46%	47%	50%	45%	62%	62%	42%	60%	36%	38%
	(27)	(29)	(27)	(29)	(23)	(25)	(29)	(29)	(24)	(26)
# of Schools	1,414	74,449	124	51,208	85	2,873	184	6,128	1,021	14,240

Note: Means are listed first, medians are in italics, and standard deviations are in parentheses. Schools-within-schools are excluded. The % Black/ Hispanic, % Black/Hispanic in the district, and % Black/Hispanic in neighborhood schools are weighted by enrollment. "Mont." refers to Montessori, "Dist." refers to the surrounding school district, "Neigh." refers to neighborhood schools in close geographic proximity.

school sectors, as average enrollment in district and magnet schools is larger than enrollment in charter and especially private schools.

Racial makeup of Montessori students to non-Montessori students is also compared in Table 1. The overall proportion of Black and Hispanic students in the non-Montessori student population is 10 percentage points higher than in Montessori schools. The differences by Montessori status are relatively small for district and magnet schools. However, Black or Hispanic students are underrepresented in Montessori programs by six percentage points for private schools and 26 percentage points for charter schools. While these findings are suggestive, they are limited by the fact that schools are not randomly distributed across the country, and this is particularly true of Montessori programs. These raw comparisons do not account for local contexts.

To provide more meaningful comparisons and examine our second research question, we used data from the Urban Institute to compare Montessori programs and demographics of school districts in which they are located. As seen in Table 1, district and magnet Montessori schools closely mirror the percentage of Black and Hispanic students in their school districts overall. While non-Montessori charter schools are quite similar to their districts, Black or Hispanic students are underrepresented in Montessori charter schools by nine percentage points as compared with school district averages. Black or Hispanic students are significantly underrepresented in both Montessori and non-Montessori private schools as compared with the overall district demographics in which those schools are located.

In light of racial residential segregation that can occur within school districts, a more thorough investigation into how school demographics contrast with those of neighboring schools is necessary. Table 1 presents the mean and standard deviations for the percentage of Black or Hispanic students in neighboring schools for each Montessori and non-Montessori school sector. As for district schools, the percentage of Black or Hispanic students in Montessori schools is very similar to the percentage of Black or Hispanic students in neighboring schools. The percentages are also quite similar for magnet Montessori schools. Black or Hispanic students are underrepresented in Montessori charter schools as compared with neighboring schools. Finally, approximately 17% of students enrolled in private Montessori schools are Black or Hispanic, whereas Black or Hispanic students make up almost 36% of student enrollment in neighboring schools. Non-Montessori school demographics are generally quite similar to the school neighborhood composition, except in private schools, in which 23% of non-Montessori students are Black or Hispanic versus a school neighborhood composition of 38% Black or Hispanic enrollment.

These contrasts provide better comparisons of student enrollment in Montessori versus non-Montessori schools than the raw differences between the percentage
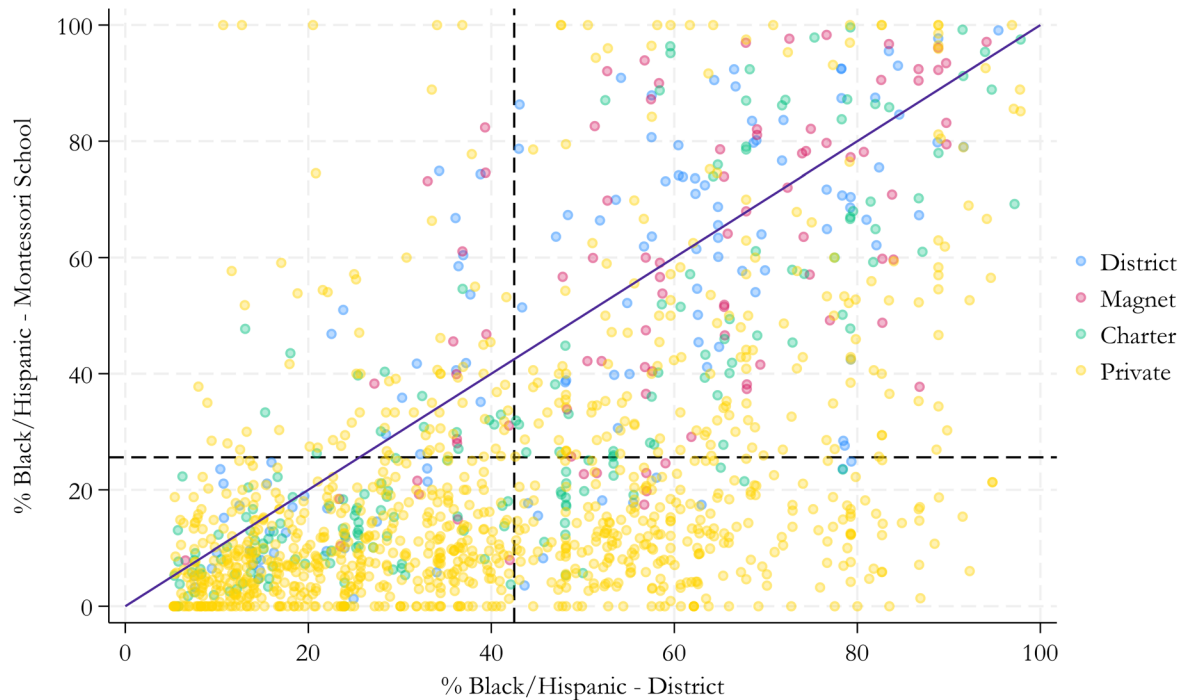
of Black or Hispanic students in Montessori schools versus non-Montessori schools across the country. Within-district and neighborhood contrasts provide a more representative picture of the differences between these two types of schools. However, by averaging across these variables, it is not possible to examine how each school differs from its respective district and neighborhood demographics. We account for this challenge in the analyses below.

We provide school-level comparisons in Figure 2. It is a scatterplot of each Montessori school's percentage of Hispanic or Black enrollment versus the percentage of Hispanic or Black students attending schools in the same school district. Each dot on the figure is a Montessori school, and the color of the dot reflects the type of Montessori school. The unweighted mean number of Black or Hispanic students who attend Montessori schools and other schools in the district are denoted with dashed lines from the y-axis and x-axis, respectively. Schools located on the 45-degree line have racial demographics identical to their school district.

Overall, the correlation between these two variables is 0.56 (p-value < 0.001), which is evidence that Montessori schools with higher proportions of Black or Hispanic enrollments are located in school districts with higher proportions of Black or Hispanic students. When

examined by school type, we find the correlation between the racial demographics of Montessori schools and their school neighborhood composition is stronger for charter Montessori schools (Pearson's r = 0.81, p-value < 0.001), district Montessori schools (Pearson's r=0.73, p-value < 0.001), and magnet Montessori schools (Pearson's r = 0.63, p-value < 0.001) than for private Montessori schools (Pearson's r = 0.43, p-value < 0.001). We estimate 81% of Montessori schools in the dataset have a lower percentage of Black or Hispanic students than school district averages. This is evident in Figure 2, as most observations are below the 45-degree line. While approximately 45% of both district and magnet Montessori schools enroll a higher proportion of Black or Hispanic students as compared with school district averages, only 22% of charter Montessori schools and 13% of private Montessori schools do likewise.

Figure 3 presents a similar comparison of Montessori schools and schools that share the same neighborhood. The correlations between demographics of Montessori schools and their neighboring schools are higher than those between Montessori programs and their school districts. Overall, the correlation in Figure 3 is estimated to be 0.68 (p-value < 0.001). For district, magnet, and charter Montessori schools, the correlations with their neighboring schools are all above 0.80 (p-value < 0.001), whereas it is 0.53 for private Montessori schools.

Figure 3
Black or Hispanic Enrollment in Montessori Schools versus Neighborhood Schools
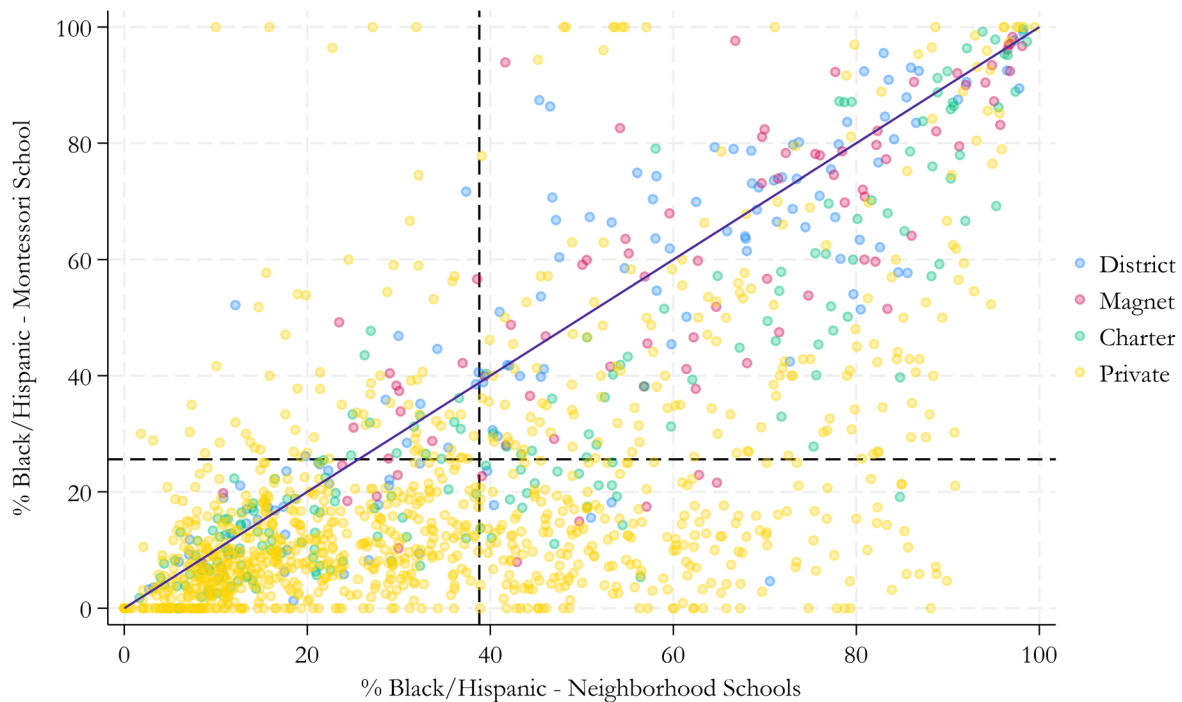
These comparisons do not account for the fact that small changes in student demographics can largely impact low-enrollment schools. Chi-squared tests adjust for school size and identify which schools have statistically significantly different percentages of Black or Hispanic students as compared with their district or neighboring schools (see Table 2). We estimate 407 (29%) of Montessori schools have proportions of Black or Hispanic students that statistically are not significantly different than the proportion of Black or Hispanic students in the district. Fifty-nine percent of Montessori schools have a lower proportion of Black or Hispanic students as compared with their school districts, whereas 12% of Montessori schools have a higher percentage. Across school type, district Montessori schools are about as likely to have Black or Hispanic students underrepresented (43%) as overrepresented (42%). Magnet, charter, and private Montessori schools are more likely to have enrollments in which Black or Hispanic students statistically are significantly underrepresented than overrepresented. Note that private schools are the sector in which the highest percentage of Montessori schools (32%) are not significantly different from the district. This is partially explained by smaller school sizes

among Montessori private schools, so finding statistically significant differences is less likely.

In comparisons between demographics of Montessori programs and neighboring schools, Montessori schools are more similar to their neighboring schools than to the district as a whole. Overall, 547 (39%) of Montessori schools have a percentage of Black or Hispanic students statistically not significantly different than the demographics of neighboring schools. The value ranges from 29% for Montessori magnet schools to 42% for private Montessori schools. The between-sector trends are essentially the same when comparisons are made with neighboring schools. District Montessori schools are about equally likely to have Black or Hispanic students underrepresented or overrepresented, and magnet, charter, and private Montessori schools are more likely to significantly under-enroll Black or Hispanic students.

Our regression results, based on ordinary least squares (OLS), are presented in Table 3. Our models follow the approach used by Monarrez et al. (2019) in a study of schools' Segregation Contribution Index (SCI). All of our regressions include school district by grade level fixed effects. This means the relationships identified

Table 2
Chi-Square Analysis of Black/Hispanic Enrollment in Montessori Schools versus District and Neighborhood Schools

	Total		District		Magnet		Charter		Private	
	vs. Dist.	vs. Neigh.	vs. Dist.	vs. Neigh.	Vs. Dist.	vs. Neigh.	vs. Dist.	vs. Neigh.	vs. Dist.	vs. Neigh.
Black/Hispanic Underrepresented in Mont. Schools	839 (59.3)	702 (50.5)	53 (42.7)	43 (34.7)	41 (48.2)	38 (44.7)	113 (61.4)	105 (57.1)	632 (61.9)	516 (51.8)
Not Significantly Different	407 (28.8)	547 (39.4)	19 (15.3)	44 (35.5)	14 (16.5)	25 (29.4)	46 (25.0)	63 (34.2)	328 (32.1)	415 (41.6)
Black/Hispanic Over-represented in Mont. Schools	168 (11.9)	141 (10.1)	52 (41.9)	37 (29.8)	30 (35.3)	22 (25.9)	25 (13.6)	16 (8.7)	61 (6.0)	66 (6.6)
Total	1,414 (100.0)	1,390 (100.0)	124 (100.0)	124 (100.0)	85 (100.0)	85 (100.0)	184 (100.0)	184 (100.0)	1,021 (100.0)	997 (100.0)

Note: Frequencies are displayed with column percentages in parentheses. Chi-square tests with p<0.05 are used to determine statistically significant differences. "Mont." refers to Montessori, "Dist." refers to the surrounding school district, "Neigh." refers to neighborhood schools in close geographic proximity.

in our regressions reflect comparisons between schools within school districts serving the same grade levels (elementary, middle, or high school). Our first model examines the relationship between our Montessori school indicator variable and the SCI, controlling for school type and location (suburban and rural versus urban). The results indicate Montessori schools have an SCI that is 1.3 percentage points lower than non-Montessori schools, meaning Montessori schools have a smaller contribution to a district's racial segregation than do non-Montessori schools.

Our second regression includes student enrollment as a covariate. The Montessori coefficient changes signs to 0.006, and it is statistically significant.[6] Given that Montessori schools tend to have lower enrollments than non-Montessori schools, once this factor is controlled for, the correlation between the Montessori variable and SCI shifts.

Our final model in Table 3 includes the percentage of Black or Hispanic students who attend schools in the same neighborhood as the observed schools. This regression creates comparisons between schools in the same district, that serve the same grade level, with similar enrollments, and located in racially similar neighborhoods (Monarrez et al., 2019, p. 13). We find Montessori schools have a 0.8 percentage point higher SCI than non-Montessori schools. Montessori schools contribute more to within-district school segregation than non-Montessori schools do. While this difference is not substantively large, it is statistically significant.

To understand the magnitude of this difference, we estimate the same model with imputed mean values for all the variables. The expected SCI for a Montessori school is 12.7%, so the school accounts for almost 13% of segregation in the district after adjusting for variables such as school size. The expected SCI for a similar non-Montessori school is 12.0%. Given that the Montessori coefficient is 0.008, we estimate 6.3% (0.008/0.127) of that school's SCI is due to its Montessori status.

Further, we find that private schools have an SCI four percentage points higher than that of traditional district public schools. Charter schools have an SCI 1.8 percentage points higher than that of traditional district public schools, holding the other factors constant. These results are similar to an earlier evaluation of SCI (Monarrez et al., 2019) and are consistent with previous research findings that private and charter schools may exacerbate school segregation (e.g., Alcaino & Jennings, 2020; Betts & Fairlie, 2001; Frankenberg et al., 2025). We also find suburban and rural schools have lower SCIs than do urban schools after controlling for school size and school neighborhood composition.

We estimate an additional regression based on our preferred model (Model 3) that included an interaction between the Montessori variable and school type to identify which Montessori schools may be contributing more to intradistrict school segregation.[7] An average marginal effects plot is presented in Figure 4.

Comparisons are made within school sector, so the figure presents the difference in average SCI between

Table 3
Regressions Predicting a School's Segregation Contribution Index

VARIABLES	(1)	(2)	(3)
Montessori School	-0.013***	0.006**	0.008***
	(0.003)	(0.003)	(0.003)
Private	-0.022***	0.034***	0.040***
	(0.002)	(0.005)	(0.004)
Magnet	-0.001	-0.002	-0.003
	(0.002)	(0.002)	(0.002)
Charter	-0.004	0.018***	0.018***
	(0.003)	(0.003)	(0.004)
Suburban	-0.005**	-0.006***	-0.006***
	(0.002)	(0.002)	(0.002)
Rural	-0.012***	-0.010***	-0.007***
	(0.003)	(0.003)	(0.003)
Student Enrollment		0.041***	0.043***
		(0.003)	(0.003)
% Black/Hispanic Neigh.			0.035***
			(0.004)
Constant	0.127***	-0.142***	-0.170***
	(0.001)	(0.022)	(0.022)
Observations	106,730	106,730	106,273
R-squared	0.716	0.737	0.737
Grade Level by School District Fixed Effects	Yes	Yes	Yes

*** p<0.01, ** p<0.05, * p<0.1   Standard errors are clustered by school district. Observations weighted by enrollment.
"Neigh." refers to neighborhood schools in close geographic proximity.

Figure 4
Difference in Segregation Contribution Index between Montessori and Non-Montessori Schools by Sector

95% confidence intervals
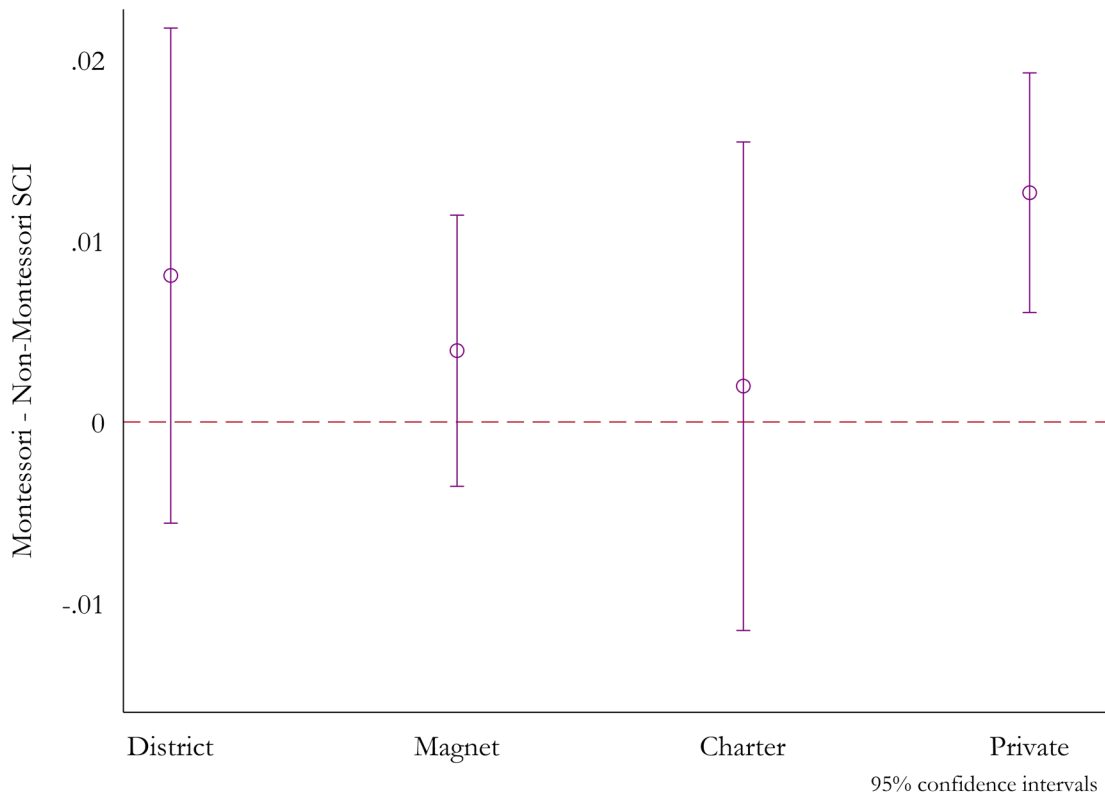
Montessori schools and non-Montessori schools for each school type. The coefficients are positive for each, so Montessori schools have higher SCIs than do non-Montessori schools regardless of sector. However, this difference is only statistically significant at the 0.05 level for private schools. Montessori private schools have an SCI 1.3 percentage points higher than that of non-Montessori private schools. To get a sense of the magnitude of this difference, we imputed the mean values for all the variables. Adjusting for school size and other covariates, the expected SCI for a private Montessori school is 16.8%, whereas it is 15.5% for a non-Montessori private school. The Montessori status of the private school accounts for 7.5% (0.0126/0.168) of that school's SCI, on average.

Discussion

This study offers new insight into the relationship between Montessori education and school segregation. By examining traditional public, charter, magnet, and private Montessori schools, our analysis provides a broader and more comprehensive perspective than that of previous research. Furthermore, our study provides apples-to-apples comparisons by comparing within school districts and controlling for the racial makeup of neighborhoods.

Our analysis of more than 1,400 Montessori schools estimates Black or Hispanic students comprise about 37% of Montessori student enrollment in the United States. While racial demographics of district and magnet Montessori schools generally mirror demographics of district and neighboring schools, Black or Hispanic enrollment in charter and private Montessori schools is lower than that of district and neighborhood averages and lower than that of non-Montessori charter and private schools. These results are broadly consistent with previous work that finds while many Montessori programs are quite diverse, they often have higher proportions of White students than do other schools in the district (Brown, 2016; Debs, 2016; Fleming & Culclasure, 2024). We estimate Black or Hispanic students are underrepresented in 59% of Montessori schools as compared to district averages, and in 51%

of Montessori schools as compared to nearby schools. These estimates are remarkably similar to those of Debs (2016), who found 58% of public Montessori programs have a statistically significant lower enrollment of students of color than that of school district averages. We estimate multiple regressions predicting each school's Segregation Contribution Index (SCI) to examine the relationship between Montessori education and within-district school segregation. We find Montessori schools, on average, contribute more to within-school district racial segregation than non-Montessori schools do. This relationship varies by school type, with private Montessori schools showing the highest levels of racial imbalance with fewer Black or Hispanic students enrolled than in non-Montessori private schools. Public Montessori schools, particularly magnet and district programs, tend to be more reflective of district demographics.

Despite Montessori's philosophical emphasis on inclusivity, structural barriers—such as private school tuition, admissions processes, and geographic location—seem to limit access for students of color. The racial differences by school sector likely stem from differences in access, recruitment, and geography. District and magnet Montessori schools may reflect district demographics more closely because they are typically part of broader public enrollment systems and, in the case of magnet schools, were often explicitly created because of segregation concerns. By contrast, private Montessori schools tend to serve smaller, more affluent populations and often charge tuition, which limits access, particularly given persistent racial wealth gaps. Charter Montessori schools, while technically open to all, may be less accessible due to limited transportation options, burdensome application processes, or a lack of targeted outreach, which are some of the factors Debs (2019) identifies in a study of public Montessori programs that may inhibit integration efforts.

This study has several limitations. First, we have incomplete private school data. These data availability issues limit overall generalizability of our study. Second, this study does not measure adherence to the Montessori model. There is no guarantee the schools labeled Montessori in the study actually implement the Montessori model with fidelity. Third, our analysis examines only intradistrict racial segregation. While intradistrict segregation is often the focus of these types of analysis because of the legal and political challenges of interdistrict integration efforts, most racial segregation occurs between—rather than within—school districts

(Reardon & Owens, 2024; Stroub & Richards, 2013). Fourth, we are unable to examine racial integration at the class or peer group level. Even within a racially diverse school, students may still be racially segregated due to tracking or other policies. Fifth, our analysis is limited to Black or Hispanic segregation only. Not only are we unable to examine segregation between other racial groups, but our data also do not allow us to examine Black and Hispanic students separately. Lastly, our study does not include school-within-school Montessori programs. Given that we could not determine the demographics of students in these programs, they are excluded from the analysis.

These findings underscore the need for strategies that more intentionally align Montessori practice with its philosophical commitments to equity and inclusion. Today, many ongoing efforts are underway to further integrate Montessori schools. For example, there has been a push to make often expensive Montessori learning materials more accessible to the broader Montessori community. The Montessori Bibliography Online (MBO) includes references to more than 37,000 unique materials, including books, reports, and journals, for Montessori educators to use (Parham, 2022). Montessori teaching training programs also have increased availability across the nation, making it easier for diverse groups of teachers to become certified (Murray & Peyton, 2008). Though this study is unable to identify strategies to create more racially integrated Montessori schools, previous scholars have identified how schools can provide culturally responsive education in Montessori settings (D'Cruz, 2022; Lillard, Taggart, et al., 2023). Further, Debs (2019) provides a variety of best practices for policymakers, school leaders, teachers, and families to promote more inclusive Montessori education. Hopefully, future analyses like what we present here will be able to document impacts of these efforts.

We conclude this analysis by emphasizing that no single study can capture all the complexities of school segregation. While application of the SCI offers valuable insights into school segregation, it remains an imperfect measure. Further, while we included more than 1,400 Montessori schools in our analysis, we could not include all Montessori programs, especially private Montessori schools. We also emphasize that this analysis is not a causal estimate of Montessori education on school segregation. As Monarrez et al. (2019) highlight, an analysis of this type does not prove that closing any particular school or type of school would lead to students being dispersed in a way that would increase integration

in the school district (p. 24). Our findings should be understood as reflecting the structural and geographic context in which Montessori schools operate rather than as evaluations of sectors or individual schools. Our results should be used to inform school officials and the Montessori community about the relationship between Montessori education and school segregation. They could also be used to focus efforts on increasing racial integration in schools throughout the country. Research on the benefits of Montessori education for students of color, combined with its inclusive philosophy, suggests the Montessori model could play a meaningful role in promoting equity and integration. Realizing that potential, however, requires expanding access to Montessori programs, particularly for historically underserved communities.

Acknowledgments

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Notes

[1] Additional analysis determined some school names were misspelled in the data. Therefore, different derivations of "Montessori" were used to search for and identify Montessori schools by school name in the private school dataset.

[2] When the 51 school-within-a-school Montessori programs are included in the analysis, our results are nearly identical to what we present here.

[3] The Urban Institute (2020) used a geographic information system procedure to determine in which district private and charter schools are located. This is critical, as this location information is not directly available in data from the National Center for Education Statistics, and it allows for comparisons between private/charter schools and the other schools in the same school district.

[4] Since chi-squared tests are sensitive to sample sizes, a school's difference between its actual and expected demographics depends on its student enrollment. For example, assume School A has an enrollment of 1,000 students and is in a district that is 75% Black/Hispanic. School A's percentage of Black/Hispanic students must be between 72% and 78% to not be significantly different from the district average. School B, located in the same district, has an enrollment of 100 students. Its student body must have between 67% to 83% Black/Hispanic students to not be statistically significantly different than its district.

[5] To make more credible comparisons between similar schools, our units of analysis for the regression analyses are determined at the school-by-grade level. This means if a school offers elementary, middle, and high school, the school has three observations in the data, one for each level. Crucially, all variables, including the SCI, are computed within grade level for each school, meaning a school with all three levels could have three different SCIs, proportion of Black and Hispanic students, enrollment, and so forth. While there are 75,863 unique schools in our analysis, there are 106,341 observations for the regression analyses. We refer to these "school-by-grade level observations" as "schools" for ease of interpretation.

[6] Our results are sensitive to how school enrollment is treated in the regression. Given the positive skew of the variable, we used the natural log of school enrollment, following Monarrez et al. (2019). However, when school enrollment is linearly included in the regression, the Montessori indicator variable is negative and statistically significant for both Models 2 and 3. A plot of the residuals and the fitted values shows evidence of nonlinearity, which supports the use of logged enrollment rather than enrollment. When the enrollment variable is converted into quintiles and included in the regression, the results are similar to what is presented in Table 3.

[7] For full regression results, see Table A.1 in the Appendix.

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Appendix

Table A.1
Interaction Model Predicting a School's Segregation Contribution Index (SCI)

VARIABLES	
Montessori School	0.008
	(0.007)
Magnet	-0.003
	(0.002)
Charter	0.018***
	(0.004)
Private	0.040***
	(0.004)
Montessori X Magnet	-0.004
	(0.008)
Montessori X Charter	-0.006
	(0.010)
Montessori X Private	0.005
	(0.008)
Suburban	-0.006***
	(0.002)
Rural	-0.007***
	(0.003)
Student Enrollment	0.043***
	(0.003)
% Black/Hispanic Neigh.	0.000***
	(0.000)
Constant	-0.170***
	(0.022)
Observations	106,273
R-squared	0.737
Grade Level by School District Fixed Effects	Yes

Robust standard errors are in parentheses; observations weighted by enrollment.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$."Neigh." refers to neighborhood schools in close geographic proximity.