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Does Magnet Choice Improve Student Achievement?

Begun in the wake of the assassination of Dr. Martin Luther King Jr. and the tumultuous riots it spawned, the initial mission of magnet schools was to reduce the racial isolation and loss of capital to urban districts caused by white and middle class flight to the suburbs. Today, in addition to their continuing mission of achieving greater racial balance, magnet schools are also the locus for the fight to close the racial achievement gap, a perennial concern of both policymakers and social scientists.

Despite their relatively long history, magnet schools, particularly as a choice option, have received very little focus in the empirical literature with respect to their efficacy at improving student achievement. Of the studies that have been published, there does not appear to be a clear answer regarding magnet choice impact, and previous work has been restricted to focusing on a single year of analysis, leaving the impact of out-of-zone magnet attendance on student achievement in a developmental context unknown. Finally, no previous study exists that has specifically compared the academic trajectories of black and Hispanic out-of-zone magnet students to their white peers in regular public schools. This study addresses these issues.

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Research Questions

1. What is the impact of magnet choice on students' reading and mathematics achievement?

2. If positive, is the impact of magnet choice sustained across the early grades, from kindergarten through fourth grade?

3. How do the reading and mathematics score trajectories of blacks and Hispanics who choose magnet schools compare to the trajectories of non-choosing whites?

While previous cross-sectional change studies suggest that there is a positive impact of magnet choice on student achievement in several subjects, subsequent surveys often show this impact to fade or disappear altogether. What is unclear is whether an examination of magnet choice's effect in a developmental context evinces a similar decline or drop-off in gains. In other words, the aim is to determine whether and how the score trajectories of out-of-zone magnet and within-zone regular public school students converge.

Furthermore, it is typical to assume that a treatment has the ability to close the achievement gap if there are statistically significant differences between those receiving the treatment and those not receiving the treatment. For example, if it is found that blacks or Hispanics who attended a magnet school outside their mandatory attendance zone outperformed their same-race peers who attended their zoned school but who desired to attend a magnet school, magnet schools can close the racial achievement gap. The aim is to highlight how the academic trajectories of blacks and Hispanics who choose magnet schools compare to the trajectories of non-choosing white students in regular public schools.

This study used Houston Education Research Consortium (HERC) longitudinal student-level data from the Houston Independent School District (HISD). Focusing on the cohort entering kindergarten in the 2007-08 academic year and following them each year through the end of fourth grade, or the 2011-12 academic year, the sample consisted of a total of 5,880 unique students across 184 elementary school campuses. The primary predictor was attendance at an out-of-zone magnet school. The primary outcomes were vertically scaled scores on the reading and mathematics portions of the Stanford Achievement Test, Tenth Edition. Student-level controls were included for sex, race, at-risk status, poverty status, and language spoken in the home. Neighborhood-level controls were included for median rent, median vehicles per household, median household income, median age, percent minority, count of civic or social organizations, count of social advocacy organizations, and count of religious organizations. The nonrandom self-selection into a magnet zone outside the mandatory attendance zone was accounted for as well.

Key Findings

Net of the effect of the factors listed above, there was a strong positive impact on students' mean achievement deriving from attending a magnet school outside the mandatory attendance zone. This effect was strongest at the first assessment occasion, which occurred a little more than four months into kindergarten, but declined thereafter. Reading performance saw the greatest impact, with the average kindergartener earning an additional nearly 70 vertically scaled points beyond gains owing to regular public school attendance. While the positive returns to mathematics achievement in kindergarten were

only about half the gains seen on the reading exam, they were nonetheless statistically significant. At the end of fourth grade, out-of-zone magnet school students were still outperforming their peers at regular public schools in both subjects, though the final gap on the SAT 10 reading exam was about as large as the beginning gap on the SAT 10 mathematics exam.

The results also revealed a much greater convergence in the SAT 10 reading and mathematics score trajectories between black and Hispanic out-of-zone magnet school students and their white within-zone regular public school peers. On the SAT 10 reading exam, specifically, while non-choosing white kindergartners had a mean score that was near 50 vertically scaled points lower than that for their choosing black and Hispanic counterparts, the scores of all three groups were virtually equal at the conclusion of fourth grade. A similar trend was evident on the SAT 10 mathematics exam, though complete convergence appeared to occur before second grade. By the end of fourth grade, white within-zone regular public school students had surpassed black and Hispanic out-of-zone magnet school students.

Conclusion

Given these findings, one is forced to ask why the returns to magnet choice appear to be front-loaded. Answering the question of why there should be such large gains to out-of-zone magnet school attendance at some initial period, with attendant annual gains that are significantly less than those seen among within-zone regular public school students, is important for policy decisions. One possible explanation is that, while magnet schools do a great job of transmitting knowledge to students, they fail to capitalize on this in later years, perhaps due to repeating what has already been learned. It is possible that magnet school students, particularly those who are attending by choice, have less to learn relative to their non-choosing counterparts at regular public schools; hence, the convergence in score trajectories. The failure to capitalize on the early successes of choosing students is consequential not only for them but also for the racial achievement gap. If the trend showcased in these data continues beyond fourth grade, for instance, the end result could certainly be one in which white within-zone regular public school students significantly outperform their black and Hispanic out-of-zone magnet school peers. ■

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