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RESEARCH BRIEF

Impact of the Choice is Yours on Student Test Performance

Purpose of the Study

This study considers the impact of the Minneapolis area's Choice is Yours program by comparing the test performance of students in the program with that of eligible non-participating Minneapolis school students who share similar characteristics as those participating in the program.

Background & Purpose

The Choice is Yours (CIY) is a program that provided transportation to low-income student residents of Minneapolis in order to allow them to attend more racially and economically integrated suburban district schools, operating from 2002 to 2013. The program resulted from litigation between the Minneapolis NAACP and Minneapolis parents against the State of Minnesota over a desegregation case taken up against it (Finnigan et al., 2014; Kraus, 2008).

The Choice is Yours (CIY) is a program that provided transportation to low-income student residents of Minneapolis in order to allow them to attend more racially and economically integrated suburban district schools.

Earlier research found that CIY students had mixed Math and Reading test score results during the first half of the program's operation (ASPEN Associates, Inc., 2003, 2009). These findings run counter to other research studies, which find that attending integrated schools improves the academic achievement of students (Billings et al., 2014; Logan et al., 2012; Mickelson & Bottia, 2010; Reardon et al., 2019). The fact that the CIY has not been assessed in its later years is a research gap — potentially yielding results that show improvements over time (Chetty et al., 2016). Unlike prior research, this study assesses later results for CIY students from a commonly reported test, the Minnesota Comprehensive Assessment MCA-II from 2007 to 2010.

The following research questions are addressed in this brief:

1. ***As compared to a matched comparison group of eligible non-participants: How well do CIY students perform the year they first test in the program?***

2. ***Secondly, how well do CIY students perform in the program after the first year of testing?***

By breaking the results out according to whether or not CIY students are first-year students, the research can provide evidence about how switching into new schools may impact student performance in the program.

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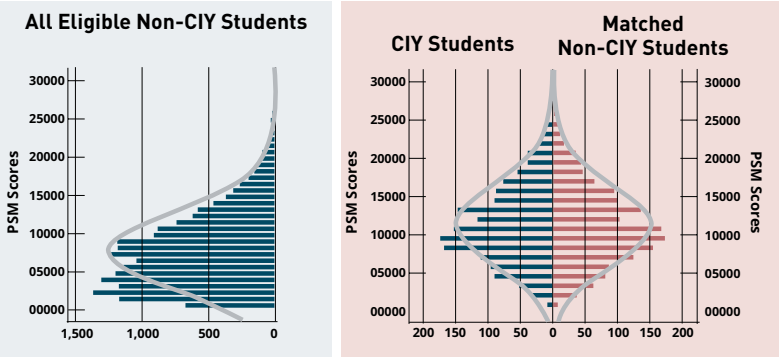
Methods

This study uses MARSS, MCA II, and residential mobility program data from Minn-LInK to assess the math and reading proficiency of CIY students as compared to that of eligible, but non-participating Minneapolis students who resembled CIY students. Linear regression models, controlling for prior test scores, grade-levels, and years, were used to compare math and reading scores between these groups.

This study used Propensity Score Matching (PSM; Benedetto et al., 2018; Glewwe & Todd, 2022) to select a comparison group of eligible non-CIY students from Minneapolis schools who closely resemble CIY students. A propensity score was assigned for each participant for each grade-level in every year, based upon students' gender, race, special education status, gifted and talented status, lunch program status, limited English proficiency status, and the test score from the prior year.

PSM provided a well-balanced set of propensity scores between CIY and non-CIY students, as compared to the original all eligible non-participant group, as is illustrated in Figure 1. Overall, 98% of PSM matches were successful and therefore retained for the analysis. Other PSM results were also well-balanced, including those for groups broken out at every grade level within every year and test subject.

Figure 1.
Propensity Scores Before and After Matching to CIY Students



Math and reading MCA-II test scale scores, ranging from 1 to 99, were used to compare grade-level differences across years (Minnesota Department of Education, 2020). For this study, grade-level groups were pooled together into linear regression models, including results for those testing for the first time in the program and for those testing in later years. Additional residential mobility program data were also incorporated into post hoc analyses to better understand differences in math and reading scores among CIY and comparison group students.

Evaluations into programs where low-income residents move to higher opportunity neighborhoods or schools, have shown that improvements are not immediate but take time to emerge from the duration of participants being in the programs (Chetty et al., 2016). To determine whether student test performance improves more over time, the CIY test results were broken out for students' first year of testing in the program and for students testing in subsequent years.

Findings

First-year CIY students did not score significantly higher than their peers in math or reading. CIY students who took tests in subsequent years had significantly higher math scores than non-CIY students. The same group of later-year students, however, had reading scores that were not significantly different from non-CIY students.

How well do CIY students perform the year they first test in the program?

When CIY students first test in the program, they do not perform much better than non-CIY students, and do not have significantly different math or reading scores from their peers. As shown in Table 1, first-year CIY students scored 0.3 points higher in math, and 0.2 points higher in reading (on average) than non-CIY students, after holding the prior test score, grade-level, and year constant. To put it in perspective it takes approximately 10 scale score points for a student to move from the lowest thresholds of partially meeting test standards to meeting test standards for math and reading. (See Supplemental Tables A & B for grade level and yearly results.)

GIVEN TIME, CIY STUDENTS DO PERFORM IN MATH. AFTER THE FIRST YEAR OF TESTING, CIY STUDENTS SHOW SIGNIFICANTLY HIGHER MATH TEST SCORES THAN NON-CIY STUDENTS.

It is possible that CIY student scores do not improve much in the first year because changing schools over the course of a year could negatively affect test performance— at least in the short run – as students have to adjust to new environments and expectations, meet new teachers, and make new friends. These adjustments could negatively offset any student gains made by being in the program itself.

How well do CIY students perform in the program after the first year of testing?

Given time, CIY students do perform better in math. After the first year of testing, CIY students show significantly higher math test scores than non-CIY students (Table 1). These returning, later-year CIY students score approximately 1.2 points higher in math than non-CIY students. Put another way, if we held this difference constant over time it would roughly take a student a little over eight years in the program to move from a score of not meeting math standards to a score that indicates math standards have been met. Conversely, non-CIY students show test scores that run in the opposite direction, with losses in math performance over time.

Table 1. Differences between CIY and Comparison Students' MCA-II Math and Reading Scores, 2007-2010

	First-Year CIY Students				Later-Year CIY Students			
	B	SE	β	*p*	*B*	SE	β	*p*
Math	0.324	0.747	0.012	0.665	1.197	0.301	0.041	<0.001
Reading	0.222	0.682	0.008	0.745	0.290	0.289	0.010	0.317

Note.*p < .05; Linear models included the following independent variables: CIY participation, Year 1 MCA scale score, grade level (dummy coded), and Year (2007-2009, dummy coded); MCA Year 2 scale scores served as dependent variables.*

However, later-year CIY students do not demonstrate significantly higher reading test scores than non-CIY students (Table 1). These returning, later-year CIY students score approximately 0.3 points higher in reading than non-CIY students, an insignificant result where the margin of the standard error (SE = 0.289) is nearly identical to the estimate itself. (See Supplemental Tables A & B for grade level and yearly results.)

Understanding differences in reading and math achievement

It is uncertain why later-year CIY students perform better in math than reading. One explanation may be that Minneapolis schools received more reading literacy support services than CIY schools, while there was less of the difference for math support services between these groups of schools.

Reading support services, such as Literacy Incentive Aid, Reading Corps, and Regional Schools of Excellence, are all based on schools having larger shares of academically struggling students, a more prevalent situation in Minneapolis schools than in CIY schools. On the other hand, there was less support for math services in academically challenged Minneapolis schools during the study period. The Math Corps program, for instance, just started in 2007, while Reading Corp. has been active in the area since 2003, potentially giving the program more time to improve and develop.

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There also may be a geographic explanation for why CIY student test performance was found to be lower than one might expect overall. Like prior research into the CIY, no controls were set for the location of prior schools attended by CIY students. In post-hoc assessments of the data, study researchers found an over-representation of comparison group students in South Minneapolis schools, and an overrepresentation of CIY students in North Minneapolis schools, north side locations where students generally have lower test scores.

An indication of how much place might matter in student performance can been seen in a residential mobility program where residents from a Minneapolis public housing site, Hollman, were able to choose either central city or suburban home residences. In running a general descriptive analysis of the data from a listing of Hollman students, study researchers found that students who moved and attended suburban schools were ten percentage points more proficient in reading than those that remained in Minneapolis (40% versus 28% proficient in 2007, and 44% versus 33% proficient in 2008).

Conclusion

Unlike prior assessments into the Choice is Yours program (ASPEN Associates, Inc., 2003, 2009), this study finds favorable math results for the program. Overall, CIY students who were tested during multiple years while in the program tend to have better year-to-year math scores than the matched non-CIY students. The results from this study, however, are more aligned with prior CIY studies, which found mixed within-year reading results.

Another major finding of this study is that first-year CIY students do not have significantly higher math score results, while returning, later-year CIY students do. This runs counter to a prior study that found no difference in math performance between entering and returning CIY students (ASPEN Associates Inc., 2009). The fact that CIY students change schools makes it likely that they have some short-term drawbacks from student mobility (i.e., the impact of adjusting to new schools) on test scores before gaining in testing performance at new, more integrated schools (see Welsh 2017).

Limitations

It was found, post-hoc, that the prior schools attended by CIY students were disproportionately located in North Minneapolis, and the matched students in South Minneapolis, potentially distorting the results. Another major limitation is that MCA-II scale scores are not standardized in a way that student test scores can be tracked longitudinally, which is critical to evaluating the full trajectory of student performance.

Altogether, this study's math results are consistent with a body of research that finds positive student achievement results for students attending more racially and economically integrated schools. However, like earlier research into the CIY, study researchers find no evidence that the program's students are performing better in reading. Future research should consider the impact that school mobility, characteristics of prior schools attended, and residential locations of students have on student test performance, as there is a good chance that the results from this and other studies understated the performance gains of CIY students by not properly controlling for prior schools attended by CIY students. The presence of academic support services in schools should also be considered, because CIY students likely had less access to specialized academic services than their Minneapolis counterparts, particularly in the subject of reading.

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