Do Cyber Charters Segregate or Integrate?

Evidence From a Large EMO

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ABSTRACT

I use data from an education management organization to assess whether enrollment in cyber charters exacerbates or ameliorates racial segregation, generally finding evidence for the latter. Students from the four largest racial groups (i.e. white, Black, Hispanic, Asian) transfer into cyber schools in which their racial group has lower representation than the school from which they transferred. About 1 in 5 students transferred from an intensely segregated public school (i.e. 90% or more white or 90% or more non-white), while fewer than one percent of students transferred into one. Districts from which students transferred also benefit: Asian, Black and Hispanic students are disproportionately (relative to other groups) drawn from schools where they are over-represented relative to the district average. The indicators for a segregative effect are a modest increase in the number of white students in majority-white schools, a disproportionate number of Hispanic students drawn from schools where they are under-represented relative to the district average, and lower exposure to Hispanic and Asian students after transferring.

BACKGROUND

Charter schools are generally evaluated along several dimensions, most notably student achievement and persistence, but also their impacts on racial segregation. Although student racial segregation in schools is rarely used for accountability purposes, its measurement nevertheless attracts stakeholder interest, as the history and persistence of racial segregation in American public schools is well-documented (Chang, 2018).

Several studies that examine the net impact of charter schools vis-à-vis school segregation conclude that charters tend to exacerbate segregation (Bifulco & Ladd, 2006.; Monarrez, Kisida & Chingos, 2019; Rotberg, 2014; Whitehurst, 2017). Indeed, not a single study that examines the impact of charters upon school segregation concludes that, on balance, charters ameliorate segregation, though several studies conclude the opposite (Rotberg, 2014; Michelson, Bottia & Southworth, 2008).

Although studies that examine the impact of charter schools on racial segregation vary across time and place, they do not vary across school setting. For example, ethnocentric charter schools might differ in their impact on segregation from other charters because they purposefully seek to serve families from specific ethnic communities (Fox & Buchanan, 2014; Swanson, 2017). Suburban charter schools meanwhile might differ from urban charters schools because they serve a population who might have substantially different push and pull factors (Altenhofen, Berends & White, 2016).

Cyber charters-the focus of this study- might differ from brick and mortar charters with regard to racial segregation for two reasons. First, and most importantly, cyber charter school enrollment is not constrained by temporal boundaries, but state borders. The pool of students from which a cyber charter draws is therefore markedly different in size and demographics compared to a brick and mortar charter school, perhaps bolstering the odds of integrative effects (Liu, 2012). Second,

cyber charters are generally not ethnocentric nor tailored to serving a particular ethnic or racial group. In other words, cyber charter charters are systematically different in the students they can serve and the students they seek to serve.

REVIEW OF LITERATURE

A substantial literature addresses the impact of charter schools upon racial segregation. Studies in North Carolina (Bifulco and Ladd, 2007; Clotfelter, Ladd, & Vigdor, 2013), New Jersey (Gulosino & d'Entremont, 2011), Pennsylvania (Kotok et al., 2015), Missouri (Parker, 2012) California and Texas (Booker, Zimmer & Buddin, 2005) conclude that Black students are more isolated in the charters schools into which they transferred than the district schools from which they transferred. National studies also generally indicate that, on balance, charter schools tend to maintain high levels of segregation (Zimmer et al., 2009) or exacerbate it (Frankenberg, Siegel-Hawley & Wang, 2011; Garcia, 2008). Recent evidence indicates that the neoliberal education reform project may not be conducive to integration, as families support the principle of integration, but rarely prioritize it when selecting schools (Chapman & Donnor, 2015; Torres & Weissbourd, 2020). In fact, white parents sometimes use school racial demographics as a proxy for school quality (Goyette, Farrie & Freely, 2012).

Charter school advocates lodge disagreement to the concern that charters generally exacerbate racial segregation on two fronts. First, some argue that segregation in schools of choice is not intrinsically problematic. Families from underserved communities might prefer a "hyper-segregated" school if it is ethnocentric or culturally affirming, or simply because the student body is demographically similar to their child (Shapiro, 2019). Second, the common quantitative measures of segregation (e.g. isolation indexes) fail to capture what occurs inside a school (Scafidi, 2015). McCluskey (2019) argues that voluntary associations (i.e. schools of choice) that unite families around common goals are better-suited to foster racial harmony. Certainly, some evidence supports that argument. Greene and Mellow (1999) for example observe that private schools have a higher degree of racial mixing in lunchrooms compared to public schools, an observation eluded by macro-level evaluations. Lewis-McCoy (2014) meanwhile observes that ostensibly integrated suburban public schools often feature highly segregated social networks.

To date, no literature specifically probes whether cyber charters are integrative or whether they exacerbate segregation. Still, virtual schools are sometimes criticized peripherally for their student demographics (Miron, Shank & Davidson, 2018). In an evaluation of the Florida Virtual School (FLVS), Chingos and Schwerdt (2014) find that students enrolled in FLVS are 12 percentage points whiter than Florida public school students not enrolled in FLVS. Similarly, in Ohio, "For elementary and middle schools, Black students in city, suburban, and rural districts are 17 to 30 percentage points less likely than White students to enroll in e-schools, and for high schools, Black students in city and suburban districts are 25 percentage points less likely to enroll in e-schools than White students." (Ahn & McEachin, 2017, p. 48). Nationally, Molnar (2021) observes that "Aggregate data on student ethnicity from virtual schools continues to differ substantially from national averages. Just over 58% of the students in virtual schools were White-Non-Hispanic while the national mean was 49.8%." (Molnar et al., 2021, p. 24).

A substantial body of academic literature indicates that school integration is not just normatively desirable, but optimal for student achievement, especially among Black students. For example, studies indicate that integration is associated with higher achievement for Black students, (Hanushek, Kain & Rivkin, 2000), smaller Black-white achievement gaps on standardized assessments(Reardon, Kalogrides & Shores, 2017) and SAT scores (Card & Rothstein, 2007), and a lower incidence of dropout for Black students (Guryan, 2004). Benefits transcend achievement and high school graduation. Ashenfelter, Collins and Yoon (2005) as well as Johnson (2011) conclude that integration bolsters income for Black adults, and Johnson also observes benefits regarding occupational attainment, college quality, health status, and incarceration.

DATA AND METHODS

Enrollment data was provided by Stride Inc. Stride is the largest education management organization in the United States in terms of enrollment, and operates virtual charter schools across the country (Miron, Shank & Davidson, 2018). Stride provided student-level data that identified the cyber charter school in which the student was enrolled, as well as, when applicable, the name of the school from which the student transferred. Data was from the 2018-19 school year. Although more recent data has been collected, I favor the 2018-19 school year as a more meaningful snapshot given the enrollment surge that Stride and other dedicated virtual school providers experienced during the COVID-19 pandemic and the likelihood that enrollment patterns during the pandemic were divergent from historical trends (Butrymowicz, 2020).

Demographic data for the virtual charter school that the student attended in 2018-19 and the district school from which they transferred were collected through the National Center for Education Statistics (NCES) Elementary/Secondary Information System (ElSi). Notably, Stride did not collect NCES IDs for the previous school that each child attended but relied on parents to transcribe that information on intake forms. Overall, the dataset included 51,254 students who previously attended a public school, of which 16,130 (31.5%) had their previous school transcribed in a way that exactly matched NCES records. Likely, missing data is random, or at least random as it relates to the change in student demographics that occur when a student transfers from a public school to a cyber charter school.

FINDINGS

There is not a single measure used to evaluate school integration. Moreover, findings are sensitive to how measures of integration are operationalized (Ritter et al., 2010; Whitehurst, Reeves & Rodrigue, 2016). Therefore, borrowing from previous literature, I employ a variety of measures to assess the degree to which enrollment in cyber charters fosters racial mixing or intensifies racial isolation.

Question 1: *What proportion of students attended majority white district schools, and how does it compare to the proportion of students in majority white cyber charters?*

A 2014 report issued by the UCLA Civil Rights Project documents the stagnation in integration in the South by highlighting that Black students are less likely to attend a majority-white school

than was the case about fifty years ago (Orfield et al., 2014). Since the proportion of white Americans has fallen considerably in recent decades, some posit that the proportion of Black and Hispanic students in majority-white schools is an archaic measure of integration. Nevertheless, since the measure is occasionally still deployed as a measure of integration, I employ it in this study.

Table 1: Proportion of Students that Attend a Majority-White School

	STUDENTS IN MAJORITY WHITE SCHOOLS BEFORE TRANSFERRING	**STUDENTS IN MAJORITY WHITE SCHOOLS AFTER TRANSFERRING**
ASIAN	85/213 (39.9%)	116/215 (54.0%)
BLACK	874/2,516 (34.7%)	1,734/2,525 (68.7%)
HISPANIC	1,061/2,651 (40.0%)	1,686/2,659 (63.4%)
WHITE	7,437/9,679 (76.8%)	8,390/9,718 (86.3%)
ALL STUDENTS	10,022/16,067 (62.4%)	12,706/16,127 (78.8%)

Data indicate that 1,061 of 2,651 (40.0%) of Hispanic and only 874 of 2,516 (34.7%) African American students were previously in majority-white schools. However, 1,686 of 2,659 Hispanic students (63.4%) and 1,734 of 2,525 (68.7%) African American students enrolled in majority-white cyber charters. In other words, the proportion of Hispanic students in a majority-white school increased by more than 50 percent, whereas the odds that an African American student was enrolled in a majority-white school nearly doubled. The greater isolation among Black students in the schools from which they transferred tracks with the observation that white-Hispanic segregation is less extreme and less resilient than white-Black segregation (Whitehurst, 2017).

Though the number of white students enrolled in majority-white schools also increased, the enrollment increase was smaller in volume and proportion compared to the increase experienced by Asian, Black, and Hispanic students. Overall then, the drawbacks of the measure notwithstanding, the results indicate a net integrative effect.

Question 2: *What proportion of students transferred from an intensely segregated school and what proportion transferred into one?*

In addition to examining the proportion of students of color in majority-white schools, the UCLA Civil Rights project posits a different operationalization of segregation that is perhaps less

sensitive to changing demographics over time. That is, they argue that a school is "intensely segregated" if is 90% or greater white, or 90% or greater non-white (Mordechay & Ayscue, 2019).

Table 2: Proportion of students in Intensely Segregated Schools

	BEFORE TRANSFERRING		**AFTER TRANSFERRING**	
	Students in intensely segregated white schools	Students in intensely segregated non-white schools	Students in intensely segregated white schools	Students in intensely segregated non-white schools
ASIAN	7/215 (3.2%)	37/215 (17.2%)	0/215 (0.0%)	0/215 (0.0%)
BLACK	79/2,525 (3.1%)	651/2,525 (25.8%)	0/2,525 (0.0%)	0/2,525 (0.0%)
HISPANIC	105/2,659 (4.0%)	585/2,659 (22.0%)	4/2,659 (0.2%)	0/2,659 (0.0%)
WHITE	1,836/9,719 (18.9%)	266/9,719 (2.7%)	94/9,719 (1.0%)	0/9,719 (0.0%)
ALL STUDENTS	2,146/16,129 (13.3%)	1,670/16,129 (10.4%)	102/16,129 (0.6%)	0/16,129 (0.0%)

The data indicate that 2,146 of 16,129 (13.3%) students transferred from an intensely segregated white school, including 18.9% of white students. Moreover, 1,670 of 15,595 (10.2%) students transferred from an intensely segregated non-white school, including one in four African American students. Meanwhile, students were unlikely to come from schools in which their departure exacerbated "intense segregation." Only 2.7 percent of white students came from intensely segregated non-white schools, and only 4 percent of Hispanic students transferred from intensely segregated white schools. The proportion of Asian and African American students to transfer from intensely segregated white schools was lower still at 3.2 and 3.1 percent, respectively. Altogether then, those students who transferred from intensely segregated schools were appreciably more likely to ease rather than exacerbate the segregation in the district from which they transferred.

Whereas 22.6% of students transferred from an intensely segregated public school, only 102 of 16,129 students (0.6%) transferred into an intensely white segregated cyber charter.[1] None of the cyber charters were classified as intensely segregated non-white. As measured by "intense segregation," cyber charters produce integrative enrollment effects.

[1] The intensely segregated cyber charter school is located in a state that is nearly 95% white, and two thirds of the transfers to that school previously attended an intensely segregated white public school. In other words, that cyber charter is not producing segregation so much as it is reflecting demographics in the state it serves.

Question 3: *Which students transfer from schools in which their race was over-represented? Which students transfer from schools in which their race was under-represented?*

Monarrez, Kisida and Chingos (2019) posit that "assessing whether a school's racial composition contributes to segregation requires context. It does not suffice to ask what share of a school's students are members of particular racial groups. We also need to look at the racial composition of the school's system and its local surroundings, asking what integration could look like given these constraints" (p. 2). They go on to define a school as segregated if the racial composition of a group of students deviates from the district average by more than 10 percentage points.

We apply these same insights to examine how often students come from schools in which they are over- or under-represented. If student race is underrepresented in the school from which they transferred, their transfer would exacerbate segregation at that school. If students of that race are overrepresented, then their departure would ameliorate segregation in that school. Two-sided t-tests reveal whether there are statistically significant differences in the proportion of students who transferred from students in which they are over- or under-represented compared to other students.

Table 3: Racial over- and under-representation in districts from which students transferred

	OVER-REPRESENTED (%)		**UNDER-REPRESENTED (%)**	
	Group in row	All others	Group in row	All others
ASIAN	14.0***	6.8	5.1	6.7
BLACK	20.0***	6.4	7.1	7.7
HISPANIC	16.0***	6.1	11.2***	8.1
WHITE	11.4	11.1	7.3***	18.8

***p<.01

Overall, the data indicates a net integrative effect. Asian, Black, and Hispanic students are more likely than other students to come from schools where their demographic is over-represented compared to the district average. Meanwhile, white students are less likely than other students to come from schools where white students are under-represented relative to the district average. The only indication of a segregative impact is the observation that Hispanic students are disproportionately drawn from schools in which they are under-represented. Notably, however, Hispanic students are 4.8 percentage points more likely to come from a school where they are over-represented rather than under-represented.

Question 4: *How do exposure and isolation indexes change when students transfer from a district school to a cyber charter school?*

Popular measures of school segregation (e.g. Whitehurst, Reeves & Rodrigue, 2016) chronicle the proportion of demographically dissimilar students to which a student is exposed (exposure index) and the proportion of demographically similar students to which a student is exposed (isolation index). Unlike the other measures used previously, there is no discrete outcome that characterizes integration or segregation. Rather, higher exposures indexes are considered an indication of integration and higher isolation indexes a measure of segregation.

Table 4: Exposure and Isolation Indexes

	District School				Cyber Charter			
	Asian	Black	Hispanic	White	Asian	Black	Hispanic	White
Asian	10.9%	3.5%	3.9%	2.3%	3.9%	1.9%	2.8%	1.4%
Black	14.3%	35.8%	10.8%	10.5%	17.5%	19.9%	13.5%	14.7%
Hispanic	25.2%	19.0%	39.1%	14.8%	16.9%	12.0%	19.6%	11.5%
White	42.5%	36.2%	40.5%	66.9%	53.1%	58.4%	54.9%	64.7%

Isolation indexes uniformly indicate that cyber charters are integrative. For all four groups, the isolation index decreases, indicating that students transfer to schools in which a lower proportion of students are from the same racial background as that student. Notably, that includes white students. That the isolation index for white students fall despite a slight increase in the proportion of white students enrolled in majority-white schools after transferring highlights the complexity of measuring school integration and the importance of utilizing multiple measures.

Exposure indexes offer mixed evidence vis-à-vis school integration. Exposure to Asian and Hispanic students decreases for all students after transferring, whereas exposure to Black and white students increases except if the student is Black or white, respectively.

CONCLUSION

The preponderance of evidence indicates that enrollment in cyber charters fosters racial integration. Students from the four largest racial groups all transfer into schools with a lower proportion of students from their own racial background, all are more likely to end up in majority-white schools, and the likelihood of being enrolled in an “intensely segregated” school falls dramatically. Lower exposure to Asian and Hispanic students are the only metrics according to which district schools outperformed cyber charters with regard to integration.

Though these findings provide a clear answer to a novel research topic, they invite important follow-up questions. First what happens inside cyber charters with regard to racial mixing? As mentioned, macro-level measures of integration do not answer important questions about what happens inside schools. Future research might explore how the racial dynamics inside cyber charter schools compare to brick and mortar schools. Second, to what extent would results replicate among cyber charters nationally? Though Stride is the largest education management organization in the country, it is not clear to what extent results reflect the landscape of cyber charters nationally. Finally, to what extent do results replicate within district virtual programs? Unlike cyber charters, district cyber schools-which are poised for significant expansion (Singer, 2021)- generally restrict enrollment to district residents, a constraint that might limit racial mixing.

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