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Segregation in Metro Pennsylvania Schools

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Abstract

Although the population of students attending U.S. public schools is rapidly diversifying, school segregation is on the rise nationally. Demographic shifts such as the growth of populations in large, interconnected metropolitan areas may contribute to this trend, however, it seems that other factors are at play. Using enrollment data for public schools in metropolitan areas of Pennsylvania, we employ descriptive statistics, a P-star exposure index, and a decomposition technique to examine students’ exposure to students of different ethnic groups and to low-income students, and to estimate how much of the exposure difference is due to school, district, and metropolitan level segregation. Our findings show that all students in Pennsylvania’s metropolitan-area schools are segregated by income and ethnicity, and the majority of segregation in Pennsylvania occurs between districts, suggesting that policymakers must develop innovative integration strategies or re-organize Pennsylvania’s school districts to offset segregation.

Keywords: Education, segregation, ethnicity, income
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Introduction

Educators, the public, and policymakers are not unfamiliar with the problems associated with racial and economic segregation, especially as they relate to schooling, yet, a long-term solution has proven elusive. Nationally, public school integration began with the Supreme Court decision in *Brown v. Board of Education of Topeka* (1954). Since then, many public school districts have appealed court supervision and been declared unitary, meaning that they were deemed to have transitioned successfully from a dual public education system based on racial categories (e.g., *Oklahoma City v. Dowell*, 1991). Despite these early successes, the end of aggressive court supervision has contributed to a pattern of increasing segregation by ethnicity and income nationwide (Reardon, Grewal, Kalogrides, & Greenberg, 2012). The release of districts from court-ordered desegregation has coincided with major demographic shifts in the U.S. as minority students constitute an increasing share of the public school population (Frey, 2012).

This study examines demographic shifts in metropolitan Pennsylvania’s student population by comparing 1999-2000 and 2009-2010 academic years and analyzes the extent to which different groups are concentrated in low-income schools. Given the intersections of race, poverty, and quality of education in the United States (Saporito, & Sohoni, 2007), it is appropriate to examine public school enrollment patterns in these terms. While other studies have analyzed similar trends nationally (Orfield, Kuscera, & Siegel-Hawley, 2012; Reardon et al., 2012) and regionally (Frankenberg, 2010), our research utilizes exposure measures and decomposition techniques in order to account for the segregated nature of school districts within Pennsylvania metropolitan areas, where 80% of Pennsylvania students attend school.

Using publicly available data, our study reveals that the majority of segregation in metropolitan Pennsylvania public schools occurs at the district level. In Pennsylvania’s metropolitan areas, segregation between districts has increased from 2000 to 2010. We conclude that persistently high levels of segregation need to be addressed at the district level. In our conclusion, we discuss the policy implications of our findings and how the trends in Pennsylvania relate to changes in the region and nation.

Background

The rapidly diversifying population in the U.S. and the parallel increase in school segregation present challenges for educators. These challenges include lower student achievement as measured by test scores and lower high school/college attainment (Borman & Dowling, 2010; Linn & Welner, 2007; Mickelson, 2008; Rumberger & Palardy, 2005) as well as difficulties attracting and retaining teachers (Clotfelter, Ladd, & Vigdor, 2010). In addition, school segregation is intensifying and has reached the highest level in over four decades (Orfield, Kuscera, & Siegel-Hawley, 2012). This trend can be explained in part from shifting population demographics and partially from a new generation of policy makers and judges who are less concerned with issues of desegregation, poverty, and equity in education (Reardon et al., 2012). The *Milliken v.*

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1 Hereafter referred to as 2000 and 2010.
Bradley (1974) decision, in which the Supreme Court rejected the idea that only cross-district school busing could remedy decades of unfair housing practices, and the Oklahoma City v. Dowell decision (1991), in which the Supreme Court stated that desegregation efforts are no longer a priority, are two decisions desegregation experts see as particularly damaging (Garnett, 2007). Despite the decline of aggressive court-ordered desegregation plans, in the case Parents Involved in Community Schools v. Seattle School District (2007) the U.S. Supreme Court recently affirmed the benefits of diversity in public schools while at the same time restricting the way race and ethnicity can be used in desegregation plans.

Given the trends of increasingly diverse students in public schools and increasing levels of segregation, it is important to consider the consequences of attending racially and socioeconomically segregated schools. Starting with the Coleman Report (1966), many social scientists have found that concentrated school poverty negatively affects student learning above and beyond the effects of individual family resources (see Rumberger & Palardy, 2005 and Rothwell, 2012 for more recent studies). While there are debates about the exact threshold for when poverty concentration becomes detrimental for student learning as well as the mechanisms for how it influences learning, several scholars suggest that concentrated poverty does indeed adversely affect students materially through school funding and teacher turnover, mentioned earlier, as well as peer effects, which are more difficult to measure (Boger, 2005; Orfield & Lee, 2005; Rumberger & Palardy, 2005).

The decentralized nature of the American educational system exacerbates income differences of schools since school funding is primarily a function of local property taxes. As such, a self-perpetuating cycle exists where families with the financial means can sort themselves into communities based on the quality of the school district, which in turn increases property values and tax revenues (Bischoff, 2008). Conversely, those families who lack the means to relocate often remain in poor, struggling districts. Although state and federal governments contribute an increasing proportion of public school funding, these contributions are small compared to local contributions. Consequently, dense pockets of poverty continue to affect schools within low-income areas, whether urban, suburban, or rural.

Pennsylvania provides an interesting context to study segregation trends for several reasons, including its fragmentation and delayed diversification. Historically, “diversity” in Pennsylvania has been largely defined in “black” and “white” terms. However, the decade between 2000 and 2010, which we examine in this paper, has been characterized by an 82% increase in the Hispanic population coupled with a noticeable decrease in the white population (Frey, 2011). Given that African Americans and Hispanics are, on average, more likely to live in poverty than whites (Macartney, Bishaw, & Fontenot, 2013; U.S. Census, 2012), it stands to reason that this diversification trend in Pennsylvania is likely to result in an increase in low-income students as well.

Metropolitan areas in Pennsylvania, like those in other Northeast and Midwest states, tend to be older, more fragmented, and more segregated along racial and socioeconomic lines than in the West and South (Bischoff, 2008). Fragmentation, an artifact of regional differences in preference for independent suburban municipalities (more common in the Northeast) versus countywide municipalities (more common in the
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South; Holme & Finnigan, 2013), occurs when autonomous school districts proliferate such that they are made up of smaller and smaller geographic areas or student populations. Thus, while the absolute number of school districts in the United States has steadily decreased over the last century as transportation allowed rural districts to cover greater geographic zones, an opposite trend has occurred in metropolitan areas where transportation enabled people to live and work in different communities (Fischer, 2008; Monkkonen, 1980). Transportation has linked metropolitan communities into densely populated, overlapping regions. Fragmentation often translates into inequity in educational funding since district boundaries dictate tax bases and attendance zones.

Pennsylvania is a prime case to study metropolitan district fragmentation, as there are 500 districts serving approximately 1.8 million students (Pennsylvania Department of Revenue, 2012). Especially relevant for our study is the fact that metropolitan fragmentation has been shown to be related more closely to between-district segregation rather than within-district segregation (Bischoff, 2008). While some have argued that fragmentation may have benefits, such as increased efficiency (Peterson, 1981), others say that fragmentation impedes integration, which would provide educational and social benefits for all students regardless of ancestry or socioeconomic status (Clotfelter, 1999; Lewis & Hamilton, 2011). Within Pennsylvania’s unique context of a high degree of fragmentation within metropolitan areas, our study addresses three research questions:

1) To what extent are black, white, Asian, and Hispanic students in Pennsylvania exposed to students of other race/ethnicities, and how has exposure changed from 2000 to 2010?

2) To what degree are these different groups exposed to low-income students, and how has exposure changed from 2000 to 2010?

3) To what extent is segregation by race/ethnicity and by income in Pennsylvania’s metropolitan areas a result of the distribution of students within districts, across districts, and across metro areas for 2000 and 2010?

Method

Data and Measures

This study uses school-level enrollment data for Pennsylvania schools obtained from the Common Core of Data (CCD) Universe, the central database for public school information in the United States\(^2\). Over two thirds of Pennsylvania’s schools are located in metropolitan areas and approximately 80 percent of students live in these areas. We only examine schools located in metropolitan areas (see Table 1). Some of these metropolitan area boundaries span states outside of Pennsylvania, but we have only analyzed sections within the state due to the significance of political boundaries.

As indicated in the table, these metropolitan areas range in terms of size and ethnic diversity as measured by the percentage of white students in each area. Philadelphia and Pittsburg account for about 60% of schools, districts, and number of students in the

\(^2\) Data is available at https://nces.ed.gov/ccd/elsi/.
metropolitan areas. However, there are several other large metropolitan areas, such as Allentown and Harrisburg.

Table 1: Metropolitan Statistical Areas and Descriptive Information for 2010

<table>
<thead>
<tr>
<th>Metropolitan Area</th>
<th>Number of Schools</th>
<th>Number of Districts</th>
<th>Number of Students</th>
<th>Percent of White Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philadelphia</td>
<td>819</td>
<td>140</td>
<td>532,493</td>
<td>52.9</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>610</td>
<td>120</td>
<td>310,693</td>
<td>82.1</td>
</tr>
<tr>
<td>Allentown-Bethlehem-Easton</td>
<td>146</td>
<td>27</td>
<td>100,558</td>
<td>66.9</td>
</tr>
<tr>
<td>Scranton-Wilkes-Barr</td>
<td>130</td>
<td>26</td>
<td>77,048</td>
<td>83.3</td>
</tr>
<tr>
<td>Harrisburg-Carlisle</td>
<td>134</td>
<td>24</td>
<td>71,977</td>
<td>71.3</td>
</tr>
<tr>
<td>Reading</td>
<td>106</td>
<td>18</td>
<td>70,047</td>
<td>67.4</td>
</tr>
<tr>
<td>Lancaster</td>
<td>117</td>
<td>17</td>
<td>68,174</td>
<td>74.5</td>
</tr>
<tr>
<td>York-Hanover</td>
<td>117</td>
<td>20</td>
<td>67,047</td>
<td>79.9</td>
</tr>
<tr>
<td>Erie</td>
<td>81</td>
<td>16</td>
<td>40,586</td>
<td>79.6</td>
</tr>
<tr>
<td>Johnstown</td>
<td>37</td>
<td>13</td>
<td>18,773</td>
<td>91.5</td>
</tr>
<tr>
<td>Youngstown-Warren</td>
<td>40</td>
<td>13</td>
<td>16,838</td>
<td>85.8</td>
</tr>
<tr>
<td>Williamsport</td>
<td>36</td>
<td>8</td>
<td>16,420</td>
<td>87.3</td>
</tr>
<tr>
<td>State College</td>
<td>30</td>
<td>8</td>
<td>13,597</td>
<td>90.9</td>
</tr>
<tr>
<td>New York</td>
<td>12</td>
<td>2</td>
<td>9,239</td>
<td>89.1</td>
</tr>
</tbody>
</table>

The increase in charter school enrollment in recent years complicated the 2010 analysis because charters are classified as public schools, and in addition, function as districts. Whereas traditional public schools are nested within districts nested within metropolitan areas, charters are just nested within metropolitan areas. Therefore, our analysis was conducted with and without charter schools, and we found little difference (less than 1% in all measures) so we elected to include them in the analysis. The CCD provides basic demographic information such as school enrollment by race/ethnicity, percentage of free- or reduced-price lunch (FRL) students, and location. Although CCD does not make available specific information on student income, it does provide information on how many students qualify for FRL. The FRL measure, while it has limitations, is commonly used as a proxy for estimating the number of students living in households whose incomes are at or near the poverty threshold determined by the U.S.

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3 Charter students only accounted for around 3.2% of all enrollment in the state in the fall of 2009 (Commonwealth Foundation, 2011).
4 Since 1999-2000 combined Asian and Pacific-Islander, we manually combined those two groups for 2009-10 for consistency.
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Census Bureau, which was approximately $41,000 for a family of four in 2010 (185% the poverty rate for that year)\(^5\).

Analytic Method

This study analyzes segregation that potentially occurs at three levels: school, district, or metropolitan area (MSA)\(^6\). At the school level, segregation may occur such that minority students attend one school, while white students attend a second school. If these schools are in the same district, it may appear that the district is racially integrated in terms of the number of minority and white students in the district, yet in reality the students remain separated from each other. Students may also be segregated at the district level such that one district is majority white while a neighboring district comprises mostly minority students. A third level of segregation may be at the MSA level when students of a particular group reside in specific metropolitan areas. This study uses a “P-Star” measure for segregation by two categories in the CCD Universe data, race/ethnicity and FRL, combined with a gap-based exposure (“P-Star”) index in order to examine the degree of segregation at all three levels.

The “P-star” (referred to as exposure for remainder of paper) refers to a measure of potential contact or interaction between groups and is a common measure of segregation (see Appendix B in Iceland, Weinberg, & Steinmetz (2002) for an overview of segregation measures). This exposure index is especially useful for measuring school segregation because it considers school composition (Massey & Denton, 1988). The exposure index indicates the proportion of students of one group (Y) attending the school of a typical student in another group (X). This measure can be applied to exposure to ethnic groups and income groups. For ease of interpretation, we report all exposure values as the average percentage of students encountered at a given student’s school.

We extend our exposure analysis by using a “gap-based” exposure index because it can separate the effects of distribution versus composition. For example, if the overall exposure index yields a value that says the typical black student attends a school where only 10% of the school population is white, it is difficult to determine whether the low value is due to distribution (e.g., are white students concentrated in another school in the area?) or composition (e.g., is the white population in the local area very small and therefore all students in the area have minimal exposure to white students?). For this reason, we use the gap-based exposure index because it allows us to distinguish between the effects of the composition of students in the local school, district, and metropolitan area versus the effects of distribution of students into school districts (see Van Hook and Balistreri, 2002 for another example). The “gap-based” exposure measure can be decomposed into “meaningful parts” such that we can determine whether differences in levels of exposure are due to distribution of students across schools, across districts, or across metro areas (Clotfelter, Ladd, & Vigdor, 2002). We decompose the differences in exposure among

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\(^5\) The 2000 analysis uses a slightly lower FRL threshold as defined by census for that year.

\(^6\) The Census definition for metropolitan statistical area was changed to core based statistical area in 2002. We use the pre-2002 boundaries since this defines metropolitan areas as only those with an urban center over 50,000 people. The new CBSA includes micropolitan communities with 10,000-50,000 people as well.
blacks, Hispanics, and Asians compared to whites in terms of exposure to FRL students and to white students for 2000 and 2010.

Results

In 2000, there were 1,427,973 students in metropolitan areas, compared with 1,412,449 in 2010. Although the majority of students in 2000 and 2010 were white, the share of white students in metropolitan areas decreased while the share increased for black, Hispanic and Asian students. Figure 1, below, illustrates shifts in ethnic makeup of the student population in metro Pennsylvania overall by comparing data for these school years. Over this time period, the white share of enrollment decreased 6 percentage points within Pennsylvania’s metro areas. The percentage of black students increased slightly, by nearly two percentage points. Meanwhile, the largest increases occurred for Hispanics and Asians: The share of Hispanics and Asians, although under 10% for each, almost doubled over this time period.

Figure 1: Composition of Students in Pennsylvania’s Metro Areas, 2000 and 2010

In terms of average exposure, Figure 2 illustrates that most white students attended a school in 2010 that was over 85% white, a decrease of only 4.3 percentage points from 2000. The leftmost columns in Figure 2 show the average percentage of white students in metro areas in 2000 and 2010. The following columns show exposure to white students for each racial group, and comparing the exposure to the metro average indicates whether students are under or overexposed to whites given the composition for the area. For example, the typical white student attended a school that was 85% white, indicating overexposure to their own group (85.1%>69.9%). Meanwhile black students are still dramatically underexposed to white students (28.2%<69.9%) despite the fact that the exposure rate remained stable while the proportion of the state-wide school population that was white decreased. Although the exposure rate to whites among Hispanics decreased
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slightly over the past ten years (-2.4 percentage points), the rates for blacks and Asians relative to whites changed little. Finally, it should be noted that while the average white exposure to whites dropped more than any individual group, this was a function of the proportion of non-whites increasing over this time and thus having more influence on the analysis for all students in 2010.

Figure 2: Student Exposure to Whites by Race in Pennsylvania’s Metro Areas, 2000 and 2010

Figure 2 depicts the difference in exposure to white students among whites, blacks, Hispanics, and Asians via the percentage of white students in the average white/black/Hispanic/Asian student’s school. We then decompose this difference by school locale in order to estimate the extent to which differences in exposure to white students are due to differences in the distribution of white students within districts, across districts, or across MSAs. Table 2 (below) helps answer the question: are certain students racially segregated because of the way white students are distributed between schools within districts, between districts, or between metro areas?

The top row of Table 2 shows the overall difference in exposure to white students for black, Hispanic, and Asian students compared to the reference group, white students (e.g., the percentage of white classmates in the typical white student’s school minus the percentage of white classmates in the typical black student’s school) \(^7\). For example, in 2010, the percentage of white students in a typical black student’s school was 56.9 percentage points lower than the percentage of white students in a typical white student’s school. (This difference is illustrated in Figure 2: 85.1-28.2.) On average, all nonwhites

\[^7\] The use of white as a reference group follows the methodological approach of Van Hook & Balistreri (2002) and it illuminates the disparities in exposures. Theoretically, it helps us illuminate the actual disparity in exposure levels between different racial/ethnic groups.
were extremely underexposed to whites compared to white students in both years. However, there was a decrease in the disparity for all nonwhite racial groups over the last decade. While each nonwhite group became more exposed to white groups from 2000 to 2010, extreme disparities persist.

The shaded portion of Table 2 shows the degree to which average racial segregation (the value in the “Difference” row) is attributable to the distribution of students of different racial groups across schools, districts, or metro areas. The bulk of the black-white difference in exposure to white students in 2000 (over 40 points) can be explained by the between-district difference in metro areas. It explains about two-thirds of the difference (40.0/61.3) while around one-eighth (8.2/61.3) was attributed to within district segregation (the segregation between schools within the same school district). Finally, we see that over 20% (13.1/61.3) of the segregation is accounted for by the difference in composition between metropolitan areas. This finding conforms with the overall makeup of metropolitan areas such as Philadelphia.

As previously noted, there was a 4.5% drop in the black-white gap between 2000 and 2010. All of this decrease (and more) in the black-white gap is related to a reduction in the within-district segregation and as a consequence of Pennsylvania becoming more diverse. However, the between-district segregation between blacks and whites actually increased between 2000 and 2010. This reinforces the proposition that metropolitan area school districts are loci for sorting by race/ethnicity.

The differences in exposure for Hispanics and whites in 2000 echo our findings for black students. The between-district distribution explains almost three-fourths of all difference between Hispanics’ and whites’ exposure to whites (37.6/51.4). The Hispanic-white gap in exposure decreased between 2000 and 2010 with all of the reduction being accounted for by the within-district and across MSA difference. Finally, Asians on average attended schools with over 25 points fewer whites than white students in 2000 and less than 22 points fewer in 2010. As with black and Hispanic students, most of the Asian-white segregation is also occurring between districts.

Table 2: Decomposition of the difference in the percentage of white schoolmates, 2000 and 2010.

<table>
<thead>
<tr>
<th></th>
<th>Black</th>
<th>Hispanic</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>percentage of</td>
<td>61.3</td>
<td>56.9</td>
<td>51.4</td>
</tr>
<tr>
<td>white classmates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference due to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>distribution of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>white students:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Across schools</td>
<td>8.2</td>
<td>5.5</td>
<td>5.1</td>
</tr>
<tr>
<td>within districts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Across districts</td>
<td>40.0</td>
<td>41.7</td>
<td>37.6</td>
</tr>
<tr>
<td>within MSA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Across MSAs</td>
<td>13.1</td>
<td>9.7</td>
<td>8.7</td>
</tr>
</tbody>
</table>
Next, we show the level of exposure of each racial group to FRL students (Figure 3). Each bar depicts the percentage of students who qualify for FRL in the typical school of each group of students (labeled along the x axis). Compared to 2000, the exposure to FRL students by race increased for each group. The increase was the greatest for white students, though they were still below the 2010 metro average of 39.6%, the number we would expect if FRL students were evenly distributed. In 2010, the average black student went to a school where over two-thirds (67.4%) of their schoolmates were from low-income families. Hispanics are not far behind, attending schools with an average of 62.7% low-income students in 2010. Asians and whites go to schools with much lower percentages of low-income students (32.6% and 27.2% respectively).

Figure 3: Average Exposure of Each Racial Group to FRL Students in Metropolitan Areas, 2000 and 2010

Finally, we calculate the difference in exposure to low-income students for white, black, Hispanic, and Asian students (Table 3). This decomposition helps answer the question: Are certain students concentrated in low-income schools because of the way low-income students are distributed across schools (within districts), across districts, or across metro areas? The top row of Table 3 shows the difference in exposure to low-income students for each racial group compared to the reference group, white students.

On average, all three groups attended schools with higher proportions of low-income students compared to whites. There was a small decrease for Asians and slight increases for blacks and Hispanics between 2000 and 2010. In both 2000 and 2010, the typical black student attended a school with over 40% more FRL students than the average white student. For the typical Hispanic student, the percentage of low-income students in their school relative to whites was actually about one point higher than in 2000. Asian students in Pennsylvania also go to schools with more low-income students than do whites, but the difference is less.
The shaded portion of Table 3 shows the degree to which the concentration of black and Hispanic students in low-income schools is attributable to the distribution of low-income students across schools, districts, or metro areas. Most of the black-white difference in exposure to low-income students in 2000 (almost 32 percentage points) can be explained by concentration of black students into low-income districts within metro areas. In other words, about three-quarters of the difference is explained by between-district segregation (31.6/42.2=74.8% of the black-white difference in exposure to low-income students is attributable to the distribution of low-income students between districts) while about 15% is accounted for within districts. The fact that the between MSA difference is fairly low further reinforces the claim that most segregation occurs between neighboring districts. This indicates that Pennsylvania’s MSAs are highly segregated by race and income. We find that minority students are more likely than whites to go to schools with low-income students due mostly to segregation at the district level rather than at the school or metro level.

For 2010, the between-district segregation explained over 80% of the difference in exposure between Hispanics and whites (31.3/38.3). The within-district difference accounted for almost the entire remainder of Hispanic overexposure to free and reduced lunch students. Asians are slightly more likely than whites in their district to attend schools with fewer low-income students. The decomposition for 2010 indicates greater economic integration within school districts. Specifically, there is around a 50% reduction of within-district segregation for blacks and Hispanics. Yet, these seemingly positive strides were accompanied by widening gaps for blacks and Hispanics between districts. The differences between metropolitan areas (MSAs) did not explain much of the exposure to low-income students, relative to white students.

Table 3: Decomposition of the difference in the percentage of low-income schoolmates by ethnicity/race, 2000 and 2010.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference in the percentage of low-income classmates (Ref: whites)</td>
<td>42.2</td>
<td>40.3</td>
<td>38.3</td>
<td>35.5</td>
<td>9.1</td>
<td>5.5</td>
</tr>
<tr>
<td>Difference due to distribution of low-income students:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Across schools within districts</td>
<td>6.3</td>
<td>3.3</td>
<td>6.9</td>
<td>3.2</td>
<td>-2.6</td>
<td>-1.5</td>
</tr>
<tr>
<td>Across districts within MSA</td>
<td>31.6</td>
<td>34.9</td>
<td>31.3</td>
<td>32.1</td>
<td>8.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Across MSAs</td>
<td>4.3</td>
<td>2.0</td>
<td>0.1</td>
<td>0.2</td>
<td>3.2</td>
<td>1.6</td>
</tr>
</tbody>
</table>
Discussion

Our study examines demographic shifts in metropolitan Pennsylvania’s student population over a ten-year period and analyzes the degree that different groups are concentrated in schools that are segregated by race/ethnicity and income. By using a decomposition technique, we are able to consider the role district fragmentation may play in segregation by race and income. As such, our findings suggest Pennsylvania students are extremely segregated both by district and by school. Specifically, we find that the number of schools with concentrations of students grouped by race/ethnicity, and the number of students attending them, increased from 2000 to 2010. In terms of the measure of exposure in schools, black and white students were highly isolated in 2010. Secondly, we find that the typical black and Hispanic student attends a school with about two-thirds FRL students while the typical white student attends a school with about one-quarter FRL students. Further, our decomposition analyses indicate that black and Hispanic students are more likely to go to school with low-income students than are whites because of the concentrations of low-income students within school districts. Together these findings suggest that at the very least, fragmentation in Pennsylvania is not leading to more integrated districts and contributes to segregation.

The findings are especially noteworthy considering the arguments for the benefits of racial diversity for all students and given the many negative effects of attending segregated schools. Given the hyper-fragmentation of Pennsylvania’s school districts and the history of housing segregation between whites and blacks, the increasing segregation of black students is discouraging but not completely surprising. However, previous literature suggests that, for a number of reasons, Hispanic families tend to spatially assimilate into racially and economically diverse suburbs more than black families (South, Crowder, & Pais, 2008; Oliver 2010). Our findings indicate high segregation for Hispanic students as well, after almost doubling their share of enrollment over 2000-2010.

The segregation of ethnically and racially-defined groups gains added importance when examining this trend in relation to exposure across income groups. In the United States, there is a problematic association between poverty and ethnicity. On average, people of color, especially Hispanics and blacks, are more likely to live in poverty than whites (U.S. Census, 2012). The negative consequences of poverty on education become compounded due to persistent and increasing segregation (Goldsmith, 2011; Orfield, Kucsera, & Siegel-Hawley, 2012). Therefore, it is noteworthy that on average, white and Asian students are increasingly attending schools with low-income students but still attend schools with less than average percentages of FRL students. In line with previous studies (e.g., Holme & Finnegan, 2013), our results indicate that almost all of the segregation of blacks and Hispanics into low-income schools is occurring as a between-district phenomenon, compared to within-district and between metro areas.

This study has some limitations. First, we focus on statewide trends rather than individual metropolitan areas. However, the strength of our approach is to highlight trends in segregation by ethnicity and income throughout the state to show that segregation is not limited to only one area. Moreover, the decomposition allows us to gauge how much of the difference is attributable to the difference in metropolitan areas’ composition. In our other
research, we have more closely analyzed the trends in Philadelphia, Pittsburgh, and other metropolitan areas and found similar trends (Kotok & Reed, 2015). Another limitation of the study is that it does not fully account for demographic shifts. Although comparisons across time provide contextual data, future research should explore the effect of demographic changes on school segregation. Even considering these limitations, we think the decomposition illuminates a trend in which inter-district segregation is increasing while intra-district integration is also increasing at the school level. Finally, this study illustrates the value of quantitative approaches in locating and drawing attention to political mechanisms such as fragmentation that serve to segregate groups.

It appears that a possible solution that would be helpful in reducing school segregation would involve addressing fragmentation directly through integration between districts. The challenges to integration of U.S. public schools may appear daunting given the complexity of the issue and legal and political obstacles that have emerged. In recent years, Pennsylvania and federal courts have reduced aggressive enforcement of desegregation (e.g., Pennsylvania Human Relations Commission v. School District of Philadelphia, 1973; Milliken v. Bradley, 1974; Board of Education of Oklahoma v. Dowell, 1991; Parents Involved in Community Schools v. Seattle School District No.1, 2007), and individual and political will around the issue of integration seems dubious. Despite the formidable challenge, some metropolitan areas have developed and implemented innovative integration plans. For instance, Jefferson County, Kentucky (Louisville) now implements a controlled choice system, the Managed Choice Plan, for the entire county even after the Parents Involved decision discouraged them from pursuing such an approach. Omaha, Nebraska has created a Learning Community of twelve metro districts that encourages enrollment into diverse schools, and Hartford, Connecticut has implemented a voluntary urban-suburban integration program that includes inter-district cooperative grants, inter-district magnet schools, and an Open Choice program. In all three of these cases, communities believed that district-level fragmentation stifles educational opportunity and sought to develop a solution. Pennsylvania metro areas as well as the state should consider these and other alternatives to determine which programs could work well in their communities.

References


Segregation in Metro Pennsylvania Schools


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