

A Teacher Like Me Revisited: Effects of Student-Teacher Race/Ethnicity Matching on Students' Educational and Behavioral Outcomes

Background

Teachers play a critical role in various aspects of student development. Given that teacher quality influences students' short-term as well as long-term outcomes, including educational achievement and adult earnings (Chetty, Friedman, & Rockoff, 2014), researchers and policymakers have been interested in factors that contribute to high teacher quality and teacher effectiveness (Clofelter, Ladd, & Vigdor, 2006; Wayne & Youngs, 2003). One important factor that has more recently received increased attention from researchers and policymakers is the role of teacher race/ethnicity. Minority teachers who understand and share similar cultural backgrounds with students can serve as role models and elevate educational aspirations for minority students (Gershenson, Hart, Lindsay, & Papageorge, 2017; Villegas & Irvine, 2010). Further, minority teachers tend to have higher expectations and more favorable perceptions toward minority students (Gershenson, Holt, & Papageorge, 2016), which can lead to positive student development.

Our study extends this prior research and deepens our understanding of the effects of race/ethnicity matching on student outcomes in a number of ways. First, we investigate the effects of having a same race/ethnicity on multiple student outcomes, including educational achievement, disciplinary responses, and attendance. Second, by using statewide administrative data from the Indiana Department of Education (IDOE) on all students in grades three through five in Indiana, our study provides a population level look at the effects of race/ethnicity matching. Third, our data enable us to examine the effects of race/ethnicity matching on student outcomes for not only black and white but also Latinx students. Finally, we test whether the effect of race/ethnicity matching varies by gender.

Several theoretical perspectives lend support to the possible benefits of racial match. such theoretical framework is that of cultural congruence. In this view, having a deeper connection with and understanding of students' experiences and culture as people of color is an asset in promoting various student outcomes (Henry 1994; Hollins, 1982; Howard, 2003; Ladson-Billings and Henry, 1990). Another theoretical framework speaks to a possible role model effect. In this view, students are more likely to look up to teachers of the same race/ethnicity as role models, which enhances student motivation, confidence, and effort (Egalite & Kisida, 2018).

Research Questions

In this study, we examine two critical questions:

1. What are the effects of having a same race/ethnicity teacher on educational and behavioral outcomes?
2. Do the effects of having a same race/ethnicity teacher on student outcomes vary by gender?

Population Data

We use administrative data from the Indiana Department of Education (IDOE) from student in grades three through five from the 2010-2011 to 2016-2017 academic years. The data includes student demographic characteristics, standardized math and reading scores (i.e., Indiana Statewide Testing for Educational Progress-Plus (ISTEP+)), disciplinary records (i.e., number of

suspension and expulsion), and attendance records (i.e., unexcused absent days). In addition, the data include teacher demographic characteristics, years of teaching experience, and teacher educational attainment. Table 1 shows the characteristics of students and teachers in this study. Table 2 shows the percent of race/ethnicity matching between student and teacher both overall and by race/ethnicity.

Research Design

To investigate the effects of race/ethnicity matching on student outcomes, we use student fixed effects. The student fixed effects approach enables us to compare student outcomes in years when they have exposure to teachers of same race/ethnicity to those years in which they do not. In the case of math and ELA achievement, students are matched one-to-one with their corresponding math or ELA subject teacher. In the case of behavioral outcomes, students are matched one-to-one with their teacher from whom they receive instruction in the greatest number of subjects.

Results

Table 3 presents the effects of race/ethnicity matching on students' educational and behavioral outcomes. In Model 1, we find that when black students are assigned to black teachers, their math scores increased by .042SD. When Latinx students are assigned to Latinx teachers, their math scores increased by .097SD. For white students, however, race/ethnicity matching has no effect on math achievement. Model 2 indicates no significant effect on ELA achievement regardless of students' race/ethnicity.

Model 3 shows that when black students are assigned to black teachers, they are less likely to receive disciplinary actions (a .054 decrease). Interestingly, when Latinx students are assigned to Latinx teachers, they are more likely to receive disciplinary actions (a .046 increase). For white students, race/ethnicity matching does not lead to any significant effects on school disciplinary actions. Model 4 shows no significant effect of race/ethnicity matching on receiving more subjective forms of disciplinary actions. Finally, Model 5 finds no significant effect on the number of unexcused days absent for all students.

Table 4 presents that some of these effects are moderated by gender. Model 2 shows that the effect of race/ethnicity matching can be more beneficial for white male students' ELA achievement, though Model 1 shows that matching does not vary by gender for math achievement for any race. For black and Latinx students, there is no significant difference in ELA achievement by gender.

Model 3 reveals that matching effects on disciplinary outcomes are stronger (a .056 decrease) for black male students than black female students. By contrast, the effects of race/ethnicity matching on disciplinary outcomes do not vary by gender for Latinx and white students. Model 4 and Model 5 show that the effects of race/ethnicity matching do not vary by gender for both more subjective disciplinary outcomes and for the number of unexcused absences, respectively.

Conclusions

We find that math achievement increases when black students are assigned to black teachers. In addition, having a black teacher decreases the number of student disciplinary actions, and this association is larger for black male students. When Latinx students are assigned to Latinx teachers, interestingly, both math achievement and the number of disciplinary incidents

increase. For white students, however, having a white teacher does not make any difference on educational and behavioral outcomes.

References

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Table 1
Descriptive Statistics

	Mean	S.D.	Min	Max
Black student and black teacher matching	0.018	0.13		
Latinx student and Latinx teacher matching	0.003	0.06		
White student and white teacher matching	0.767	0.42		
Student Characteristics				
Black student	0.107	0.31		
Latinx student	0.116	0.32		
White student	0.781	0.41		
Female student	0.495	0.50		
Free or reduced-price lunch	0.481	0.50		
Special education	0.125	0.33		
English language learner	0.063	0.24		
Match achievement	0.043	0.96	-5.12	4.77
ELA achievement	0.037	0.96	-7.19	7.45
Number of discipline records	0.077	0.54	0.00	62.00
Number of defiance infraction	0.022	0.27	0.00	41.00
Number of unexcused absent days	1.732	3.28	0.00	106.00
Teacher Characteristics				
Black	0.032	0.18		
Latinx	0.009	0.10		
White	0.957	0.20		
Female	0.857	0.35		
Years of teaching experience	13.767	10.54	0.00	59.00
Master's degree	0.495	0.50		
N	1183882			

Table 2
 Percent of Race/Ethnicity Matching between Students and teacher for Overall and by
 Racial/Ethnicity Group

	Always Matching		Sometimes Matching		Never Matching	
	N	Percent	N	Percent	N	Percent
Overall	891,839	75.2%	81,210	6.9%	276,490	18.0%
Black	6,409	5.1%	33,342	26.3%	87,146	68.7%
Latinx	3,745	2.7%	8,746	6.4%	125,286	90.9%
White	885,439	95.6%	39,545	4.3%	807	0.09%

Table 3
Effects of Race and Ethnicity Matching on Student Outcomes

	Model 1 Math	Model 2 ELA	Model 3 Discipline	Model 4 Defiance	Model 5 Absent Days
Black student and black teacher	0.042* (0.017)	-0.005 (0.012)	-0.054* (0.021)	-0.030 (0.016)	0.033 (0.081)
Latinx student and Latinxx teacher	0.097*** (0.026)	0.031 (0.017)	0.046* (0.020)	0.016 (0.009)	-0.044 (0.112)
White student and white teacher	-0.025 (0.016)	0.013 (0.010)	-0.014 (0.012)	-0.010 (0.006)	-0.009 (0.063)
Female teacher	0.019*** (0.005)	0.021*** (0.004)	0.002 (0.002)	0.001 (0.001)	-0.009 (0.011)
Black teacher	0.031 (0.032)	-0.002 (0.019)	-0.025 (0.019)	-0.011 (0.011)	0.062 (0.103)
Latin teacher	-0.028 (0.035)	-0.024 (0.021)	-0.060* (0.024)	-0.026 (0.014)	0.129 (0.116)
White teacher	0.056 (0.031)	-0.009 (0.018)	-0.016 (0.022)	-0.006 (0.012)	0.156 (0.114)
Years of teaching experience	0.005*** (0.001)	0.004*** (0.000)	-0.001* (0.000)	-0.000 (0.000)	0.003 (0.002)
Years of teaching experience squared	-0.000*** (0.000)	-0.000*** (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
Teacher has a master's degree	0.005 (0.004)	0.000 (0.003)	-0.002 (0.002)	0.000 (0.001)	-0.010 (0.010)
Free or reduced-price lunch	0.001 (0.003)	0.000 (0.003)	0.001 (0.003)	-0.000 (0.001)	-0.015 (0.014)
English language learner	0.001 (0.005)	-0.026*** (0.005)	0.011*** (0.003)	0.002 (0.001)	-0.079** (0.025)
<i>N</i>	1183882	1183882	1183882	1183882	1183882
<i>R</i> ²	0.878	0.870	0.629	0.542	0.747

Table 4
 Varying Effects of Race and Ethnicity Matching on Student Outcomes by Students' Gender

	Model 1 Math	Model 2 ELA	Model 3 Discipline	Model 4 Defiance	Model 5 Absent Days
Black student and black teacher	0.052** (0.019)	-0.008 (0.014)	-0.027 (0.019)	-0.017 (0.012)	-0.035 (0.089)
Black student and black teacher X Male student	-0.021 (0.012)	0.005 (0.011)	-0.056* (0.025)	-0.026 (0.017)	0.139 (0.082)
Latinx student and Latinx teacher	0.113*** (0.028)	0.028 (0.019)	0.038 (0.020)	0.012 (0.009)	-0.037 (0.123)
Latinx student and Latinx teacher X Male student	-0.030 (0.019)	0.006 (0.019)	0.016 (0.019)	0.008 (0.008)	-0.014 (0.124)
White student and white teacher	-0.023 (0.017)	-0.001 (0.011)	-0.011 (0.012)	-0.006 (0.006)	0.016 (0.068)
White student and white teacher X Male student	-0.002 (0.010)	0.027** (0.010)	-0.005 (0.009)	-0.007 (0.004)	-0.050 (0.044)
Female teacher	0.019*** (0.005)	0.021*** (0.004)	0.002 (0.002)	0.001 (0.001)	-0.009 (0.011)
Black teacher	0.031 (0.032)	-0.002 (0.019)	-0.026 (0.020)	-0.011 (0.011)	0.064 (0.103)
Latin teacher	-0.028 (0.035)	-0.024 (0.021)	-0.061* (0.024)	-0.026 (0.014)	0.133 (0.116)
White teacher	0.056 (0.031)	-0.009 (0.018)	-0.018 (0.022)	-0.006 (0.012)	0.159 (0.114)
Years of teaching experience	0.005*** (0.001)	0.004*** (0.000)	-0.001* (0.000)	-0.000 (0.000)	0.003 (0.002)
Years of teaching experience squared	-0.000*** (0.000)	-0.000*** (0.000)	0.000* (0.000)	0.000 (0.000)	-0.000 (0.000)
Teacher has a master's degree	0.005 (0.004)	0.000 (0.003)	-0.002 (0.002)	0.000 (0.001)	-0.010 (0.010)
Free or reduced-price lunch	0.001 (0.003)	0.000 (0.003)	0.001 (0.003)	-0.000 (0.001)	-0.015 (0.014)
English language learner	0.001 (0.005)	-0.026*** (0.005)	0.011*** (0.003)	0.002 (0.001)	-0.079** (0.025)
<i>N</i>	1183882	1183882	1183882	1183882	1183882
<i>R</i> ²	0.878	0.870	0.629	0.542	0.747

