

# The Effects of Student-Teacher Race Congruency on Student Feelings of Stereotype Threat

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## ABSTRACT

Stereotype threat has been shown to adversely affect performance in academic sectors; therefore, it is imperative to pinpoint factors that increase or reduce feelings of stereotype threat in order to work toward building solutions. Considering that the current literature is limited on the topic of racial stereotype threat in education, this study aims to evaluate whether the presence of student-teacher race congruency can impact feelings of stereotype threat in high school students of color. A digital survey was created using modified Stigma Consciousness Questionnaire measures, and a causal-comparative inquiry method was employed to compare the resulting data between three different racial or ethnic groups.

## Introduction

Racial achievement gaps have long remained a prevalent topic in the field of education. The term “racial achievement gap” refers to discrepancies in the academic performance of students from different racial backgrounds, with notably lower scores amongst Black or Hispanic students relative to scores seen from white students (Elliot, 2020); although reports by Stanford’s Center for Education Policy Analysis (CEPA) demonstrate that racial achievement gaps have lessened slightly over the past few decades, the disparity in performances between students of color and their white peers remains substantially wide both nationally and in individual states (*The Educational Opportunity Monitoring Project*, 2014). In fact, an analysis conducted by the National Assessment of Educational Progress (NAEP) corroborates CEPA’s findings and reveals that academic score gaps range from 0.5 to 0.9 standard deviations as of 2013 (*Achievement Gaps*, n.d.).

There is a plethora of scholarly debate regarding the reasons behind this racial achievement gap. Some scholars place emphasis on the intersection between racial and socioeconomic factors, arguing that opportunity gaps create systemic educational inequalities that result in a steep performance gap (Mooney, 2018; Schmidt et al., 2015). Other scholars offer a psychological perspective that points to cultural discontinuity as the reason for racial achievement gaps— for instance, a study done by Anna Egalite and Brian Kisida, both established researchers in education policy, mentions that “cultural differences between teachers and students of different backgrounds may affect instructional techniques that could put students at a disadvantage” (Egalite & Kisida, 2018). This idea that cultural discontinuity exacerbates the achievement gap is also supported in an article from the *American Educational Research Journal*, “Student-Teacher Race Congruence: New Evidence and Insight From Tennessee”, which states that a race-congruent teacher “may possess a better understanding of a students’ abilities, experiences and beliefs... and demonstrate this understanding through culturally competent practices” (Joshi et al., 2018). Additionally, both studies mention a cultural role model effect that occurs when students raise “academic motivations and aspirations when exposed to a demographically similar person in a position of authority”; their research suggests that general cultural disconnect along with an absence of role model effects have a hindering effect on minority student performance. Amidst various

theories though, one phenomenon has risen as a prominent explanation for today's enduring racial achievement gap: stereotype threat.

According to the American Psychological Association (APA), stereotype threat is defined as “an individual's expectation that negative stereotypes about his or her member group will adversely influence others' judgments of his or her performance and that a poor performance will reflect badly on the member group” (*Stereotype Threat*, n.d.). The phrase “member group” can encompass numerous facets of one's identity, but the first study to examine stereotype threat in relation to racial groups was Claude Steele and Joshua Aronson's “Stereotype Threat and the Intellectual Test Performance of African-Americans” (Steele & Aronson, 1995). In their original experiment, Steele and Aronson (1995) set up stereotype threat and non-stereotype threat environments when giving groups of black and white college students the Graduate Record Exam (GRE). Students in the stereotype threat environment were told that the GRE would diagnose intellectual ability, while students testing in the non-stereotype threat condition were told that the exam was simply a problem-solving task that did not indicate anything about an individual's abilities. The researchers discovered that “in stereotype threat conditions, blacks- who were matched with whites in their group by SAT scores- did less well than whites. In the non-stereotype threat condition... Blacks' performance rose to match that of equally skilled whites” (Steele & Aronson, 1995). This leading study has since been affirmed and cited by the esteemed APA to explain how stereotype threat is a contributing factor to the racial achievement gap (*Stereotype Threat Widens Achievement Gap*, 2006). Though it may not be the sole cause of an imbalance in scores, it is clear that stereotype threat possesses the ability to affect academic performance, thereby posing an obstacle to bridging the score gap; since stereotype threat does exacerbate the racial achievement gap, it is vital to explore ways to reduce this damaging phenomenon amongst students of color.

## Implicit Bias

Unconscious bias, otherwise known as implicit bias, is pervasive in that it is both subconscious and automatic in nature (Warikoo et al., 2016). The psychological tendency was originally designed to aid humans in making snap judgments for survival purposes; however, implicit biases have grown to hold the unintended consequence of amplifying stereotyping behaviors and subsequent levels of stereotype threat. It is important to note that this type of bias differs greatly from one's explicit thoughts or beliefs— even those who claim to hold egalitarian racial attitudes are not exempt from unknowingly carrying implicit biases that influence one's everyday actions and nonverbal signals (Gershenson & Dee, 2017). Furthermore, implicit bias is hard to control. One peer-reviewed article written by Brian Nosek, Carlee Hawkins, and Rebecca Frazier, all professors working in the department of psychology at the University of Virginia, states that the majority of individuals are not be able to quell implicit biases if they are “temporarily depleted after another demanding task, engaged in promotion-oriented processing styles that rely more on automatic responses, have low levels of impulse control, or even just do not know how to undo the influence” (Nosek et al., 2011). Again, since unconscious bias is highly difficult to regulate, one must also recognize that awareness training or similar bias training is likely not enough to eliminate implicit bias or stereotype threat.

## Implicit Bias and Racial Mismatch

In the context of classrooms, managing and teaching students is a task that demands almost constant cognitive attention from educators; hence, it can be difficult for teachers to dedicate the intense amount of cognitive effort necessary to repress unconscious biases, specifically racial ones. It follows that racial mismatch, or a lack of race congruence, between students of color and teachers creates an easy environment for implicit racial bias to manifest in various ways, with one prominent result being lower teacher expectations of minority students (Warikoo et al., 2016; Holt et al., 2016). The effect is especially harmful when considering an article published by Stanford's Center of Education Policy Analysis— it emphasizes that exposure to implicit bias can “trigger self-fulfilling prophecies by changing stereotyped groups' behaviors to conform to stereotypes... even when the stereotype was initially untrue” (Gershenson & Dee,

2017). Since implicit bias promotes self-reinforcement of external stereotypes, it is likely that lower teacher expectations lead to lower student self-efficacy and academic performance as well, perpetuating academic racial achievement gaps. Overall, a lack of race congruence may lead to heightened effects of implicit bias— this ultimately produces detrimental ramifications for students of color by inviting the presence of stereotype threat, consequently worsening their performance in educational settings.

## Stereotype Threat and Race Congruency

There is currently an abundance of literature that exists about stereotype threat within the educational field. That being said, the vast majority of stereotype threat texts focus on gender and sex— especially in the context of STEM education— as is the case in studies such as “Gender Role Attitudes and Stereotype Threat in Same-Sex and Mixed-Sex Competitive Conditions Among University Students” or “Academic Procrastination in STEM: Interactive Effects of Stereotype Threat and Achievement Goals” (Salik & Kamal, 2009; Deemer et al., 2014). Racial stereotype threat research in particular has mainly examined the idea of race centrality, or the “extent to which race is a central aspect of an individual’s self-definition”, in relation to its impact on academic performance in various conditions, as well as whether or not one’s personal connection to racial identity is able to control stereotype threat effects (Okeke et al., 2009). One study titled “Shades of Threat: Racial Identity as a Moderator of Stereotype Threat” specifically explores the intersection between Black or African American middle school student academic performance, stereotype threat, and outlooks towards racial identity by building off of Steele and Aronson’s original stereotype threat experiment (2006). In this study, students first established the strength of their attitudes toward racial identity by using the Black Racial Identity Attitudes Scale, then participants were assigned to take the GRE exam in high, medium, and low stereotype threat environments. After the study was complete, researchers concluded that “internalization attitudes moderated performance in the low stereotype threat condition but not in the high threat conditions... the influence of individual differences in attitudes will be weak when situational demands are strong”, meaning that although a high degree of racial in-group belonging helps reduce negative academic performance effects of stereotype threat in settings with low stereotype threat, it is ultimately not enough to reduce effects in environments with stronger stereotype threat conditions (Davis et al., 2006). Student-teacher race matching literature is highly concentrated in the investigation of score or test-based outcomes, though more recent race-congruence studies have branched out to evaluate academic attitudes, student perceptions of teachers, and differences in disciplinary measures (Egalite & Kisida, 2018; Lindsay & Hart, 2017).

Despite the quantity of publications that assess the academic effects of racial stereotype threat and student-teacher race congruency separately, little to no studies have attempted to explore connections between the two factors, particularly not in high school populations or amongst a wider range of racial groups. The lack of research surrounding this topic indicates a gap in the literature, which prompts the research question “What is the level of stereotype threat felt by students when there is racial congruence between high school students and teachers of color?” Due to the adverse effects that stereotype threat poses in terms of the racial achievement gap and overall academic performance, it is necessary to devote attention to the relationship between stereotype threat and student-teacher race congruency in order to determine whether or not same race assignment is able to reduce feelings of stereotype threat within students of color.

## Methods

This study employs the use of a causal-comparative inquiry method; the design of a causal-comparative study is non-experimental, and it compares two or more groups in order to determine if a cause-and-effect relationship exists between an independent and dependent variable. The aim of this study is to establish whether race congruency between teachers and students of color, the independent variable, impacts the amount of stereotype threat felt by students, the

dependent variable. This goal aligns with the causal-comparative method because it is classified as “ex post facto” research, or research that takes place after independent variables have occurred and cannot be manipulated (Salkind, 2010). Here, student-teacher assignment has already been completed prior to the research process, thus, the independent variable is unable to be changed or controlled. Another component of causal-comparative research is the combination of qualitative and quantitative elements, something that is also seen in this study’s method of data collection—qualitative features appear in the form of race centered questions, while quantitative data is present in the numerical ratings that indicate level of agreement to various statements. Overall, the causal-comparative research design fits the purpose of this study by allowing for the comparison of stereotype threat levels felt by students of different racial groups when student-teacher race congruency is present vs. not present.

## Participant Selection

An online survey was used and distributed to Michigan students of color with Asian, Black or African American, and Hispanic or Latino backgrounds to collect data for the study. Michigan was chosen because it is a state with racial achievement gaps that have “generally been larger than a standard deviation over the last decade, regardless of grade or subject” according to the CEPA (*The Educational Opportunity Monitoring Project*, 2014). Requests for survey distribution were carried out by emailing the principals of around 70 Michigan public high schools and by contacting various Michigan educator Facebook groups. A consent statement was placed at the start of the survey, ensuring that all participants were aware of the anonymous nature of their survey responses, the length and purpose of the survey, along with their right to withdraw from the survey at any time without penalty. A few requirements were put in place to maintain consistency across participants; in order to qualify for taking the survey, respondents must be students of color, enrolled in a public high school, and have a race congruent teacher as well as a white teacher, both of whom must teach either a world language or any core subject— specifically mathematics, English, social studies, or science.

## Survey Design

The survey was built using Google Forms, and it was created based off the existing Stigma Consciousness Questionnaire (SCQ), a measure designed to be adjustable for different stereotyped groups. The author of the SCQ is Elizabeth Pinel from the Department of Psychology at the University of Texas in Austin; Pinel (1999) concluded that reliability analyses averaged a Cronbach’s Alpha— a tool used to measure the internal consistency of a scale or test— of 0.77, which is a confirmation of the questionnaire’s reliability as values above 0.7 indicate acceptable internal consistency (Pinel, 1999). In this study, demographic questions regarding a participant’s gender and racial or ethnic background were combined with shortened modified SCQ measures to accommodate students of color. The resulting survey is comprised of the following items:

Table 1. Survey questions

<b>Introductory Questions</b>
Which of the following best describes your race or ethnicity?
What subject does your race congruent teacher teach? Please select one
What subject does your white teacher teach? Please select one
Have stereotypes about your race or ethnicity affected you personally?

Table 2. Modified SCQ survey measures

<b>Measures Rated Once in Reference to a Race Congruent Teacher and a White Teacher</b>
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I never worry that my behaviors will be viewed as a stereotypical behavior of my race
My race does not influence how my teacher acts with me
I almost never think about my race when I interact with my teacher

Each SCQ item uses a 7-point Likert scale that ranges from 1 Strongly Disagree to 7 Strongly Agree, providing a standard set of responses that allow participants to specify the extent to which they agree with each statement. Likert scales can be defined as psychometric scales that are “designed to measure attitudes, opinions, and perceptions... often the categories are coded numerically” (Jamieson, 2017). Participants complete SCQ items once for a same-race teacher, then a second time for a white teacher— this is done so that the stereotype threat felt by a student with a race congruent teacher can be compared to the stereotype threat felt by a student when there is a lack of race-congruency. After data is gathered, unpaired t-testing will be used on each SCQ statement to analyze the statistical significance of the survey data. T-tests are used to produce p-values that assess the probability of results happening by chance and whether a significant difference exists between the means of distinct groups (Siegle, n.d.).

## Hypotheses

The current literature surrounding implicit bias and stereotype threat appears to indicate that a lack of race-congruency leads to stereotype threat environments. Based on those findings, I formed three hypotheses. (1) For the “I never worry that my behaviors will be viewed as a stereotypical behavior of my race” statement, the p-value will reflect lower feelings of stereotype threat with a race-congruent teacher across Asian, Black or African American, and Hispanic or Latino students. (2) For the “my race does not influence how my teacher acts with me” statement, the p-value will reflect lower feelings of stereotype threat with a race-congruent teacher across Asian, Black or African American, and Hispanic or Latino students. (3) For the “ I almost never think about my race when I interact with my teacher” statement, the p-value will reflect lower feelings of stereotype threat with a race-congruent teacher across Asian, Black or African American, and Hispanic or Latino students.

## Results

After posting and opening the survey for a three-week period, a total of 325 responses were garnered. Of these, 296 responses are from Black or African American students, 25 are from Asian students, and 4 are from Hispanic or Latino students. Excel unpaired t-tests were used to calculate means and p-values for each racial group’s responses to the SCQ items; a p-value between 0 and 0.05 is highly significant and it demonstrates that less stereotype threat was felt in the presence of a race-congruent teacher over a white teacher. A p-value outside of the 0 to 0.05 range indicates that means are similar between responses referencing a race-congruent teacher and responses that reference a white teacher, thus, the amount of stereotype threat felt is also approximately the same regardless of student-teacher race congruence.

Table 3. SCQ Statements and *p*-values

Racial Group	I never worry that my behaviors will be viewed as a stereotypical behavior of my race		My race does not influence how my teacher acts with me		I almost never think about my race when interacting with my teacher	
	<i>p</i> -value	Significance	<i>p</i> -value	Significance	<i>p</i> -value	Significance

Asian	0.4697	Not significant	0.4721	Not significant	0.0553	Significant
Black/African American	0.4339	Not significant	0.1379	Not significant	0.0130	Significant
Hispanic/Latino	0.3620	Not significant	0.4082	Not significant	0.5000	Not significant

## Discussion

The aim of this study was to compare the amount of stereotype threat felt by students of color with a race-congruent teacher versus a white teacher in order to determine whether student-teacher race congruency lowers feelings of stereotype threat. As shown in Table 3 above, only the “I almost never think about my race when I interact with my teacher” statement revealed significant p-values of 0.05 and 0.01 for Asian and African American or Black students respectively, thereby demonstrating lower feelings of stereotype threat with race-congruent teachers in Asian and African American or Black students, but not in Hispanic or Latino students. The “I never worry that my behaviors will be viewed as a stereotypical behavior of my race” statement reflects no change in feelings of stereotype threat with a race-congruent teacher versus a white teacher in Asian students, Black or African American students, and Hispanic or Latino students. Finally, the “my race does not influence how my teacher acts with me” statement also reflected no change in feelings of stereotype threat with a race-congruent teacher versus a white teacher in Asian students, Black or African American students, and Hispanic or Latino students.

This study’s findings do not support the initial hypotheses, as hypothesis one, hypothesis two, and hypothesis three each stated that all SCQ statements would reflect lower feelings of stereotype threat with race-congruent teachers in Asian students, Black or African American students, as well as Hispanic or Latino students. Contrary to expectations, the study’s results point to evidence that the relationship between student-teacher race congruency and lessened feelings of stereotype threat is minimal or non-existent across the three racial or ethnic groups tested. The fact that students did feel a similar level of stereotype threat with both their white and race-congruent teachers may be influenced by variables such as individual race centrality, which, as was discussed in the introduction, is shown to impact feelings of stereotype threat depending on setting and one’s degree of connection to his or her racial group.

Though findings ultimately do not prove a conclusive link between student-teacher race congruency and reduced stereotype levels in students of color, this research still contains important implications and can act as a gateway study for continued evaluation of the effect of student-teacher race congruency or race-matching on general stereotype threat feelings in students. Assuming sufficient validity of this study’s results and keeping in mind that the statistical significance of this link does not extend to the Hispanic or Latino student racial group, the P-values in Table 3 show a positive relationship for one SCQ statement where there are lowered feelings of stereotype threat with a race congruent teacher over a white teacher. This small but significant aspect of the results indicates that future studies should further evaluate these two factors, seeing as statistically significant supplemental studies are necessary to properly verify a single study’s validity.

## Limitations

The unequal distribution of respondents across the Asian, Black or African American, and Hispanic or Latino student groups does restrict this study's ability to create conclusive generalizations about populations. Out of a total of 325 survey responses, over 75% came from Black or African American students while just over 7% and 1% came from Asian and Hispanic or Latino students, respectively. This variation poses a limitation in terms of analyzing and comparing the statistical significance of group survey data. For the purposes of this study, the number of participants in each student racial group was still large enough to formulate reliable p-values; that being said, future researchers would benefit from working with larger, equal group sample sizes in order to reach more conclusive results.

Another limitation of this study is the fact that high school students are assigned to numerous teachers, some of whom could share the same racial or ethnic background. In other words, a student may have multiple race-congruent teachers or multiple white teachers, but this study's SCQ measures require respondents to refer only to one race-congruent teacher and one white teacher when completing the survey. Although this study focuses on teacher race as a common factor in evaluating racial stereotype threat, individual implicit bias and subsequent stereotype threat naturally varies even amongst teachers of the same race; therefore, students may or may not have given entirely different responses to the SCQ measures had they selected another race-congruent teacher or white teacher to reference. This factor cannot truly be avoided due to the nature of high school student-teacher assignments, nevertheless, it is still a factor to consider when interpreting final survey data results.

## Conclusion

Although research was done with the original hypotheses that predicted lowered feelings of stereotype threat when high school students of color are assigned to race-congruent teachers, this study found that the presence of student-teacher race congruency had no statistically significant impact on stereotype threat. The conclusions drawn from this study add to the body of knowledge by showing that student-teacher race congruency does not alter stereotype threat feelings, which indicates that factors outside of student-teacher race must be studied in the interest of locating specific variables that can successfully lower stereotype threat feelings in students of color. Such continued studies are necessary in order to take greater strides towards closing the achievement gap and to help all students reach their full academic potential.

## Future Directions

As discussed in an earlier "limitations" section, this study suffers from a lack of comparable group populations and small sample sizes— this is a key restriction that necessitates further research to either disprove or support the results of the current investigation. In order to gain stronger validity and produce conclusive findings, future similar studies would benefit greatly from an increase in sample sizes, especially for the Asian and Hispanic or Latino student populations that were notably smaller in this report.

Another aspect of this topic that could be analyzed is the intersection between student-teacher race congruency, student-teacher gender matching, and student feelings of stereotype threat. Race congruence alone was found to have little connection to reduced feelings of stereotype threat in this study. By observing feelings of stereotype threat when race-matching is placed in conjunction with student-teacher gender congruency though, future research could build on the findings of this study and discover if aligning two important factors of identity—that is, both race and gender— in student-teacher pairs would then result in lower stereotype threat for high school students.

Other avenues for additional research could include changes in duration of the study. For instance, future researchers may conduct longitudinal studies that track feelings of stereotype threat and student teacher race-matching over the course of a student of color's academic career, beginning from the start of primary school and closing with the end of high school. A long-term study would allow researchers to explore whether students fluctuate in feelings of stereotype threat from childhood to adolescence, and it allows students to measure their feelings of stereotype threat

with multiple race-congruent teachers as opposed to merely one race-congruent individual. The fact that students would measure stereotype threat with numerous race-congruent educators also helps to remedy an aforementioned limitation about the nature of student-teacher assignment by eliminating the need to choose a single teacher; therefore, this is one worthwhile option for continuing to explore ways to lower feelings of stereotype threat in students.

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