The Relationship Between Teachers' Implicit Racial Attitudes and Their Labeling of Classroom Behavior

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Abstract

This study seeks to examine the connection between teacher implicit racial attitudes and how teachers label classroom behavioral disruptions. Grounding the research in attribution theory, which humans use in order to make sense of others' behavior through beliefs about locus of causality, stability, and controllability, the current study examined whether there was a correlation between the racial bias section of the Implicit Associations Test (IAT) and differences in attributions of Black and white teacher education students to explain challenging behaviors in the classroom. Specifically, this study sought to determine if teacher education students who scored higher on the IAT would assign higher levels of internal causality and controllability for Black students than White students. Seventeen undergraduate and graduate teacher education students from an urban university with an average age 27.4 years participated in this study. The findings of this study are inconclusive as there were several limitations to this pilot study; however, they also indicate that there may be greater statistical power with a larger sample.

Keywords: *classroom, behavior, implicit bias, race, teacher*

This study seeks to examine the connection between teacher implicit racial attitudes and how teachers label classroom behavioral disruptions. There is a wealth of both theory-based and empirical research on implicit racial biases as well as on how labeling classroom behavior impacts student outcomes in the classroom (e.g., Gregory et al., 2016; Little & Welsh, 2019; Riddle & Sinclair, 2019; Skiba et al., 2011; Weiner, 2012; Warikoo et al., 2016). However, there is a lack of empirical evidence regarding the mechanisms through which these implicit attitudes may affect what happens in the classroom. Scant research exists pairing this social psychological concept with educational research on how these attitudes may shape teacher reaction to classroom behavior (Warikoo et al., 2016). Previous research on teacher attitudes toward classroom behavior has focused on explicit attitudes, as implicit attitudes are hard to measure since they are outside of the realm of consciousness. However, these implicit attitudes may hold the key to a new way of understanding teacher-student relations. This study seeks to extend our understanding of how teacher attitudes affect teacher-student relationships by examining the relationship between teachers' implicit racial attitudes and the labels they attach to disruptive behavioral challenges in the classroom.

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With presumably little knowledge of how students' culture may affect their learning, such as how family structure affects attitudes toward school or how cultural communication patterns affect classroom participation, teachers may deal with student behavioral challenges in the classroom through a deficit-oriented paradigm, using their implicit knowledge stereotype beliefs to guide their decisions (Amatea et al., 2012; Little & Welsh, 2019; Okonofua & Eberhardt, 2015; Riddle & Sinclair, 2019). For example, this connection can be seen through student characteristics that teachers attribute to both students' success and failure to in the classroom, which can inform how teachers both label and direct student behavior in the classroom (Baldwin et al., 2007; Little & Welsh, 2019; Okonofua & Eberhardt, 2015; Riddle & Sinclair, 2019). These labels and directions are guided by implicit belief systems and attitudes, which exist in unconscious thought. They drive behavior without conscious awareness of the person holding them; these then drive explicit behavior (Okonofua & Eberhardt, 2015; van den Bergh et al., 2010). However, in teachers, these attitudes can be revealed in the perceptions of students' abilities, labeling of classroom behavior, and responses to that behavior.

Attribution Theory

The crux of attribution theory is that humans seek to make meaning out of information they receive verbally or visually from others, and they do that by way of attributing factors to others' behavior in order to make sense of it. That understanding then prompts action from the attributor and allows for prediction of future behavior (Hunter & Barker, 1987; Weiner, 2000). Weiner (2000) distinguishes between an *intrapersonal* theory of attribution, which is the attempt to understand oneself and the environment to explain causes of personal outcomes and drive future personal behavior, and an *interpersonal* theory of attribution, in which one seeks to understand the causes of *others'* behavior and environment in order to explain those actions and outcomes of the other. He states: "This social environment includes peers, teachers, and parents who experience happiness and sadness given the performance of others, who express anger and sympathy, and who reward, punish, help, or neglect" (Weiner, 2000, p. 23). The focus of the current study will be on the *interpersonal* theory of attribution, specifically in a classroom situation, where teachers seek to understand why students succeed or fail (Weiner, 1979).

The key to attribution theory is that causation is in the eye of the beholder; humans *perceive* causes for both themselves and others regardless of what the reality is (Hunter & Barker, 1987). This means that in *interpersonal* attribution there may be a difference in perception of causes between the actor and the observer, leading to a conflict between teacher and student in the classroom (Hunter & Barker, 1987).

Attribution theory focuses on three dimensions: locus of causality, stability, and controllability. Locus of causality is where the action begins, either internal or external to the person (Weiner, 1979; Weiner, 1985; Weiner, 2000; Weiner, 2007; Weiner, 2012). Stability is whether or not a cause can change; actors ask themselves whether or not what they can expect in the future is the same as what happened in the past (Hunter & Barker, 1987; Weiner, 2000). Stability comes in two dimensions: stable and unstable. Stable causes remain consistent over time, whereas unstable causes may or may not be present at any given time. Controllability refers to whether or not a person can willfully direct the cause of an event (Weiner, 1979; Weiner, 1985; Weiner, 2000; Weiner, 2007; Weiner, 2012). Controllability is also seen as moral responsibility, meaning that "individuals 'ought' to try hard, and they tend to be rewarded or punished to the extent that they exercise this responsibility" (Graham, 1988, p. 12).

If a teacher views a student as being in control of his or her behavior and a negative event occurs, the teacher may view the student as actively responsible for the event (controllable) as opposed to a passive object of the event (uncontrollable) (Beckman, 1970; Graham, 1988; Hunter & Barker, 1987; Weiner, 2000). An example of a controllable characteristic is effort; an example of an uncontrollable one is ability (Weiner, 1979; Weiner, 1985; Weiner, 2000).

The teacher's reaction to the student's behavior is then a result of attribution based on these three dimensions, which may result in one of two ways. If the teacher views the student as responsible for the event (internal locus of causality or belief in controllability), the teacher is likely to respond to the student with anger, which often leads to punishment. This is in contrast to a teacher responding with sympathy to the student if the student is viewed as having either an external locus of causality or as lacking controllability, which may lead toward prosocial feedback such as offers of help (Graham, 1988; Hunter & Barker, 1987; Weiner, 2000; Weiner, 2007).

Causality beliefs, according to attribution theory, explain current emotional states as well as future behavior (Weiner, 2000; Weiner, 2007; Weiner, 2012). Research has shown that teachers' views of student behavior, such as academic and behavioral attributions, affect how they treat students in the classroom (Little & Welsh, 2019; Riddle & Sinclair, 2019). Teachers' application of interpersonal attributions to students' behaviors affects students' intrapersonal theories of attribution (Beckman, 1970; Hunter & Barker, 1987). For example, if a teacher becomes angry at a student for failing a test because the teacher views the student as having high ability (an uncontrollable, internal, and stable trait), this may communicate to the student that he or she is responsible for the failure due to low effort, and it is a personal failure which may induce in the student either guilt or learned helplessness (Graham, 1988; Weiner, 2000). Weiner (2007) explains, "Emotions are social phenomena…and have social consequences. Sympathy promoting giving help and anger increasing aggressive actions are two emotions that play essential roles in social motivation" (p. 76).

This information shapes students' intrapersonal attribution belief system (Graham, 1988). For example, if a teacher expresses sympathy toward a student because he or she believes the cause of a student's behavior is uncontrollable, the teacher may be sending a cue to a student not just that the teacher believes the behavior is uncontrollable, but also that he or she actually doesn't have the ability to control his or her behavior (Graham, 1988; Beckman, 1970; Weiner, 2012). This then shifts the intrapersonal belief system through social transmission. It is vital that teachers be aware of their interpersonal attributions and the effect they have on classroom emotions and student intrapersonal attributions. Graham (1988) found evidence that children are better able to predict future success when they attribute causes to stable internal traits, and that students expect more blame from teachers when they view a cause as controllable.

Beckman (1970) sought to replicate previous findings that teachers tend to attribute student successes to teachers' abilities and attribute student failures to the student's abilities. She found evidence among her 56 pre-service teacher education students to support her hypothesis. Specifically, she found that when presented with two students, one who consistently did well and one who initially failed but either improved or didn't over time, that teachers attributed successes to their own teaching abilities and failures to the student's lack of ability (Beckman, 1970). How teachers attribute academic success and failure in the classroom may then have an impact on how teachers treat behavioral issues in the classroom; if teachers already attribute academic failure to personal factors, could they also be attributing behavioral issues to personal factors, specifically implicit racial attitudes, as well?

Racial Attitudes and Attribution Theory

Causal attributions can ultimately lead to negative attitudes toward individuals in a group, such as the members of a particular race. Race matters in the classroom, whether it's examining it directly, understanding it in terms of social and educational structures, or through the push for multicultural education (Carter & Goodwin, 1994). Researchers have found that teachers often treat children of color differently in the classroom, particularly through exhibiting negative attitudes and low expectations toward those students. These attitudes are communicated both verbally and nonverbally, as well as through increased discipline, which may in turn have a negative effect on both short- and long-term educational outcomes (Balfanz et al., 2015; Bates & Glick, 2013; Carter & Goodwin, 1994; Frankenberg, 2012; Little & Welsh, 2019). These negative attitudes may be a direct function of interpersonal attributions teachers have toward student outcomes.

Research has consistently shown that teachers hold lower standards for African American students both academically and behaviorally, and they are prone to give unfavorable ratings to African American students' behavior, personality, and motivation measures (Chang & Demyan, 2007; Chang & Sue, 2003; Okonofua & Eberhardt, 2015). Research has also shown that teachers' views of student behavior affect how they treat students in the classroom (Chang & Demyan, 2007; Chang & Sue, 2003; Little & Welsh, 2019). While some of this may be due to the sociohistorical failure of African American students in the school system, some may also be due to both implicit and explicit bias (Little & Welsh, 2019).

Chang & Sue (2003) sought to determine if teachers' labeling of student behavior varied stereotypically by race. The researchers asked 193 teachers (83% female, 74.1% Caucasian) to respond to vignettes and found a statistically significant effect in teachers' labeling African American students as predominantly acting out in behaviors that they attributed to a lack of controllability (Chang & Sue, 2003). The researchers also found a significant main effect in race when they examined behavior attribution for locus of causality, stability, and controllability (Chang & Sue, 2003). When Chang and Sue (2003) asked teachers what they thought the primary cause of the child's behavior was, 40.9% said personality factors, which by Weiner's (1979) definition are internal, unstable, controllable factors when viewed through the lens of attribution theory.

Teachers may assume that their judgments aren't biased, but they may still harbor negative racial views at the implicit/unconscious level. This is as opposed to views held at the explicit level, which are attitudes activated after the person has time to think through actions and rationalize them (Glock & Krolak-Schwerdt, 2014). Explicit and implicit attitudes are both a direct function of beliefs and they both drive behavior. Research suggests that teachers' implicit racial attitudes have an effect on how they work with their students in the classroom, as their attributions of students' behavior may in turn affect the teachers' behavior toward their students. These attributions may be affected by implicit attitudes, but this may also be a bidirectional relationship where implicit attitudes also affect attributions. Ultimately, these implicit attitudes affect both verbal and nonverbal behavior of teachers toward students, which in turn may lead to negative educational outcomes such as removal from the classroom.

Attitudes, both explicit and implicit, are cognitive functions that affect choices, resulting in specific behaviors (Fishbein, 1966; Yang & Montgomery, 2013). Regarding race, these attitudes may influence behavior that sends messages about how they feel toward their students and what they expect out of their students regarding classroom behavior, educational outcomes, and educational attainment. How teachers view students, positively or negatively, potentially has an effect

on student performance on subject tests (Dee, 2005). Dee (2005) used data from the National Educational Longitudinal Study (beginning in 1988, known as NELS:88) with nationally representative 8th grade students to examine demographically similar and disparate teacher/student relationships and how this affected student outcomes, specifically seeking to find if students who were assigned to a teacher of similar racial background, that they received better subjective evaluations of classroom behavior and overall academic performance scores than students who were assigned to a teacher of a different race. Additionally, Dee (2005) found that when there was a racial mismatch between teacher and student, the chance that the student was labeled as disruptive was 1.36 times larger than a racial match; this outcome was mirrored in odds done on teachers labeling students as inattentive and on perceived levels of homework completion (Dee, 2005). The researcher then found that when teachers viewed students negatively as measured by students' class disruption, inattentiveness, and lack of homework completion, students performed significantly lower on their subject-specific tests (Dee, 2005).

Research Questions and Hypotheses

The current study builds on findings indicating that implicit racial attitudes affect behavior. More specifically, we posit that teachers' implicit racial attitudes influence their perceptions and responses to students' behavior and address the research question: How are teacher education students' implicit racial attitude scores on an implicit bias test related to perceptions about student behavioral challenges in the classroom? This study hypothesizes that teacher education students who score higher on the racial bias implicit bias test will attribute internal causality and controllability to explain challenging behaviors in the classroom more frequently for Black students than for white students.

Method

Participants

The study population comprised 17 teacher education students enrolled in classes at a public university. Participants were undergraduate (n=9) and graduate (n=8) teacher education students from an urban university, and they ranged in age from 20 to 58 (average age 27.4 years). There was a mix of preservice teacher candidates (n=14) and in-service teachers (n=3) seeking continuing education as required by the state. Participants were recruited online through social media platforms and email with the goal of a snowball sampling procedure; a total of 43 participants were recruited and filled out some portion of the study, but only 17 completed all three measures discussed below. Table 1 displays the characteristics of the sample.

Table 1: *Characteristics of the Sample*

Characteristic	(*n* = 17)
Average Age in years	27.4
Gender	
Male	2
Female	15
School Level	
Undergraduate	9
Graduate	8
Average time completed in program in semesters	3.4
Teaching status	
Preservice	14
In-service	3

Measures

Implicit Associations Test

The Implicit Associations Test (IAT), originally created by Greenwald, McGhee, and Schwartz (1998), examines associations between a pair of dichotomous descriptor words and a construct. The IAT measures implicit attitudes by pairing the descriptor and the construct, and then measuring the speed of response. The faster a participant responds in milliseconds, the stronger the participant's association between the pair of adjective-items (Glock, Kneer, & Kovacs, 2013; Greenwald, McGhee, & Schwartz, 1998; van den Bergh, Denessen, Hornstra, Voeten, & Holland, 2010). For example, the IAT might examine the relation between the dichotomous adjective pair positive/negative and race (e.g., white or Black). Participants go through a set of trials categorizing a mixture of the sets (e.g., Black and positive; white and positive; Black and negative; white and negative) using keyboard keys for their responses (Greenwald, McGhee, and Schwartz, 1998). While the intended target population of this assessment is general, meaning it can be used to assess implicit associations in many contexts with a wide variety of subjects, for this study's purposes the intended focus will be on teacher education students' attitudes toward race.

The computer keys used are the "E" and the "I" keys, and each represents one of the two dichotomous variables. For example, if the variables were "good" and "bad," the "E" key would represent "good" and the "I" key would represent "bad." The IAT measures response latencies in milliseconds, which is why the test is administered on a computer (Glock et al., 2013; Greenwald et al., 1998; Greenwald et al., 2009; van den Bergh et al., 2010). Greenwald et al. (1998) established the validity of the IAT through three studies: first, validity across positive and negative attitudes; next, validity across attitudes on ethnicity; and finally, validity across attitudes on race. Additionally, Greenwald et al. (2009) went further by focusing on the predictive validity of the IAT and found an average validity effect size of $r = .274$, which is a moderate size, for the prediction of three measures contained across the studies: behavioral, judgmental, and physiological (Greenwald et al., 2009).

In the present study the racial bias IAT was given to participants in an online format using open-source materials. It consisted of two practice trials (one for race and one for positive/negative words) followed by two trials of pairing African American with positive words and Caucasian with negative words. One more practice trial followed with a combination of race and words, and two more trials ensued pairing Caucasian with positive words and African American with negative words.

Vignettes

Two set of vignettes were varied on dimensions of race and gender, yielding combinations of four vignettes: one Black male, one white male, one Black female, and one white female. Each participant received one set of four vignettes, one from each category, allowing each participant to evaluate a vignette with one Black male, one white male, one Black female, and one white female. Each vignette described a student (race and gender specified) misbehaving in the classroom, and a short series of questions followed asking participants to rate the student's behavior on the three dimensions of attribution theory: locus of causality, stability, and controllability.

There were also questions asking the participants which actions they were most likely to do in this situation (respond to the behavior in the classroom or refer the child to the school psychologist) and least likely to do in the situation (remove the student from the classroom or ignore the behavior).

The vignettes were developed by the principal investigator (PI) using models from previous research. The classroom misbehaviors were selected based on common classroom behavior challenges such as tardiness, talkativeness, and moodiness. Each vignette was three sentences long and included the student information (age, sex, race), the classroom misbehavior, the severity of the behavior, and whether this problem was chronic or discrete. These vignettes were piloted with teachers currently in the field to assess clarity in reading and clarity in answering the feedback questions as well as to assess the validity of the vignettes.

Demographic and Teaching Experiences Questionnaire

Demographic information was collected on participants' ages, ethnicities, the number of semesters completed in the education program, and other background information. Teaching experiences, including the number of fieldwork hours and student teaching hours completed to date and whether the participants currently held a teaching certificate, were collected from participants as well, including number of fieldwork hours and student teaching hours completed.

Procedure

After receiving approval from the IRB, the PI reached out to her network of teacher educators and former students through email and Facebook. The recruitment email was forwarded to the students of teacher educators at local urban universities, and the link to the study was in the body of the email. In this way, the surveys remained anonymous from anyone forwarding the recruiting email as the sender would have no way of knowing which students chose to answer the survey and who chose to either ignore the email or delete it upon reading it. Due to the nature of email forwarding, the PI also had no way of knowing the identity of the participants. In addition to email, the link to the battery of surveys was posted in the PI's Facebook group of approximately

60 former students which she runs to keep former students abreast of current research. She also asked former students to share the post, and there was an anticipated snowballing of recruitment. Due to the members of the group being former students as opposed to current students, there was no incentive or disincentive for students to participate.

First, participants opted in to the surveys by clicking on the link in either their email or in their social media feed. This took participants to a Survey Monkey page where they were presented with the consent form. The participants selected the appropriate button based on whether or not they consented ("I consent," or "I do not consent"). If consent was agreed upon, participants were taken to a page that contained the link to the IAT and asked the participants to return to the page when they completed the IAT. Upon returning, participants were asked to approximate the time they completed the IAT in order to match data points. The participants were then presented with a series of four vignettes that describe a student (including sex, age, and race) and a problem behavior. Each vignette was followed by a set of questions asking about the attributional dimensions of causality, stability, and controllability.

Finally, the participants completed a demographic and teaching experiences survey which immediately followed the vignette questions on Survey Monkey. Participants completed the short survey that asked questions about their age, year in school, race, and teaching/fieldwork experience.

The tasks were ordered in this way to avoid priming of conscious racial bias or prevention of bias by providing the demographic questionnaire before the IAT. The total test time was 25 minutes.

Results

Analysis began with finding a quantitative representation of the IAT using effect sizes. Practice trials were thrown out (trials 0, 1, and 4), and the remaining trials were combined to create two groups: trials 2 and 3, which grouped African American photos with positive words and Caucasian photos with negative words; and trials 5 and 6, which grouped Caucasian photos with positive words and African American photos with negative words. Effect sizes were calculated as Cohen's *d* for each participant between the reaction times of these two groups using Stata. A higher effect size represents a greater bias against African American protagonists. Effect sizes of this sample ranged from -0.6139 to 0.9698.

Difference scores between presented student races in the vignette questions were calculated, and they were then used in a multiple regression using Cohen's *d* as the regressor on the differences between Black and white students in identical classroom situations presented to the participants. The regression was not statistically significant, $F(7, 26)=1.51$, $p=0.29$.

Means and standard errors for the specific attribution dimensions (causality, stability, and controllability) asked about in the vignettes are presented in Table 2. They are broken down by race and gender. Analyses are broken down by gender since the vignettes varied by gender.

Table 2: *Means and Standard Errors of Vignette Responses to Attribution Dimensions*

	Attribution Dimension	White		Black	
		Male	Female	Male	Female
How much do you think this behavior originates from the character of the student?	Causality	3.12 (0.27)	3.47 (0.23)	3.13 (0.26)	2.81 (0.26)
How much do you think the environment contributes to this behavior?	Causality	3.18 (0.32)	3.18 (0.30)	3.31 (0.34)	3.31 (0.27)
How much is this behavior a part of the child's nature?	Causality	3.12 (0.23)	3.29 (0.31)	3.00 (0.26)	2.56 (0.30)
How much does this behavior indicate a reaction to the situation s/he is in?	Stability	4.12 (0.23)	3.29 (0.33)	2.94 (0.30)	3.18 (0.39)
Do you believe this student can deliberately change this behavior?	Controllability	4.12 (0.23)	3.82 (0.30)	3.88 (0.27)	4.00 (0.30)

Note. Mean (SE).

Responses to the vignette questions asking participants what they would be most likely and least likely to do in the situation were dummy coded, with responses that entailed keeping the child in the classroom classified by 0 and those removing the child from the classroom classified as 1. The means and standard errors are presented in Table 3.

Table 3: *Means and Standard Errors of Classroom vs. Outside Intervention*

	White		Black	
	Male	Female	Male	Female
Which of the following would you MOST likely choose to do?	0.18 (0.10)	0.29 (0.11)	0.13 (0.09)	0.19 (0.10)
Which of the following would you LEAST likely choose to do?	0.71 (0.11)	0.59 (0.12)	0.69 (0.12)	0.75 (0.11)

Note. Mean (SE).

Paired sample *t*-tests run comparing matched gender categories did not find any statistically significant differences, although two results were found to be just above the significance threshold at the $p<0.05$ level: the belief that the behavior is a part of the child's nature (causality) in females, $t=1.83$, $p=0.09$, and the belief in what the participant thought they were *least likely* to do (keep the student in the classroom versus remove the child from the classroom) in females, $t=-1.85$, $p=0.08$. One reason these results may be worth noting is that, due to a small sample in this study, statistical

power was low, and further examination with a larger sample size may see these dimensions reach significance at the $p<0.05$ level. These results can be found in Table 4.

Table 4: *Paired Sample t-tests Results by Dimension*

		Male			Female		
	Attribution Dimension	*t*(16)	*P*	95% CI	*t*(16)	*p*	95% CI
How much do you think this behavior originates from the character of the student?	Causality	-0.32	0.75	[-0.89, 0.65]	0.68	0.51	[-0.63, 1.22]
How much do you think the environment contributes to this behavior?	Causality	-0.57	0.58	[-0.84, 0.49]	0.00	1.0	[-0.45, 0.45]
How much is this behavior a part of the child's nature?	Causality	0.32	0.75	[-0.35, 0.47]	1.83	0.09	[-0.09, 1.27]
How much does this behavior indicate a reaction to the situation s/he is in?	Stability	0.22	0.83	[-0.50, 0.62]	0.44	0.67	[-0.45, 0.69]
Do you believe this student can deliberately change this behavior?	Controllability	1.33	0.21	[-0.25, 1.07]	-0.77	0.46	[-0.67, 0.31]
Which of the following would you MOST likely choose to do?	--	0.00	1.0	[-0.35, 0.35]	1.46	0.16	[-0.05, 0.29]
Which of the following would you LEAST likely choose to do?	--	0.57	0.58	[-0.16, 0.28]	-1.85	0.08	[-0.38, 0.03]

Note. CI = confidence interval.

A multiple regression using effect size as the regressor did not find any statistically significant effects of effect size on the attribution dimensions as measured by vignette questions for either white students, $F(14, 2)=.017$, $p=0.9848$, or Black students, $F(14, 1)=0.68$, $p=0.7545$. Pearson correlations found a moderate, positive correlation between age and IAT effect size, $r=0.3225$, and a moderate, negative correlation between sex and IAT effect size, $r=-0.2987$.

Pearson correlations for race and IAT effect size were performed to explore a potential relationship between participant race and implicit bias, and the analyses showed a moderately strong and positive relationship for white participants, $r=0.4238$, and a moderate and negative relationship for Hispanic participants, $r=-0.2758$. Black participants also showed a moderate relationship, $r=-0.2435$; however, no statements can be made about a correlation with only one data point for this category. Table 5 displays the Pearson correlations between IAT effect size and self-described race of participants.

Table 5: *Pearson Correlations between Participants' Cohen's d and Participant Race.*

	N	Pearson's *r*
White	8	0.4238
Black	1	-0.2435
Hispanic	4	-0.2758
Asian	4	-0.0879

Note. No participants identified as Native American.

Discussion

The current study examined whether there was a relationship between the racial bias section of the Implicit Associations Test and differences in the attributions of Black and white teacher education students to explain challenging behaviors in the classroom. Specifically, this study sought to determine if teacher education students who scored higher on the IAT would use higher levels of internal causality and controllability for Black students than white students. The findings of this study are inconclusive as there were several limitations to this pilot study, as discussed in the limitations section. However, several points in the findings of note lead the researchers to suggest that more research in this area is needed, as well as improvements in the measures used.

Regarding the research question itself, there was no statistically significant finding in this pilot study that supported the hypothesis, which was that teacher education students who score higher on the racial bias IAT will attribute internal causality and controllability to explain challenging behaviors in the classroom more frequently for Black students than for white students. That is, the findings did not indicate a significant relationship between teacher education students' implicit racial attitudes as measured on the IAT and their attributions of behavior as measured by the vignette responses. However, given the small sample size, one reason for this may be low statistical power; therefore, the larger study should seek more participants to increase power.

Interesting findings that may lead to new research directions in the larger study include examining further the teacher feeling toward a student (i.e., anger or sympathy) based on the interpersonal attribution of behavior (Graham, 1988; Hunter & Barker, 1987; Weiner, 2000). For example, when asked what they would be *most* likely to do, respond to the behavior in the classroom or refer the child to the school psychologist, more participants said that they would be more likely to work to correct the behavior in the classroom as opposed to refer the child to the school psychologist. Additionally, when asked what they would be *least* likely to do, participants responded that they would be least likely to remove the student from the classroom as opposed to ignore the behavior. While comparisons on participant race were not statistically significant for these categories, meaning that the race of the participant did not significantly influence their inclination to remove the child from the classroom, comparison of the female students by race approached significance on both measures. This may warrant further investigation.

Another interesting point of note is the correlation of IAT score and two factors that were not hypothesized about: age and sex. Both were moderate correlations. The age correlation was positive, meaning that as participants increased in age, their IAT scores went up as well, indicating that there may be a connection between older teachers and racial bias. The sex correlation was negative, meaning that women were more likely to score higher on the IAT then men. Again, this may be another avenue worth exploring in the larger study.

Finally, an additional point that should be examined further is the correlation between IAT score and participant race. While not within the scope of this pilot due to sample size not being

sufficient enough to support analysis, further analyses should use a statistical model that examines the relationship between IAT score, classroom behavior labeling, and participant race.

Limitations

There are several limitations to this study. First, this study contained a small sample size as it was intended to be a pilot study to determine if the measures would be feasible on a larger scale. Several measures will be taken to increase the sample size in the larger study, and the goal is to, at minimum, quadruple the sample pool to more adequately explore the relationship between teachers' implicit racial attitudes and their labeling of and responses to disruptive student behavior. Also, given the focus of the study, more steps will be taken to obtain a better racial distribution of participants in the larger study.

Additionally, in the vignette questions that represented teachers' attributions of behavior, only one question each represented stability and controllability, whereas causality was represented in three questions. Moving forward, one question should be removed from the causality dimension and one additional question each should be added to the remaining two dimensions.

One issue that needs to be addressed regarding logistics is the high number of non-completers. The IAT was presented first in the surveys, which required the participants to leave Survey Monkey and perform the test on an outside website. In addition to this, the IAT was not able to be completed on a smart phone or a tablet, so several surveys were opened and abandoned when participants realized they couldn't complete the initial test. Twenty-six participants either did not return to the Survey Monkey page to complete the additional two surveys or opened the survey and could not complete the IAT, leaving many data points unusable. In the larger study, this should be remedied, perhaps by including the IAT as the final survey to alleviate at least the participants who did not return to the survey.

Another important limitation that must be addressed in the larger study is a potential practice effect in the IAT. The open-source test that was used in this study did not vary its' trials in any way, so all participants were presented with the same order of trials every time. Additionally, the way the trials were structured may have lent itself to a practice effect, leading the last two trials to show faster rates of response time than the previous trials. This can be mitigated in the future by varying the five trials following the initial two practice trials.

Practical Significance

Beyond the null findings, this research presents some points of practical significance for several stakeholders, including teachers, schools, and teacher preparation programs. For teachers, the finding that there were differences in the intersection of race and gender in females regarding attributional beliefs (specifically causality of behavior) and hypothetical decision making around classroom misbehavior indicates that the TES in this study may not be aware of the racialized gender beliefs that they hold, whether they are implicit or explicit. The willingness to remove Black females from the classroom for misbehavior aligns with Weiner's (2000) assertion that interpersonal attribution that deems the student responsible for their behavior through an internal locus of causality will ultimately lead the teacher to anger on the part of the teacher. This then leads to removal from the classroom, which is removal of access to learning, social connection, and the denial of a care-based relationship with teachers. It could be argued, then, that implicit

beliefs about racialized and gendered behavior are then reinforced through this cycle of interpersonal attribution of responsibility and exclusionary discipline.

For schools, the removal of students from the classroom for reasons deemed necessary by the classroom teacher means that the original point of referral starts *in the classroom*. This leaves teachers responsible for making interpersonal attributions of behavior that lead to the removal of students from the classroom; it is at this point of contact that the initial decision of how to label classroom behavior begins. School administration has the responsibility to prepare teachers to work within the bounds they provide, which includes providing teachers with support for challenges they face in the classroom through professional development, observation and feedback, and school-wide programs. As this line of research continues to develop and show similar effects of implicit bias as the underlying mechanism of exclusionary discipline decisions on the part of teachers, schools have a responsibility to address this as part of their school-wide culture.

Finally, teacher preparation programs are the initial point of contact with teachers before they move into the classroom with students. Additionally, administrators are often, and hopefully, teachers first, and have gone through teacher preparation programs themselves as their first step in their training. Closely examining how teacher preparation programs specifically address implicit bias in their teachers through sustained and explicit pedagogical practices is a crucial first step in developing equitable disciplinary policies across the country. Teacher education students should move through a teacher preparation program that actively addresses interpersonal attributions of behavior, and how those result in emotions toward students including but not limited to anger and sympathy. At a minimum, addressing these attitudes during clinical experiences will allow students to see how their closely-held beliefs impact how they view their students and ultimately work with them in the classroom.

Future Directions

This study has potential to increase statistical power if scaled up to accommodate more participants. Additionally, expanded hypotheses should be developed and evaluated regarding participants' age, sex, amount of time in a teacher preparation program, and current level of teacher preparation (i.e., preservice or in-service status). There is a need for this research, as the connection between implicit racial attitudes and classroom effects is sparse at best.

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