

The Influence of Student–Teacher Racial Match on Student–Teacher Closeness: A Focus on Asian and Asian American Students

Ho Lam (Eva) Yiu
University of Maryland, College Park

Close student–teacher relations correlate positively with students’ academic, behavioral, and social competences. This study examined student and teacher predictors of student–teacher closeness in a sample of 754 teachers (2% Asian, 10% Black, 2% Hispanic, 85% White, <1% Native American; 92% female) and 16,084 students (8% Asian, 22% Black, 26% Hispanic, 45% White; 49% female). This large sample size allows this study to extend previous research by including a focus on Asian American individuals and by examining teacher beliefs about students in a multilevel analysis. Results indicated that students’ race, gender, in-class behaviors, and academic achievement affected how close teachers felt to them. Asian students were rated as the least close to teachers after controlling for the other covariates. Teachers’ race, grade taught, and beliefs about Asian students explained additional variance in closeness. Although Asian student–teacher match did not influence teacher-perceived closeness, Black student–teacher match and gender match were found to influence closeness. Furthermore, teacher beliefs about students moderated the association between race and closeness in expected ways. Findings showed that teachers displayed reliable individual differences in closeness, and race and beliefs were important in predicting student–teacher closeness.

Keywords: racial match, student–teacher closeness, teacher ratings, STRS

Learning requires effective communication between the teacher and each student. “A teacher forms an interpersonal relationship with each student . . . [and] teaching must be viewed as an interpersonal communication process” (McCroskey & McCroskey, 1986, p. 158). Accordingly, Pianta (1999) proposed that student–teacher relations (STRs) are especially important in students’ educational experience and linked to their adjustment.

Interpersonal closeness has been described as the perceived warmth and affection (Pianta, 2001), psychological distance (Ho & Chau, 2009), and fondness or affinity (McCroskey & McCroskey, 1986) between two people. Terms used in STR research include quality, positive interactions, bonding, relatedness, involvement, emotional support, and closeness. As a whole, the varied concep-

tualizations of positive STRs have pointed to how close psychologically the student and teacher felt toward one another as opposed to a physical closeness, a burdening dependence, or mere interaction frequencies. Student–teacher closeness is important to study because effective communication is more likely to occur when people like each other (McCroskey & McCroskey, 1986). Plus, teachers are natural raters of children once they reach school-going age and so define adjustment for children (Kellam, Branch, Agrawal, & Ensminger, 1975); the adjustment task is more or less to please the teacher. The literature largely supports the benefits of positive STRs in promoting students’ outcomes academically (Baker, Grant, & Morlock, 2008; Meehan, Hughes, & Cavell, 2003), behaviorally (Furrer & Skinner, 2003; Skinner & Belmont, 1993), and psychosocially (Akiba, 2010; Pianta & Stuhlman, 2004).

Factors Influencing Student–Teacher Relations

Past studies of STRs have emphasized student characteristics as predictors, with less attention to teacher characteristics (Yoon, 2002). Yet, STRs are products of individual characteristics, student–teacher interactions, and the classroom context (Pianta, 1999). Thus, both student and teacher variables should be considered when predicting STR closeness.

Student Characteristics

Demographics. On average, teachers feel closer to girls than to boys (C. Murray & Murray, 2004; Saft & Pianta, 2001). Ladd, Birch, and Buhs (1999) found that children from lower socioeconomic status (SES) had more distant relations with their teachers than their more affluent peers. In addition, Yiu (2009) found that

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Correspondence concerning this article should be addressed to Ho Lam (Eva) Yiu, 3214 Benjamin Building, University of Maryland, College Park, MD 20742. E-mail: hlyiu@umd.edu

only White students received closeness ratings above the grand mean by using an adaptation of Pianta's (2001) Student-Teacher Relationship Scale (STRS) out of the four racial groups included. Fumoto, Hargreaves, and Maxwell (2007) reported that early childhood teachers' ratings of STR closeness were lower for 4-year-old children with less experience in spoken English than for their peers in the beginning of the school year, but that these differences were not observed by the end of the academic year. The authors conjectured that such results suggested the value of oral exchanges in STR closeness.

In-class behaviors. Behavioral engagement entails student effort in school-related activities, persistence, attention, concentration, and on-task behaviors. Behavioral engagement correlates positively with STRs (Skinner & Belmont, 1993). Further, using the STRS Closeness scale, Ladd and Burgess (1999) found that teachers felt the least close to children who displayed both externalizing and internalizing behaviors, followed by those who were only aggressive, only withdrawn, and finally, the group of students without elevated scores on any of these measures.

Achievement. C. Murray and Murray (2004) found that teacher-perceived student academic orientation in terms of attendance and teacher-rated effort explained additional variance in STRS closeness net of student demographic variables (race, gender, and disability status).

Teacher Characteristics

Demographics. Little research has examined the effect of teacher gender in student-teacher closeness, usually due to the small samples of male teachers in studies (e.g., Saft & Pianta, 2001). Research has shown that as students progress in grades, teachers rate student-teacher closeness lower than when students were in lower grades (Pianta & Stuhlman, 2004).

Teacher beliefs. Beliefs that teachers form about certain populations affect how they interact with students from these groups (Pianta, 1999). For instance, Asian students under the "model minority" belief are expected to be academically oriented, well-behaved, and reserved (Chang & Sue, 2003). Other studies found differences in teacher-perceived appropriateness of student behavior due to the student's race (Pigott & Cowen, 2000). Such assumptions may lead teachers to interact with students from different races differently by reacting to students according to implicit biases, ultimately affecting student-teacher closeness.

Teacher-Child Interactions

Racial match. Kesner's (2000) study showed that White teachers rated minority students as significantly more dependent than White students. In a similar way, Saft and Pianta (2001) used teacher-student racial match as a predictor for STR outcomes in regression analyses, whereas Zimmerman, Khoury, Vega, Gil, and Warheit (1995) used analysis of variance (ANOVA) procedures to observe mean differences between teacher-rated student behavior scores for various racial groups (68% Hispanic, 14% African American, 18% White). Both studies revealed evidence that teachers were more likely to rate children more positively if their own race matched the student's race.

The Present Study

Taken together, the evidence points to the positive influence of close STRs on children's academic and psychosocial adjustment. In the literature, the use of teachers as the primary rater for both response and predictor variables makes it unclear whether the results reflect the intended theoretical variables or merely method variance. Designs that allow for the separate estimation of influences of construct and method variance would have helped to reduce this confound. Moreover, despite increasing diversity in the United States, the role of race has largely been ignored in these studies; sampled students were mainly White, with Black usually being the largest racial minority. No study included a focus on Asian American students. Yet, this minority group is the fastest growing racial group in the United States (U.S. Census Bureau, 2011). Last, these studies were predominately descriptive rather than using causal inference methods.

This study examined some causal hypotheses about predictors of close STRs with a focus on race. An incidental goal was to examine the criterion validity and reliability of an adaptation of Pianta's (2001) STRS Closeness scale. The definition for STR closeness was conceptualized from the STRS Closeness measure. Specifically, it is the social relationship between a teacher and a specific student characterized by the teacher's perception that the child is warm and affectionate and makes initiatives to seek emotional support from the teacher. The following hypotheses were tested:

H1: At the student level, I hypothesized that, on average, closeness scores would be higher for girls, students with higher SES, and non-English speaker of other languages (ESOL) students. Students with higher engagement and lower externalizing and internalizing behaviors were predicted to obtain higher closeness ratings on average. Racial minority students were predicted to be rated lower on closeness than their nonminority peers on average. Finally, students with lower achievement would be rated lower on closeness.

H2: Beyond student differences and at the teacher level, I hypothesized that female teachers and teachers in lower grade levels would feel closer to students. I predicted no effect of teacher race on closeness after adjusting for student individual differences but that teachers with more positive beliefs about specific groups of students would feel closer to students in general.

H3: In terms of student-teacher interactions, I hypothesized that racial or gender match between student and teacher would contribute unique variance in STR closeness beyond the contributions of other variables. Also, teachers with more positive beliefs about certain groups of students would feel closer to that specific student group than students from other groups.

Method

Sample

Forty-five elementary schools in a large, suburban school district located in a Mid-Atlantic state were recruited for an efficacy

study on instructional consultation teams (IC Teams; Rosenfield & Gottfredson, 2004) that involved four waves of annual data collection beginning with the 2005–2006 school year. This study used the final wave of data (2008–2009). General education teachers ($N = 873$) in first through fifth grades rated their students' ($N = 18,609$) behaviors. The school system had categorized students and teachers into one of six categories: Asian, Black, Hispanic, Native American, White, and other. Because the focus of this study is the effect of racial membership on the STR, students in the ambiguous "other" category were excluded. A very small sample size for Native American students also precluded meaningful analyses for this student group. The final dataset included $N = 754$ teachers (2% Asian, 10% Black, 2% Hispanic, 85% White, <1% Native American; 92% female) and $N = 16,084$ students (8% Asian, 22% Black, 26% Hispanic, 45% White; 49% female). The distributions of the student sample by gender and race were similar across grades and reflected the proportions in the overall sample. For data collection details, see Vu et al. (2011).

Measures

Student predictors included student gender, race (Asian, Black, Hispanic, White), ESOL status, free and reduced meal program (FARM) status, and previous year's average report card grade (GPA) from school records, as well as teacher-rated behaviors (engagement, externalizing, internalizing).

Teacher-rated behaviors were recorded as scale scores (the mean of eight items z standardized to $M = 0$ and $SD = 1$). On the basis of a factor from the Teacher Observation of Classroom Adaptation—Revised (TOCA-R; Werthamer-Larsson, Kellam, & Wheeler, 1991), the eight-item Engagement scale measured teachers' perceptions of students' behavioral engagement in educational tasks in the past month. Teachers rated how easily distracted a student was or how eager the student was to learn on a 4-point scale, ranging from 0 (*never/almost never*) to 3 (*very often*). The internal consistency of the engagement scale in this sample was high ($\alpha = .92$).

Teachers rated students on the eight-item Internalizing Behavior scale from the TOCA-R on anxious, shy, or withdrawal behaviors by using 4-point items such as *seems sad* and *interacts with teachers*. The internal consistency in this sample was moderately high ($\alpha = .84$).

Teachers rated students on the eight-item Externalizing Behavior scale from the TOCA-R on items like "defies teacher or other school personnel" and "is physically aggressive or fights with others," using a 4-point scale, ranging from 0 (*never/almost never*) to 3 (*very often*). The internal consistency in this sample was high ($\alpha = .90$).

Teacher predictor variables. These were teacher demographics, including gender, race, and grade taught from school records, as well as self-reported beliefs about teaching and learning.

Beliefs about teaching and learning. Three self-report items assessed teacher beliefs about instruction and learning for racial minority students: (a) "I believe African American males learn differently from other students," (b) "I should not be expected to provide the language services that English Language Learners (ELL) students require," and (c) "I believe Asian students are often difficult to get to know." Five response options from *strongly*

disagree to *strongly agree* were coded so that the most desired response scored a five. Scores were transformed to $M = 0$, $SD = 1$. The three items were each treated as separate predictors of STR closeness as they did not form an internally consistent scale. The items were written to provide outcome measures in the IC teams' efficacy study. They were items that the program developers expected to be particularly sensitive to their intervention's influence on teacher attitudes related to equity issues (McMurray & Yiu, 2011).

Outcome student-teacher closeness measure. Derived from Pianta's (2001) STRS Closeness scale, the four-item Closeness scale measured the degree of a close STR. Sample items included "I share a caring, warm relationship with this child" and "this child spontaneously shares his or her feelings and experiences with me." Teachers rated students on a 5-point scale, ranging from 0 (*definitely does not apply*) to 4 (*definitely applies*). Alpha reliability in this sample was moderately high at .86. The average rating across the items was z standardized to $M = 0$, $SD = 1$.

Reliability. The correlations among teachers' ratings of students over 4 years involve different teachers every year because pupils changed teachers as they advanced through the grades. Accordingly, errors associated with rater and with time are both included in the definition of error when these correlations are viewed as reliability coefficients. All correlations were significantly different from zero at $p < .001$ and fluctuated around $r = .20$ in size. The intraclass correlation coefficient (ICC) indicated that 41% of the variance in closeness ratings was between teachers. One interpretation of the ICC is that the single-occasion reliability of a rating of a single student as a measure of the teacher's rating disposition is .41. Each teacher rated many students, and a mean rating can be calculated. An estimate of the reliability of this point estimate is lambda-hat (Raudenbush & Bryk, 2002), which for this sample equals .94. Teachers' dispositions to report positive relations with students are highly reliable.

Predictive validity. Longitudinal correlations involving closeness ratings over time were small in size but significantly different from zero at $p < .001$, and the relationships ranged from an absolute value of $r = .1$ to $.2$. Thus, about 1% to 4% of the variance in the other teacher-rated student behaviors in future years is associated with STR closeness. The longitudinal correlations were about .2 between closeness and engagement, about $-.1$ between closeness and externalizing behaviors, and about $-.2$ between closeness and internalizing behaviors. These values show only weak evidence of convergent and discriminant validity, as the correlation of closeness in 1 year with closeness ratings in other years was generally only slightly higher, if not lower, in absolute value than its correlation with other rating scales.

Data Analysis

A multiple imputation procedure was conducted by using NORM software (Schafer, 2000) to impute missing data (range of missing data for the variables = 0% to 14%).

Hierarchical linear models (HLM). The dependent variable was teacher ratings of individual student-teacher closeness, a student-level variable. Because these individual ratings of the students were clustered within teachers, a two-level hierarchical model was required. Data were analyzed by using the HLM program (Raudenbush & Bryk, 2002). The Level-1 model included

student-level variables: student race, gender, ESOL status, FARM status, behavioral engagement, internalizing behaviors, externalizing behaviors, and previous year's GPA. To examine the influence of student characteristics on closeness, the regression equations were

$$Y_{ij} = \beta_{0j} + \sum_{h=1}^H \beta_{hj} X_{hij} + r_{ij} \quad (1)$$

and

$$\beta_{0j} = \gamma_{00} + u_j, \quad (2)$$

where Y_{ij} represents the closeness z score for student i , rated by teacher j ; β_{0j} is the mean for the reference category (i.e., White, female, non-ESOL, non-FARM) evaluated at a value of zero for the remaining covariates; β_{hj} is the deviation from the reference group mean associated with a unit change in the respective covariate; X_{1ij} to X_{6ij} = demographic indicator (Asian, Black, Hispanic, male, ESOL, and FARM, respectively); X_{7ij} to X_{9ij} = in-class behavior z -score rating (engagement, internalizing, and externalizing, respectively); X_{10ij} = previous year's GPA z score; and r_{ij} is the term for remaining individual differences and error.

In Equations 1 and 2, race, gender, ESOL, and FARM were uncentered indicator variables; and engagement, internalizing, and externalizing behaviors, as well as previous year's GPA were—because they are z scores—grand-mean centered. An error term at Level 2 accounted for the design effect of students nested within teachers. The regression coefficients in this model reflect the influence of each student characteristic that controlled for the other variables in the model.

To test the effects of teacher characteristics on the student-adjusted closeness scores, I used teacher characteristics to predict the Level-1 intercept in Equation 1:

$$\beta_{0j} = \gamma_{00} + \sum_{g=1}^G \gamma_{gj} W_{gj} + u_j, \quad (3)$$

where γ_{00} is the grand mean of the closeness score for teachers in the reference group (White, female, taught the fifth grade) adjusted for the covariates in Equation 1; W_{1j} to W_{5ij} = demographics for teacher j (Asian, Black, Hispanic, Native American, and male, respectively); W_{6j} to W_{9ij} = indicators for grade-level taught (Grade 1 to 4, respectively); W_{10j} to W_{12j} = z scores for beliefs about African American male learning, providing services to ELLs, and getting to know Asian American students, respectively; and u_j is the error term at the teacher level.

To test interaction effects between teacher and student characteristics, I also included teacher variables in the Level-2 model that might account for variability in other coefficients at Level 1. Thus, in addition to Equation 3, the slopes were predicted using teacher variables:

$$\beta_{hj} = \gamma_{h0} + \sum_{g=1}^G \gamma_{gh} W_{gj} + u_j. \quad (4)$$

Whether coefficients should be fixed or free across teachers was tested using group-mean centering at Level 1. If the null hypothesis of equal coefficients was not rejected at the $p < .05$ level, then

they were fixed in the model. For instance, if random variance was found in the coefficients for race at Level 1, then further analyses were conducted using the Level-1 student race coefficients as the dependent variables to evaluate the extent to which teacher race moderates the effect of student race (a cross-level interaction). If the homogeneity hypothesis were retained, however, then the slope for the variable was fixed in the model. The slopes for student being Hispanic, male; and for engagement, externalizing behaviors, internalizing behaviors, and previous year's GPA were found to vary between teachers. Regardless, grand-mean centering was used to test for main effects of teacher-level continuous variables on student-teacher closeness. Specifically, Level-2 effects on the intercept at Level 1 (using β_{0j} as the dependent variable) used uncentered indicator variables and grand-mean centered continuous z -transformed variables. When β_{hj} ($h \neq 0$) was the dependent variable, group-mean centering was used at Level 1 because then these beta coefficients were estimates of the within-teacher regression coefficients to show the effects of interactions between a teacher and the students whom she rated, after adjusting for the deviation of student characteristics from the classroom mean. Thus, Equation 5 is exchanged for Equation 1 as the Level-1 equation.

$$Y_{ij} = \beta_{0j} + \sum_{h=1}^H \beta_{hj} (X_{hij} - \bar{X}_{hj}) + r_{ij}. \quad (5)$$

Model specification. The correlations among student-level variables are shown in Table 1. Student-teacher closeness was statistically significantly correlated with all student-level predictors at the .05 level. A high degree of association between being Hispanic and ESOL status was observed ($r = .69$), as well as between engagement and externalizing ($r = -.52$). Special attention to these predictors was given in the subsequent procedure to assess multicollinearity.

Student covariates were tested for multicollinearity by comparing the standardized partial regression coefficients from a multiple regression of closeness on all student covariates with the corresponding zero-order correlation for each covariate. When ESOL was included, inflated coefficients were observed, therefore it was dropped from the model to avoid instability due to multicollinearity. Similarly, FARM status introduced inflation in the coefficients and was excluded from the final model. Likewise, teacher-level predictors were added one-by-one in Level 2 in HLM order to assess for multicollinearity by evaluating changes in the coefficients as a new predictor was added. Multicollinearity among the Level-2 variables was not of concern.

Results

Sources of Variations in Student-Teacher Closeness

The reliability analysis indicated that 41% of the variance in closeness was between teachers and 59% of the variance was within teacher (individual child differences and error).

Student effects. Model 1 in Table 2 displays the student effects on closeness that takes into account the nested design by including an error term at Level 2 in HLM. The intercept refers to the average closeness rating for White, female students, adjusted

Table 1
Bivariate Correlations Among Student-Level Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Closeness	—											
2. Asian	-.02*	—										
3. Black	-.06*	—	—									
4. Hispanic	-.02*	—	—	—								
5. White	.09*	—	—	—	—							
6. Male	-.18*	—	—	—	—	—						
7. ESOL	-.05*	.12*	-.24*	.69*	-.48*	.01	—					
8. FARM	-.08*	-.06*	.10*	.46*	-.47*	-.00	.46*	—				
9. Engagement	.40*	.10*	-.16*	-.04*	.12*	-.22*	-.08*	-.16*	—			
10. Internalizing	-.46*	.01	.04*	.05*	-.08*	.06*	.08*	.10*	-.43*	—		
11. Externalizing	-.22*	-.08	.20*	-.06*	-.06*	.16*	-.08*	.07*	-.52*	.12*	—	
12. Previous GPA	.16*	.08*	-.14*	-.22*	.27*	-.10*	-.27*	-.34*	.51*	-.24*	-.22*	—

Note. ESOL = English for speakers of other languages; FARM = free and reduced meals; GPA = grade point average.

* $p < .001$.

for externalizing, internalizing, and engagement ratings, and prior grades. The parameter estimates may be interpreted as the average effect of student characteristics across teachers. Generally, teachers rated their relations with boys as less close than with girls ($\beta_4 = -.24$, $SE = 0.01$); boys scored almost a fourth of a standard deviation lower than girls on the student-covariate-adjusted closeness score.

Student race accounted for significant variance net of student gender, in-class behaviors, and prior GPA. Asian, Black, or Hispanic had lower closeness ratings than their White peers ($\beta = -.17$, $-.08$, and $-.08$, respectively; $SE = 0.02$ for all). Thus, on average, Asian students scored the lowest, about one sixth of a standard deviation lower than White students, on covariate-adjusted closeness.

Of students' in-class behaviors, internalizing behaviors had the largest standardized partial regression coefficient in predicting STR closeness. On average, as students' internalizing behavior rating increased by one SD above the grand mean, teachers rated them almost a third of a SD lower on student-covariate-adjusted closeness ($\beta_6 = -.30$, $SE < 0.01$). Engagement had the next biggest coefficient: as students' engagement score increased by one SD above the grand mean, they scored about a sixth of a SD higher on closeness ($\beta_5 = .16$, $SE = 0.01$). Externalizing behaviors had a much smaller partial coefficient; as students' externalizing behaviors rose by one SD above the grand mean, they scored a 12th of a SD lower on closeness ($\beta_7 = -.08$, $SE < 0.01$).

Students' academic achievement was a *negative*, albeit small, predictor of STR closeness ($\beta_8 = -.06$, $SE < 0.01$) beyond the variance explained by student race, gender, and in-class behaviors. Higher GPA in the prior year was correlated with lower STR closeness on average.

Teacher effects. To determine which teacher characteristics predicted student-covariate-adjusted closeness, I regressed the intercept at Level 1 on all proposed teacher covariates with grand mean centering at Level 1 as presented in Model 2 of Table 2. The intercept ($\gamma_{00} = .02$) refers to the mean student-adjusted closeness rating given by White female teachers who taught the fifth grade, and responded at the grand mean on the belief item (i.e., z score = 0). Only teacher race, grade level taught, and belief about Asian students contributed significant additional variance.

Asian were more likely than White teachers to give high closeness ratings ($\gamma_1 = .22$, $SE = 0.06$). Teachers identified as Black or Hispanic gave lower closeness ratings than did White teachers ($\gamma_2 = -.17$, $SE = 0.08$, for Black teachers; $\gamma_3 = -.26$, $SE = 0.12$, for Hispanic teachers). In other words, compared with White teachers, Asian teachers felt almost a fourth of a standard deviation closer to students, whereas Black and Hispanic teachers felt at least a sixth of a standard deviation less close to students.

On average, teachers who taught lower grades felt closer to students than teachers who taught higher grades. The regression coefficients for first through fourth grades were $\gamma = .32$, $.26$, $.20$, and $.16$, respectively (SE ranged from 0.06 to 0.08). Fifth grade served as the reference category. Thus, teachers in grade one felt the closest to their students (about a third of a standard deviation higher than fifth grade teachers), followed by teachers in Grades 2, 3, and 4. Fifth grade teachers felt the least close to their students.

Controlling for teacher race, gender, and grade taught, teachers who more strongly believed that Asian students were not difficult to get to know felt a little closer to students, on average ($\beta = .08$, $SE = 0.02$). Teachers' beliefs about ESOL and African American students' learning did not affect the student-adjusted closeness ratings.

Interactions Between Student and Teacher Characteristics

The slopes determined to vary across teachers in previous steps (Hispanic students and student gender) and those of theoretical interest (Asian and Black students) were predicted in a slope-as-outcome model to assess cross-level interactions. For each slope-as-outcome model, only teacher characteristics with obvious possible relevance to the student characteristic the slope for which was being examined were included. The results are displayed in Model 3 of Table 2. The intercept-as-outcome equation included only those teacher variables determined in the previous steps to be significant predictors.

Gender match. Controlling for the other student and teacher covariates, male teachers felt closer to male students ($\gamma_{4,5} = .10$, $SE = 0.04$) on average—about a tenth of a standard deviation higher.

Table 2
Estimated Effects on Closeness in a Two-Level Nested Model

Covariate	Model 1: Student effects		Model 2: Add teacher effects		Model 3: Add interactions	
	<i>b</i> (<i>SE</i>)	<i>df</i>	<i>b</i> (<i>SE</i>)	<i>df</i>	<i>b</i> (<i>SE</i>)	<i>df</i>
Student level						
β_0 for reference	.19 (0.02)	754	.02 (0.06)	742	-.20 (0.06)	745
β_1 for Student Asian _{<i>ij</i>}	-.17 (0.02)	16075	-.17 (0.02)	16063	-.17 (0.02)	751
β_2 for Student Black _{<i>ij</i>}	-.08 (0.02)	16075	-.07 (0.02)	16063	-.08 (0.02)	752
β_3 for Student Hispanic _{<i>ij</i>}	-.08 (0.02)	754	-.08 (0.02)	754	-.08 (0.02)	752
β_4 for Student Male _{<i>ij</i>}	-.24 (0.02)	754	-.24 (0.01)	754	-.25 (0.01)	753
β_5 for Engagement _{<i>ij</i>}	.16 (0.01)	754	.16 (0.01)	754	.15 (0.01)	754
β_6 for Internalizing _{<i>ij</i>}	-.30 (<0.01)	754	-.30 (<0.01)	754	-.30 (0.01)	754
β_7 for Externalizing _{<i>ij</i>}	-.08 (<0.01)	754	-.08 (<0.01)	754	-.08 (<0.01)	754
β_8 for Previous GPA _{<i>ij</i>}	-.06 (<0.01)	754	-.06 (<0.01)	754	-.06 (<0.01)	754
Teacher level						
$\gamma_{0,1}$ for teacher Asian			.22 (0.06)	742	.24 (0.09)	745
$\gamma_{0,2}$ for teacher Black			-.17 (0.08)	742	-.15 (0.09)	745
$\gamma_{0,3}$ for teacher Hispanic			-.26 (0.12)	742	-.18 (0.12)	745
$\gamma_{0,4}$ for teacher Native Am.			.42 (0.10)	742	.58 (0.18)	745
$\gamma_{0,5}$ for teacher Male			-.15 (0.10)	742	—	—
$\gamma_{0,6}$ for Grade 1			.32 (0.06)	742	.40 (0.08)	745
$\gamma_{0,7}$ for Grade 2			.26 (0.07)	742	.30 (0.08)	745
$\gamma_{0,8}$ for Grade 3			.20 (0.07)	742	.18 (0.08)	745
$\gamma_{0,9}$ for Grade 4			.16 (0.08)	742	.18 (0.08)	745
$\gamma_{0,10}$ for African Am. belief			-.02 (0.02)	742	—	—
$\gamma_{0,11}$ for ESOL belief			.02 (0.02)	742	—	—
$\gamma_{0,12}$ for Asian belief			.08 (0.02)	742	.12 (0.02)	745
Interactions						
$\gamma_{1,1}$ for Teacher Asian					.02 (0.16)	751
$\gamma_{1,11}$ for ESOL belief					.02 (0.02)	751
$\gamma_{1,12}$ for Asians belief					.08 (0.02)	751
$\gamma_{2,2}$ for Teacher Black					.10 (0.04)	752
$\gamma_{2,10}$ for African Am. belief					.02 (0.01)	752
$\gamma_{3,3}$ for Teacher Hispanic					.02 (0.07)	752
$\gamma_{3,11}$ for ESOL belief					.04 (0.02)	752
$\gamma_{4,5}$ for Teacher Male					.10 (0.04)	753

Note. ESOL = English for speakers of other languages; GPA = grade point average. Models 1 and 2 variables are uncentered, except continuous variables are *z* scores. Model 3: Level-1 predictors are group mean centered, Level-2 variables uncentered, except continuous variables are *z* scores; nonsignificant teacher predictors omitted; African American (Am.) belief: "I believe African American males learn differently from other students"; ESOL belief: "I should not be expected to provide the language services that English Language Learners (ELL) students require"; Asian belief: "I believe Asian students are often difficult to get to know." Items are rescaled such that rejecting each item earns a higher score (range 1 to 5).

Racial match. Holding constant the other student and teacher covariates, Black teachers gave higher closeness scores for Black students than students of other races ($\gamma_{2,2} = .10$, $SE = 0.04$)—about a tenth of a standard deviation higher, on average. Though in the expected, positive direction, a significant racial match interaction was not observed for the Asian or Hispanic dyads.

Student race and related teacher belief. Teachers who agreed more strongly that it is not difficult to get to know Asian students rated Asian students a little higher than other students on covariate-adjusted closeness ($\gamma_{1,12} = .08$, $SE = 0.02$). Teacher beliefs about support for ESOL students did not have a significant interaction effect on closeness with Asian students. On the other hand, teachers who more strongly believed that it was their responsibility to provide learning support for ESOL students felt slightly closer to Hispanic students than other students ($\gamma_{3,11} = .04$, $SE = 0.02$). Teacher beliefs about African American male students learning differently from other students did not account for significant variance in the slope for Black students in predicting student-adjusted closeness ratings.

Discussion

The STR closeness literature is confusing and convoluted with terms like *emotional support* or *warmth* in the relationship. The psychometric properties of a scale to measure a murky construct have not been thoroughly investigated. This study revealed that 41% of the variance in student-teacher closeness ratings was between teachers. This finding suggests that the current adaptation of Pianta's (2001) STRS Closeness scale provides a reliable measure of teachers' disposition for closeness at the classroom level ($\lambda = .94$). In other words, this scale may reflect teacher personality. This finding is consistent with Baker, Grant, and Morlock's (2008) study, which showed that classroom teachers contributed the most variance to elementary students' school adaptation among other predictors such as STRS Closeness and Conflict. Though not an entirely new finding, this result has not been a focus of the STR literature.

Despite a strong tendency for teachers to rate in a certain direction, race and beliefs still influence student-teacher closeness

as measured from a perspective that approximates how many European Americans view closeness. This finding is important because according to Kellam et al. (1975), psychological adjustment has two components, one of which involves others' perception of the individual. Despite possibly differing cultural expectations about what a close student-teacher relationship is, closeness as defined by the mainstream culture is still important because this conceptualization may be the schema from which teachers operate, especially when most public school teachers are White (U.S. Department of Education, 2009). Thus, students might be expected to exhibit teachers' expectations for closeness to adapt optimally as residents of the United States. It is from this perspective that the current results are interpreted.

Hypothesis 1

Student race *does* predict student-teacher closeness. Here, a conceptual question arises about the meaning of using categorical race indicators as predictors. Do these dummy race variables represent some latent "race" construct that causes student-teacher closeness? Eagly and Chin (2010) argued that such membership categories "have a psychological reality at deeper levels than the surface of the human body" because these readily observable phenotypes are linked with certain worldviews in perceivers' minds (p. 934). In particular, racial categories have indirect effects on closeness through the thoughts activated when teachers perceive students who use social categories spontaneously (Allport, 1954). Future research could test this theory.

In general, girls received higher closeness ratings than boys. Of the four racial groups (Asian, Black, Hispanic, White), Asian students were rated the lowest in closeness when gender, in-class behaviors, and academic achievement were held constant (from here on, *closeness* refers to the other covariates-adjusted rating). More engaged students were closer to their teachers, whereas students who displayed externalizing or internalizing behaviors received lower closeness ratings. Externalizing behavior was found to be one of the weaker predictors of closeness. In contrast, internalizing behavior (being a loner, being shy or timid around adults, and seeming anxious or worried) was the strongest predictor of STR closeness. Students' previous year's GPA actually predicted lower closeness ratings, although its zero-order correlation with closeness was weak positive. Also, students' ESOL and FARM statuses were not found to be unique predictors of closeness. Thus, except for the finding about previous GPA and the nonsignificance of ESOL and FARM as predictors, my first hypothesis was supported.

What causes teachers to feel less close to Asian students? As currently conceptualized, part of STR closeness measures the student's willingness to approach the teacher. Thus, Asian students' lower ratings may be an accurate reflection of their behavior in light of widely published notions of Asian cultural values of discreteness (Kim, 2009) and respect for authority (Lin & Fu, 1990). If teachers perceive such behaviors as internalizing, then it would be expected that STR closeness ratings would be compromised because students' internalizing behavior was found to be the strongest (and negative) predictor of closeness. It is worrisome that being an Asian American student predicted the lowest student-teacher closeness rating, especially in the face of the "model minority" stereotype which posits Asians as a well-adjusted group.

Specifically, Asian students might not be receiving the teacher support that they need to facilitate adaptive psychosocial development. Further research on this issue is needed. From the current analyses, teachers' stronger belief that Asian students are not difficult to get to know predicted their feeling closer to Asian students. Perhaps an important role for school-based mental health professionals is to educate themselves and teachers about Asian American culture to dispel misconceptions such as elevated perceptions of Asian students as shy or timid, withdrawn, and anxious or worried compared with their peers. Just as a substantial proportion of the variance in the closeness measure was due to teachers, the internalizing measure may also reflect a teacher rating proclivity rather than differences in student internalizing behavior. Teachers can opt to initiate contact with Asian students to get to know them better. Scheduled lunches with a few students at a time toward the beginning of the school year might serve as a bridge between teachers and students to get to know one another in a nonthreatening environment. Ways to promote student-teacher cross-cultural familiarity may be worthy of experimental tests in schools.

Hypothesis 2

Contrary to expectations that teacher race would have no effect on STR closeness after adjusting for student characteristics, Asian teachers, in general, felt the closest to students than other teachers. Black and Hispanic teachers felt less close to students than did White teachers. If Asian students shared a similar relational style as Asian teachers, it is possible that even though teachers feel less close to them, Asian students nonetheless feel closer to their teachers than their peers do. This is important because the subjective experience of the individual is an important component of defining mental health (Kellam et al., 1975). Still, the other component of mental health is the community's judgment of one's social adaptation status (Kellam et al., 1975). Thus, if the general public regarded Asian individuals as more internalizing than others, this perception may negatively affect Asian persons' mental health status, jeopardizing their opportunity to reach the same level of success that may be implicitly reserved for nonminority persons.

My hypothesis that female teachers would give higher closeness ratings was also refuted. Nonetheless, the regression coefficient for teachers being male yielded an effect in the expected (negative) direction when predicting closeness. The nonsignificant finding may be attributable to a small sample of teachers identified as males ($n = 64$). A small sample size is more susceptible to the Type I error that a hypothesis is incorrectly refuted when in fact a true difference exists. However that may be, the results did not provide support for the hypothesis.

The hypothesis that teachers with more positive beliefs about specific groups of students would feel closer to students is partially supported. Teacher-reported beliefs about minority student groups can have an influence on STR closeness. On average, teachers who believed more strongly that Asian students are not difficult to get to know felt closer to students than their colleagues, suggesting that a barrier to increased STR closeness might be the teacher's perception that certain students are more difficult to get to know. Administrators might consider setting a goal to foster positive classroom environments by encouraging teachers to get to know their students on a more personal level. Even though this item

specifically assessed teachers' attitudes toward getting to know Asian students, teachers who agreed to this statement might hold similar beliefs toward other students, in general, and minority students, more specifically. Assessing such a possibility requires further research. The other two items that assessed beliefs about male African American students' learning style and teaching responsibility toward ESOL students, however, did not affect how teachers rated closeness in general.

Hypothesis 3

The hypothesis that a student-teacher racial match would contribute unique variance in closeness beyond the other covariates was only observed for Black student-teacher pairs. In other words, Black teachers felt closer to students who were also Black than to other students. Though the effects were in the expected, positive direction, racial match was not a significant predictor of student-adjusted closeness for Asian or Hispanic students, but the sample sizes of Asian and Hispanic teachers were small. Furthermore, although teachers on average felt closer to female students, an interaction between teacher and student genders existed such that male teachers felt closer to male students. These findings on student-teacher matches in terms of phenotypic qualities like race and gender corroborate the social psychological literature on liking (Clark & Lemay, 2010), in which similarity is the strongest predictor of how much people like others.

As for the interaction between teachers' specific beliefs and the related student group, my hypothesis was partially supported. Asian students received higher closeness ratings if their teachers believed that they are not difficult to get to know. This result is not surprising because teachers who find it less difficult to get to know students can also be expected to find it easier to relate to their students on a more personal and closer level. In addition, Hispanic students were rated as being slightly closer to teachers who adhered more to the belief that it was their responsibility to provide learning support to ESOL students. One interpretation of this finding is that teachers who feel more personally responsible for a group of students' learning outcomes would naturally want to get to know these students better to understand better their learning needs. Conversely, teacher beliefs about African American students' learning style did not interact significantly with how close they felt toward Black students. This final finding demonstrates discriminant validity for the closeness scale. Specifically, because closeness taps into the social relationship between students and teachers, teachers' perceptions of how African American students learn should not affect how they relate to these students.

Limitations

Like any research, the generalizability of the current results may be limited to the population from which the sample came. Plus, this research made assumptions about causal ordering to infer causal influences of teacher and student characteristics on STR closeness. Specifically, the inferences based on the analyses are valid only if the model were specified properly using relevant and sufficient predictors. Also, causal ordering cannot be definitely established between some predictors and the hypothesized outcome. For instance, the relationship between a student's externalizing behavior and STR closeness is ambiguous. One could spec-

ulate that a student may act out, resulting in more distant relations; or perhaps more distant relations cause the student to feel alienated, who then displays negativity through externalizing behaviors. As Bandura (1985) might say, the relationship is reciprocal. Finally, to the extent that measurement errors exist, (i.e., if the scales do not measure the intended constructs or measure them with error) causal inferences are to that degree weakened.

This study did not examine Asian subgroups. Variation no doubt exists among the Asian ethnic subgroups. For example, despite the model minority myth, perceptions of different Asian American groups may differ. These differences may affect closeness. The current research provides a foundation on which more ethnically disaggregated research can be built.

Implications and Future Research

Culture and closeness. Using archival data from the 1999 Trends in International Mathematics and Science Study, Leung (2005) found that the student-to-teacher spoken word ratio was the lowest in Asian societies such as Hong Kong and Japan, whereas the United States had the highest ratio. In East Asian cultures, students may be used to exchanging fewer words with their teachers compared with their peers in the United States. Because communication plays an important role in the development of dyadic relations in U.S. society, the lower frequency of verbal exchanges expected of Asian students toward their teachers may negatively affect their STRs as students in the United States. This may be further complicated by differently prioritized values across cultures. For instance, filial piety and obedience to elders are important values in Chinese cultures (Lin & Fu, 1990), whereas individualism and an inquisitive nature are expected of U.S. children (Kingston & Forland, 2008). Thus, some Asian students may be expected to be obedient and respectful toward their teachers. The salience of a hierarchical relationship between teacher and student in Asian families may hinder Asian American students from forming close relationships with their teachers as valued in North American culture. This is problematic because the majority of teachers in the United States are non-Hispanic White (U.S. Department of Education, 2009). More culturally sensitive instruments need to be developed in cross-cultural research because inferences from studies can only be valid if the same construct is measured by the instrument across participants.

School-based interventions. That teachers' personal beliefs interacted with student race is consistent with the hypothesis (S. L. Murray, Bellavia, Holmes, Griffin, & Dolderman, 2002) that perceived similarity may predict closeness differently than actual similarity. Future research may address whether interventions to help teachers become more aware of the importance of closer relations with these students lead to better outcomes. One such intervention may be teacher professional development to support teachers in understanding how their attitudes might affect their work. Many studies have focused on reducing conflicts in STRs as an intervention to prevent future behavioral and academic problems, but interventions to increase the closeness between students and teachers are less prevalent. Perhaps for students who are not overtly displaying risk (e.g., they perform well academically), attention should be given to increase their closeness with teachers. Closer STRs may allow teachers to gain insight into how students

are adapting beyond their academic performance and to intervene in a timely manner as necessary.

The teachers themselves. Finally, the results imply that individual differences among teachers in the tendency to rate their relations with students as positive are highly reliable. Because of the apparent importance of the quality of STRs for student outcomes, more attention should now be given to the possible influence of teacher tendency toward positive relations rather than focusing solely on student behavior or characteristics.

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