Home-School Dissonance and Student-Teacher Interaction as Predictors of School Attachment among Urban Middle Level Students

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Abstract

The middle level years continue to be of significant concern to educational stakeholders, policymakers, theorists, and researchers. Chief among this concern is the degree to which middle level students adapt to the middle level climate and eventually begin to feel attached to or a sense of belonging at their school. The research literature has identified student-teacher interactions as a leading factor that promotes school attachment and corresponding adaptive behaviors, including academic success. The purpose of this study is to investigate the associations between middle level students’ perceptions of home-school dissonance and reports of school attachment. Seven hundred and seventy-six middle level students participated in the research. Using the Questionnaire of Teacher Interaction (Brekelman, Wubbels, & Creton, 1990) and a measure of home-school dissonance (Arunkumar, Midgley, & Urdan, 1999), results show that both were significant predictors of school attachment, as measured by the School Attachment Questionnaire (Mouton, Dewitt, & Glazier, 1993). Study limitations and implications along with recommendations for future research are discussed.

Keywords: school attachment, student-teacher interactions, home-school dissonance, middle level students

The middle level years are important for adolescents to learn about themselves and their relationships with
others. The middle level years are also important for helping pre-adolescents and adolescents develop strategies that facilitate their school success and academic achievement, in particular (Goodenow, 1993; Smart, 2014; Way, Reddy, & Rhodes, 2007). It is during this period, however, when many middle level students face significant personal, social, and educational/academic challenges and changes. These may include, but are not limited to, cognitive, physical, and motivational shifts, as well as increased class sizes, larger number of teachers and responsibilities per class, larger school buildings to navigate, lower levels of parental involvement, and less nurturance among classroom teachers (as compared with their elementary school counterparts) (Bailey, Giles, & Rogers, 2015; Barber & Olsen, 2004; Smart, 2014; Turner, Christensen, Kackar-Cam, Trucano, & Fulmer, 2014). A positive middle level school experience may help ease the impact of these and other influences on the lives of young adolescents.

One of the strongest buffers to difficulty in schooling during the middle grades is the degree of school attachment students report. School attachment is commonly defined as a sense of connection a student feels to the school and others at school (Brown & Evans, 2002; Carolan & Chesky, 2012; Diaz, 2005; Libby, 2004). Existing educational research provides a link between school attachment and academic achievement and other positive schooling experiences (i.e., less absenteeism, less risk-taking behaviors such as drinking and smoking, and school dropout) (Battin-Pearson et al., 2000; Fischer & Theis, 2014; Goodenow, 1993; Maddox & Prinz, 2003; Mouton, Hawkins, McPherson, & Copley, 1996; Nichols, 2006; Penner & Wallin, 2012; Van Ryzin, Gravely, & Roseth, 2009).

Relevant research on concepts similar to school attachment (e.g., school bonding, school belonging, and school connectedness) are included in this introduction because the terms, while different, are closely related to school attachment (Carolan & Chesky, 2012). For example, Libby (2004) identified bonding, connectedness, and engagement as additional constructs to measure students’ relationships to and in school. Carolan and Chesky (2012) and others (e.g., Fischer & Theis, 2014) echoed these conceptualizations of school attachment nearly a decade later in their research. Still, others have actually defined the concepts that mirror school attachment. For example, Booker (2004) defined school belonging as students feeling important and respected at school. School connection has been described as the interpersonal interactions in school. School bonding has been defined as connections students have to their schools and other aspects of their academic lives (Maddox & Prinz, 2003). Van Ryzin and colleagues (2009) defined school belongingness as students’ feelings of being accepted and supported by others, while school engagement was defined as students’ level of engagement in classroom activities. Further, school connectedness has been defined by McNeely (2005) as students’ perceptions of belonging, respect, safety, and feeling cared for at school. Here, the researcher identified social belonging and students’ relationships with teachers as subdomains of school connectedness. Given the literature, it is clear that there is significant conceptual similarity among the constructs that describe school attachment.

Researchers indicate that school attachment becomes increasingly more important to academic performance and social adjustment at school along with overall well-being as students reach adolescence (Goodenow, 1993; Johnson, Crosnoe, & Elder, 2001; LeCroy & Krysik, 2008; Marcus & Sanders-Reio, 2001; Penner & Wallin, 2012; Van Ryzin et al., 2009). For example, in a study of school attachment among middle and high school Latino/a students, Diaz (2005) found a positive correlation between students who have a strong attachment to school and the likelihood of those students engaging in positive, socially desirable behaviors. Similarly, Booker (2007) identified feelings of loneliness and isolation along with academic and behavior problems among high school students with low school attachment. Further, Van Ryzin and associates (2009) used structural equation modeling to find that adolescents’ perceptions of belongingness have a positive impact on engagement in learning and their overall school adjustment. Like several researchers examining school attachment, Van Ryzin and associates (2009) concluded that students who report being attached to school are more likely to achieve at higher levels and are less likely to drop out of school (Barber & Olsen, 1997; Battin-Pearson et al., 2000; Carolan & Chesky, 2012). In contrast, a study by Frey, Ruchkin, Martin, and Schwab-Stone (2009) found that low school attachment during adolescence was predictive of higher levels of violent behavior and aggression, while elevated levels of school attachment were predictive of high academic motivation and positive school climate perceptions. More recently, an examination of teacher-based strategies designed to increase middle level students’ school attachment facilitated a 65% reduction in the number of out-of-school suspension over four years (Penner & Wallin, 2012).

**Purpose of the study**

Given these findings, it is clear that a strong sense of school attachment is central to middle level
students being academically successful and well-adjusted in school. While researchers have examined school attachment and its impact on achievement and schooling-related outcomes for varying levels of students, there remains a lack of research examining how middle level students’ perceptions of the classroom environment (particularly the potential mismatch between home and school procedures and operations, and their reported interactions with teachers) are associated with school attachment. The purpose of this study, therefore, is to expand the research on school attachment by investigating whether middle level students’ perceptions of home-school dissonance are associated with their reported levels of school attachment. Despite home-school dissonance being conceptually linked to student achievement and its psychological correlates (e.g., academic self-efficacy, intrinsic motivation) (Allen & Boykin, 1992; LaRocque, 2013; Markose & Hellstein, 2009; Ogbu, 1982; Tyler et al., 2008), only a few studies have actually empirically examined home-school dissonance as a predictor of these and related schooling outcomes (Arunkumar et al., 1999; Kumar, 2006; Tyler et al., 2010).

Review of literature

Student-Teacher Interactions

The empirical study of students’ perceptions of teacher interactions began with Leary’s Model for Interpersonal Teacher Behavior (MITB) in 1957. The model was designed to examine social interactions within psychotherapeutic settings. Based on its effectiveness in describing human interactions, it has been applied to other settings, including the classroom (Wubbels & Brekelmans, 2005). Since the introduction of this model, several educational theorists and researchers have argued that student-teacher relationships provide the foundation for effective instruction and ultimately aid in the cultivation of person-centered factors that produce positive academic performance and social development among students of all ages (Howells, 2014; Noddings, 2005). Indeed, researchers have identified student-teacher interactions as an important aspect of research on classroom learning environments and supportive teacher-student relationships as key components in promoting positive student outcomes (Fraser & Walberg, 2005; Osterman, 2000; Rosenfeld, Richman, & Bowen, 2000).

Though some research exemplifying poor student-teacher interactions and their impact on students exists (e.g., Matsumura, Slater, & Crosson, 2008; Smart, 2014), much of the literature focuses on proactive and positive teacher-based characteristics and actions that not only facilitate the development of “high-quality” student-teacher associations, but also facilitate students’ attachment to school, achievement motivation, and academic performance. In terms of actual teachers, two articles from the middle level literature detail the development of classroom and school-based climates that promote positive student-teacher interactions. Specifically, Beaty-O’Ferrall, Green, & Hanna (2010) discussed strategies used to build effective student-teacher relationships, which included building empathy and admiring negative attitudes and behaviors (i.e., recognizing typically negative student behaviors as positive characteristics that can be used academically). More recently, Brennan (2015) chronicled changes in her middle level school that led to more positive student-teacher interactions, including grading for hope (i.e., allowing students to retest or submit late work, thereby eliminating the possibility of zeros for grade assignments) and using proactive discipline (e.g., Friday Academy, in which students facing in-school suspension were allowed to clean the school for two hours while discussing issues with volunteer teachers).

In addition to these works, multiple educational research studies have shown the impact of student-teacher interactions on various schooling outcomes for middle level and high school students. For example, in her mixed-methods study, Smart (2014) employed a sample of 223 sixth grade science students from a middle level in the southeastern U.S. to examine the relationship between these students’ perceptions of teacher-student interactions and student science motivation (i.e., mastery and performance goal orientation, efficacy, and value of learning science). In the quantitative phase of her study, Smart used subscales from both the Questionnaire on Teaching Interaction (QTI; Wubbels & Brekelmans, 2005) and the Patterns of Adaptive Learning Survey (PALS; Midgley et al., 2000). Statistically significant correlational findings emerged between middle level students’ perceptions of their teachers’ leadership and helping behaviors (i.e., providing detailed explanations, planning engaging activities, using humor throughout instruction, and being approachable and supportive) and the degree to which they engaged in science mastery learning (i.e., learning science because it is important), their valuing...
of science learning, and their science efficacy (i.e., the degree to which students believe they can do well in science). Moreover, significant associations also emerged between the middle level students’ perception of teachers as understanding (i.e., teachers being empathetic, being slow to get upset with students, and providing individual attention to students’ needs) and their science efficacy (Smart, 2014). The findings from Smart (2014) were further supported in the qualitative portion of the study, in which a subsample of the students reported that that their high motivation to learn and do well in science was due, in large part, to their teachers’ friendliness, leadership styles, and helpfulness in class.

These and other teacher characteristics and behaviors (i.e., respect for, interest in, and fair treatment of students, Matsumura et al., 2008; teachers being non-judgmental, Kennedy, 2011) have been conceptualized in the literature as teacher (affective) support (Anderman, Andrzejewski, & Allen, 2011; Sakiz, Pape, & Hoy, 2012) or teacher care (Perry, Liu, & Fabian, 2010; Tosolt, 2009) and understanding (Cooper & Miness, 2014). For example, den Brok, Fisher, and Koul (2005) conducted a study of teacher-student interpersonal behavior and students’ attitudes toward science and found that teacher interpersonal behavior explains more than 12% of the total variance in students’ attitudes toward science. In addition, Way and colleagues (2007) examined how students’ perceptions of school climate and teacher support changed during the middle grades. Data were taken from a larger, longitudinal study examining the role of educational environments. In their study, students completed questionnaires near the beginning of each school year for three years starting in sixth grade. Researchers administered subscales of the Perceived School Climate Scale to assess students’ perceptions of teacher support and school climate. Results revealed significant declines in students’ perceptions of teacher support as students progressed from sixth grade to eighth grade.

In a different study, teachers showing respect as part of their interactions with middle level students was associated with students not only feeling respected by teachers, but also showing respect to their teachers and to one another (Matsumura et al., 2008). In addition, with a sample of 285 middle level and high school students, Perry and colleagues (2010) found that the association between teacher support and school engagement was mediated by career preparation, which assessed students’ perceptions of their chosen career and the efficacy associated with it. Still, another study by Sakiz and associates (2012) found that middle level students with higher reports of teacher affective support also had a greater sense of school belonging, higher school enjoyment, lower academic hopelessness, and greater academic self-efficacy. These student-centered factors also promoted a greater sense of student effort within their classrooms.

Overall, this sample of empirical studies provides evidence of the importance of students’ perceptions of their interactions with teachers. The current study aims to add to this literature by examining the association between students’ perceptions of teacher interactions and school attachment, while addressing the role of a relatively understudied factor within the educational research on middle school, namely home-school dissonance.

**Home-School Dissonance**

Arunkumar and colleagues (1999) were one of the first educational researchers to define home-school dissonance, which is the observed difference between the home and school lives of students. Kumar (2006) advanced this definition of home-school dissonance by describing the phenomenon as the difference or perceived difference in the values, beliefs, and norms of students’ home and school environments. Specifically, Kumar (2006) wrote that “students experience home-school dissonance when their integrity and adequacy are threatened because of real or perceived differences between home/self and what is valued within the school context” (p. 254). Kumar (2006) also noted, “Students may also experience dissonance when the cultural values, beliefs and norms of their home contexts are incongruent with the school’s cultural values and norms. This conflict may result in cultural discontinuities between students and schools” (p. 254). It is important to note that the difference between home and school may not actually exist, but if a student perceives a difference between these two contexts, the psychological, affective, and behavioral impact on the student may be detrimental to him or her.

Several authors support such an assertion (Arunkumar et al., 1999; Baker, 2005; Kumar, 2006; Larocque, 2013; Markose & Hellsten, 2009; Tyler et al., 2008). For example, Baker (2005) indicated that students learn and process information by strategies they learn at home before entering school. If those strategies are devalued or deemed unacceptable when the students enter school, the results (i.e., the mindsets and corresponding behaviors resulting from the
discontinuation of preferred learning or procedural practices) may be devastating to students’ academic performance and anteceding affective and cognitive factors. Support for such a claim has been garnered by Arunkumar and colleagues (1999). Specifically, these researchers conducted a longitudinal study examining the relationship between students’ experiences of home-school dissonance, and their emotional and academic well-being. They sought to determine whether African American students experienced higher levels of home-school dissonance than European American students, and whether students who experienced high levels of dissonance had a lower grade point average (GPA) than those who experienced lower levels of dissonance. Researchers administered surveys in fifth grade and again in ninth grade. The results indicated no significant differences in home-school dissonance between African American and European American students, and no significant differences between boys and girls. The researchers did find, however, that students who reported high levels of home-school dissonance had lower GPAs than students who experienced low levels of home-school dissonance. They also found a main effect of ethnicity on GPA in which African American students received lower grades than European American students.

A later study by Kumar (2006) used path analysis to assess the predictive nature of classroom goal orientation on home-school dissonance, thus allowing home-school dissonance to be a criterion rather than a predictor variable. In that study with over 500 middle level students, findings revealed that classroom-based mastery goal structures did not directly predict home-school dissonance, whereas classroom-based performance goals did directly predict low scores on home-school dissonance. Furthermore, the effect of the classroom-based mastery goal structure on dissonance was indirect (i.e., mediated by students’ sense of belonging to school, which was also predictive of low dissonance scores). Kumar (2006) concluded by stating,

The beneficial effects of perceiving the classroom as mastery-focused increased students’ sense of belonging to the school community and thereby, decrease dissonance. On the other hand, perceiving an emphasis on performance goals in the classroom leads to both an exacerbation of home-school dissonance, and low sense of school belonging, thereby creating an overall sense of alienation within the school context. (p. 273)

The two path analytic examined in Kumar’s study included home-school dissonance as (1) a criterion variable for sense of belonging and (2) a predictor variable of sense of belonging, thereby promoting their reciprocal relationship. Specifically, Kumar’s data yielded a slightly larger regression coefficient for the prediction of home-school dissonance by sense of belonging than the prediction of sense of belonging by home-school dissonance. The associations, nonetheless, were significant and in the same direction (negative) across all tested models, thereby providing some support for the current study, which examines the relationship between home-school dissonance and school attachment among middle level youth. More recently and similar to the findings by Arunkumar and associates (1999) and Kumar (2006), Tyler and associates (2010) found that home-school dissonance reports among 239 African American high school students were predictive of academic cheating, disruptive classroom behavior, performance avoidant and performance approach goal orientations, and low grades in English and mathematics classes.

Given the above findings illustrating the association between home-school dissonance and cognitive factors related to school achievement, it is plausible that home-school dissonance may also be significantly associated with school attachment among middle level students in the current study.

Summary

School attachment becomes increasingly important to school adjustment and overall well-being and academic performance as students reach adolescence (Baker, 2005; Barber & Olsen, 1997; Battin-Pearson et al., 2000; Faircloth & Hamm, 2005; LeCroy & Krysik, 2008; Maddox & Prinz, 2003; McNeely, 2005; Van Ryzin et al., 2009). While the transition from elementary to middle grades is a critical time in the development of students, studies show that middle level students’ perceptions of the learning environment become more negative as they age (Booker, 2004; Gutman, Sameroff, & Eccles, 2002; Way et al., 2007). Existing literature identifies students’ perceptions of student-teacher interactions and home-school dissonance as potential factors in these negative perceptions of and experiences at school (Arunkumar et al., 1999; Baker, 2005; Booker, 2007; Fisher & Rickards, 1996; Fraser & Walberg, 2005; Gutman et al., 2002; Tyler et al., 2010).
The current study investigated the hypotheses that home-school dissonance is a significant predictor of school attachment and that student-teacher interactions will also predict school attachment. The major research question driving the current study is: Do student-teacher interactions and home-school dissonance, as reported by urban middle level students, predict school attachment? Contributions of the current study include an alternative measure of student-teacher interaction containing a broader operationalization of the construct. This allows for more information regarding the types of student-teacher interactions to be obtained. In addition, psychometric investigations of this instrument’s factor structure with a relatively large sample size will also contribute to the literature on home-school dissonance and school attachment.

Methods

Sample
Data for this investigation were obtained from a larger study in which researchers administered surveys to approximately 800 students in grades 6 through 8 in two Central Kentucky public middle schools with diverse student populations. After listwise deletion of cases with missing data, the final study sample consisted of 776 students ranging in age from 10 to 16 (mean age = 12.56, SD = .99) with 37% of the students attending School A and 63% of the students attending School B. Twenty-nine percent of the participants were sixth graders, 39% were seventh graders, and 31% were eighth graders. Males constituted 48.7% of the sample, while females constituted 51.3% of the sample. The sample was composed of 44.6% African Americans, 39.7% Caucasians, 5.5% Asian Americans, and 10.2% Latino/a. All demographic data were student reported.

Instruments
QTI. Researchers administered the QTI to assess middle level students’ perceptions of their interactions with their teachers. The questionnaire consists of 64 items on a 5-point Likert-type scale with options from 0 (never) to 4 (always). The items are divided into eight subscales, including leadership, helpful/friendly, understanding, student responsibility/freedom, uncertain, dissatisfied, admonishing, and strict. The eight subscales of the QTI describe the extent to which the teacher is perceived to have or demonstrate certain behavioral characteristics (Coll, Taylor, & Fisher, 2002; Fisher & Rickards, 1996). The characteristics of each are described as follows: Leadership describes the extent to which the teacher leads, organizes, gives orders, and determines procedures and structures in the classroom. Helpful/friendly describes the extent to which the teacher shows interest, behaves in a friendly or considerate manner, and inspires confidence and trust. Understanding describes the extent to which the teacher listens with interest, demonstrates empathy, shows confidence and understanding, and is open with students. Student responsibility/freedom describes the degree to which the teacher provides opportunities for independent work, and gives freedom and responsibility to students. Uncertain describes the extent to which the teacher behaves in an uncertain manner and keeps a low profile. Dissatisfied describes the degree to which the teacher expresses dissatisfaction, criticizes, and looks unhappy. Admonishing describes the level at which the teacher gets angry, expresses irritation and anger, or forbids and punishes. Strict describes the extent to which the teacher checks on students, maintains silence, and strictly enforces the rules. The questionnaire instructs students to respond to a statement on a scale with five choices, A through E, with A being Never and E being Always. The scoring guide indicates that items are scored as follows: 0 for A, 1 for B, 2 for C, 3 for D, and 4 for E. The subscale item scores are added, and the sum is divided by the number of items. Reliability of the QTI has been described as good and ranged from 0.58 to 0.90 in existing studies (Coll et al., 2002; Den Brok, Brekelmans, & Wubbels, 2004).

The home-school dissonance scale (HSD). The HSD (Arunkumar et.al., 1999; Kumar, 2006) was used to measure students’ perceptions of home-school dissonance. Specifically, six items are used to measure students’ concern or discomfort due to differences between their home lives and school lives. The items are on a 5-point Likert-type scale with responses ranging from 1 (not at all true) to 5 (very true). Students were asked to respond to statements such as, “I don’t like to have my parents come to school because their ideas are very different from my teachers’ ideas.” To obtain the home-school dissonance scale score, scores are summed and yield a total score ranging from 5 to 25. To ease interpretation, the scale scores are then averaged to be on the same metric as the response scores. A higher score indicates a higher perception of home-school dissonance. The HSD has good internal consistency with an alpha of
School attachment questionnaire (SAQ). The SAQ (Mouton et al., 1996) was administered to assess students’ attachment to school. The questionnaire consists of 20 items on a 5-point Likert-type scale with options from 1 (strongly disagree) to 5 (strongly agree). The survey was designed for middle and high school students. Students are instructed to respond to simple, declarative statements (i.e., “People at school like me.”). Scores ranging from 20 to 100 are summed and comprise an attachment score. For ease of interpretability, the scale scores are averaged so the attachment scores and response scores are on the same metric. A higher score indicates greater attachment to school. The SAQ has been found to be internally consistent, as demonstrated by a Cronbach’s alpha of 0.86 (Mouton, Dewitt, & Glazier, 1993, as cited in Mouton et al., 1996). No further psychometric data have been reported by these authors.

Procedures
Approval was granted by the Institutional Review Board of the researcher’s university and the participating school districts. Due to the age of participants, written informed consent was obtained from the legal guardian of the participants, and written assent was obtained from the participants prior to completing the survey. Convenience sampling procedures were used to recruit study participants. The research team was comprised of an assistant professor and eight graduate students trained as research assistants. Seven members of the research team, including a faculty member, were African American. Two members were Caucasian. The survey instruments were administered by the research team to participants in Language Arts classrooms in two 45-minute sessions on different days. Students were told that the survey was not a test, and there were no right or wrong answers. They were also assured that their answers would be kept confidential, and individual data would not be shared with schoolteachers or school administrators.

Study hypotheses and data analysis plan
The current investigation tested the following non-directional hypotheses:
1. Middle level students’ perceptions of teachers exhibiting certain behaviors will predict students’ school attachment. These behaviors are indicated below:
   a. Middle level students’ perceptions of teachers exhibiting leadership behaviors will predict students’ school attachment.
   b. Middle level students’ perceptions of teachers exhibiting helpful/friendly behaviors will predict students’ school attachment.
   c. Middle level students’ perceptions of teachers exhibiting understanding behaviors will predict students’ school attachment.
   d. Middle level students’ perceptions of teachers exhibiting student/responsibility freedom behaviors will predict students’ school attachment.
   e. Middle level students’ perceptions of teachers exhibiting uncertain behaviors will predict students’ school attachment.
   f. Middle level students’ perceptions of teachers exhibiting dissatisfied behaviors will predict students’ school attachment.
   g. Middle level students’ perceptions of teachers exhibiting admonishing behaviors will predict students’ school attachment.
   h. Middle level students’ perceptions of teachers exhibiting strict behaviors will predict students’ school attachment.

2. Middle level students’ perceptions of home-school dissonance will predict students’ school attachment.

Descriptive analyses of demographic data related to teacher interactions, home-school dissonance, and school attachment were examined to identify missing data and outliers. A variance inflation factor was conducted to test for multicollinearity between and among variables. Factor analysis and internal consistency reports were generated with all study measures. A multivariate analysis of variance (MANOVA) procedure was performed to determine if there were significant differences in students’ perceptions of teacher interactions and students’ perceptions of home-school dissonance based on ethnicity, gender, and grade level. If interaction effects were present, interaction terms were created for inclusion in regression analyses. Multiple regression analyses were conducted to determine the predictive capabilities of middle students’ perceptions of teacher interactions and middle students’ perceptions of home-school dissonance on students’ school attachment. The demographic variables (i.e., gender, ethnicity, and grade level) were entered in Step 1 of the regression model, followed by home-
school dissonance in Step 2, and teacher interactions in Step 3.

Results

Study results are reviewed below and are presented as follows: (a) pre-analysis data screening, (b) descriptive statistics for study variables, (c) scale factor analysis for each scale used in the study, (d) correlation analyses to test for multicollinearity among and between the predictor and criterion variables of interest, (e) MANOVA used to examine between and within group differences, and (f) multiple regression analysis used to determine which variable(s) predict school attachment in middle level students.

Pre-Analysis Data Screening

The researchers screened the data to identify missing data and outliers, and to evaluate the fulfillment of test assumptions of normality, linearity, and homoscedasticity. Descriptive statistics of all demographic variables and individual survey items were run, and the output was visually checked to verify accuracy of data entry. Scatterplots indicated linearity and normality. Univariate normality was assessed with histograms and normality tests. Multivariate normality and homoscedasticity assumptions were examined through the generation of residual plot and were met within the data.

Descriptive Statistics

Demographic variables. Descriptive statistics for demographic variables were examined and are presented in Table 1.

Factor Structure—QTI

A principal components analysis was conducted on the QTI utilizing the Kaiser criterion of eigenvalues greater than or equal to 1.0 and factor loadings greater than or equal to .35 to determine the number of factors to be extracted and the percentage of variance accounted for. While an eigenvalue equal to or greater than 1.0 is standard in determining the possible number of factors to be interpreted in factor analytic procedures (Stevens, 2001; Tabacknick & Fidell, 2007), there are more stringent criteria for determining the significance of specific factor loadings. Specifically, Stevens (2001) recommended that (1) components with four or more loadings above .60 are reliable, regardless of sample size; (2) components with 10 or more low loadings (i.e., <.40) are reliable as long as the sample size is greater than 150 (n = 150); and (3) components with only a few low loadings should not be interpreted unless the sample size is at least 300 (n = 300). Thus, with a sample size of over 700 middle level students in the current study, a factor loading criterion of .35 was set in order to maximize the number of loadings that could be interpreted.

The results generated a six-component solution with eigenvalues greater than or equal to 1.0 and factor loadings greater than .35, which accounted for 45.5% of the variance. The components were comprised of 51 of the 64 original scale items and had an overall alpha reliability coefficient of .86. Since the components and items composing each factor were different from the original QTI scale items, the components were assigned variable names based on the content of the six items converged. The new QTI components and the characteristics of each are described as follows: TI_Critical/Passive describes the extent to which the teacher criticizes students or behaves in an uncertain or passive manner. TI_Supportive describes the extent to which the teacher shows support and understanding, and is open with students. TI_Pleasant describes the degree to which teachers behave in a friendly, considerate manner with students. TI_Demanding describes the extent to which the teacher determines procedures and structures in the classroom. TI_Caring describes the degree to which the teacher demonstrates empathy, concern, and kindness for students. TI_Cooperative describes the degree to which teachers provide opportunities for students to be involved in decisions in the classroom. The scale items and factor loadings of the six new components along with the eigenvalues, percentage of variance accounted for, and alpha coefficients for each of the six components are shown in Table 2. Alpha reliability coefficients for each new QTI subscale were within the acceptable range (.73 – .93).

Factor Structure—HSD

Factor analysis of the HSD scale produced only one component that accounted for 42.74% of the variance. All the items from the original scale loaded onto the single factor. The result of the factor analysis is consistent with the construction of the scale which is designed to assess one construct: students’ perceptions of home-school dissonance (Midgley et al., 2000). The alpha coefficient for the HSD was .73.

Factor Structure—SAQ

The initial principal components factor analysis of the SAQ revealed four components with eigenvalues greater than or equal to 1.0 and factor loadings
Table 1
Descriptive Statistics for Study Variables (Demographic, Predictor, Criterion)

| Variable                  | N     | Percentage |
|---------------------------|-------|------------|
| School                    |       |            |
| School A                  | 288   | 37.1       |
| School B                  | 488   | 62.9       |
| Age                       |       |            |
| 10                        | 4     | 0.5        |
| 11                        | 118   | 15.2       |
| 12                        | 244   | 31.4       |
| 13                        | 264   | 34.0       |
| 14                        | 136   | 17.5       |
| 15                        | 6     | 0.8        |
| 16                        | 1     | 0.1        |
| Gender                    |       |            |
| Male                      | 378   | 48.7       |
| Female                    | 398   | 51.3       |
| Class rank                |       |            |
| 6th grade                 | 227   | 29.3       |
| 7th grade                 | 305   | 39.3       |
| 8th grade                 | 244   | 31.4       |
| Race/Ethnicity            |       |            |
| African American          | 346   | 44.6       |
| Caucasian                 | 308   | 39.7       |
| Asian American            | 43    | 5.5        |
| Latino                    | 79    | 10.2       |

| Variable                  | n    | M    | SD   | SE   | Skew  | α    |
|---------------------------|------|------|------|------|-------|------|
| Teacher interactions      |      |      |      |      |       |      |
| TI_Critical/Passive       | 776  | 1.31 | 0.79 | 0.09 | 0.18  | .932 |
| TI_Supportive             | 776  | 2.21 | 0.85 | 0.09 | −0.69 | .812 |
| TI_Pleasant               | 776  | 2.23 | 0.90 | 0.09 | −0.56 | .835 |

(Continued)
greater than or equal to .35. When multiple rotations were conducted to allow items to converge on factors, the rotations resulted in a four-component solution in which two components included both high positive and high negative loadings. Due to difficulty of interpretation, the scale items included in the two bipolar components (Components 2 and 3) were eliminated. The result of the factor analytic procedures was a 10-item, two-component solution with factor loadings greater than .40 and eigenvalues of 4.23 and 1.21, which accounted for 42.19% and 12.13% of the variance, respectively. Reverse-coded items are indicated by (R) after the statement in Table 3. The alpha coefficient for the ten items retained was .84, while the independent alpha reliability coefficients for each SAQ subscale used were in the acceptable range (.71 and .81). The new components were named based on the content of the questions comprising each. The first new factor, SA_FeelsLiked, describes the extent to which students felt they were liked or cared about by others at school. SA_Connection is the second new factor, which describes the degree to which students felt connected to school or people at school. The retained items with the corresponding factor loadings and the percentage of variance for each school attachment factor are shown in Table 3.

Correlational Analysis
A correlational analysis was conducted to examine the relationship among study variables. Some important findings of correlations include the following: Home-school dissonance is significantly correlated with TI_Critical-Passive, TI_Demanding, and SA_Feels-Liked (p < .05). Except for TI_Critical-Passive versus TI_Pleasant/TI_Caring, other pairs of QTI scores are highly correlated with each other (p < .05), which calls attention to collinearity among these variables. To address this, a regression analysis was conducted, and the variance inflation factor statistic was computed for each criterion variable to assess multicollinearity. The collinearity test was employed to see if there is a collinearity issue among the variables. Based on a tolerance greater than 0.10 and a variance inflation factor less than or equal to 10, all the predictor variables were tolerated in the model, thereby eliminating the possible collinearity issue. Table 4 shows the correlation coefficients for the study variables.

MANOVA
A MANOVA was conducted to examine differences between and within student groups based on gender, grade level, and race. The Box’s M test of equality of covariance was significant, indicating the assumption of equal variances was violated, F(720, 37293.23) = 1.34, p = .000; therefore, Pillai’s Trace was used as the test statistic, and significance levels were tested at the p = .001 level (Mertler & Vannatta, 2005). The Pillai’s Trace indicated significant main effects for grade level, Λ = .08, F(18, 1444) = 3.18, p = .000, multivariate η² = .04. Univariate ANOVA results revealed TI_Critical/Passive significantly differed by grade, F(2, 729) = 9.93, η² = .03, p = .000. TI_Caring also significantly differed by grade, F(2, 729) = 7.88, p = .000, η² = .03. Further, the Pillai’s Trace indicated significant main effects for race, F(27, 2169) = 2.46, p = .000, multivariate η² = .03. Results of between-subject effects revealed that TI_CriticalPassive...
Table 2
Factor Analysis of New QTI Components

| Components | Factor loading |
|------------|----------------|
| T1_Critical/Passive (Eigenvalue = 10.98; %Var. = 21.53; α = .93) | |
| 44. Most of my teachers are not sure what to do when I fool around. | .721 |
| 39. Most of my teachers act as if they don’t know what to do. | .707 |
| 42. Most of my teachers let me boss them around. | .699 |
| 28. Most of my teachers put us down. | .688 |
| 46. It is easy to make a fool out of most of my teachers. | .676 |
| 19. Most of my teachers try to make us look foolish. | .624 |
| 26. Most of my teachers are unhappy. | .616 |
| 34. Most of my teachers are hesitant. | .615 |
| 27. Most of my teachers let us fool around in class. | .609 |
| 33. Most of my teachers let me get away with a lot in class. | .599 |
| 12. Most of my teachers think I don’t know anything. | .588 |
| 23. Most of my teachers seem uncertain. | .583 |
| 30. Most of my teachers think I can’t do things well. | .568 |
| 55. Most of my teachers are timid. | .561 |
| 59. It is easy to pick a fight with most of my teachers. | .549 |
| 54. Most of my teachers seem dissatisfied. | .538 |
| 51. Most of my teachers have a bad temper. | .521 |
| 24. Most of my teachers look down on me. | .519 |
| 43. Most of my teachers are impatient. | .515 |
| 10. Most of my teachers think I cheat. | .512 |
| 16. Most of my teachers get angry unexpectedly. | .511 |
| 58. Most of my teachers are suspicious. | .488 |
| T1_Supportive (Eigenvalue = 6.36; %Var. = 12.47; α = .81) | |
| 15. Most of my teachers help me with my work. | .702 |
| 18. Most of my teachers sympathize with me. | .668 |
| 13. If I want something, most of my teachers are willing to cooperate. | .655 |
| 17. If I have something to say, most of my teachers will listen. | .611 |
| 29. Most of my teachers take a personal interest in me. | .527 |

(Continued)
Table 2
(Continued)

| Components                                      | Factor loading |
|-------------------------------------------------|----------------|
| 21. I can influence most of my teachers.        | .483           |
| 31. Most of my teachers explain things clearly. | .481           |
| 11. Most of my teachers are willing to explain things again. | .464 |
| 4. Most of my teachers trust me.                | .441           |
| TI_Pleasant (Eigenvalue = 2.00; %Var. = 3.99; $\alpha$ = .83) |
| 56. Most of my teachers are patient.            | .641           |
| 60. Most of my classes are pleasant.            | .636           |
| 50. Most of my teachers can take a joke.        | .609           |
| 62. Most of my teachers act confidently.        | .572           |
| 47. Most of my teachers have a sense of humor.  | .520           |
| 52. Most of my teachers are good leaders.       | .504           |
| TI_Demanding (Eigenvalue = 1.67; %Var. = 3.28; $\alpha$ = .73) |
| 9. Most of my teachers are demanding.           | .669           |
| 20. Most of my teachers’ standards are very high. | .604 |
| 1. Most of my teachers are strict.              | .587           |
| 14. Most of my teachers’ tests are hard.        | .530           |
| TI_Caring (Eigenvalue = 1.25; %Var. = 2.44; $\alpha$ = .86) |
| 45. Most of my teachers know everything that goes on in the classroom. | .581 |
| 37. Most of my teachers are someone I can depend on. | .556 |
| 40. Most of my teachers hold our attention.     | .509           |
| 36. I learn a lot from most of my teachers.     | .503           |
| 35. Most of my teachers are friendly.           | .492           |
| 32. Most of my teachers realize when I don’t understand. | .370 |
| TI_Cooperative (Eigenvalue = 1.15; %Var. = 2.62; $\alpha$ = .74) |
| 5. Most of my teachers are concern when I have not understood. | .627 |
| 3. Most of my teachers talk enthusiastically about the subject. | .603 |
| 8. I can decide some things in class.           | .563           |
| 6. If I don’t agree with our teachers, I can talk about it. | .527 |
significantly differed for grade level, $F(2, 752) = 9.93$, $p < .001$, partial $\eta^2 = .03$, and race, $F(3, 752) = 8.21$, $p < .001$, partial $\eta^2 = .03$. TI_Caring was also significant for grade level, $F(2, 752) = 9.67$, $p < .001$, partial $\eta^2 = .03$. There were no other significant differences by grade or race, and no significant differences revealed for gender.

Post hoc analyses were conducted to uncover specific differences between and within student groups. Examination of the Tamhane’s T2 post hoc analysis revealed that eighth grade students perceived more critical/passive teacher interactions than sixth graders. Results also indicated that sixth graders perceived more caring teacher behaviors than seventh and eighth graders. Results further revealed that African American students perceived more critical/passive teacher behaviors than their Caucasian and Asian American peers. No other between-group differences were found.

### Regression Analysis

Separate multiple regression analyses were conducted to determine the predictive capabilities of middle level students’ perceptions of teacher interactions and home-school dissonance on each measure of school attachment (SA_Feels-Liked and SA_Connection). The variables were entered in the model in the order in which they were expected to contribute to change in the outcome variable (i.e., from least to most). The demographic variables (gender, grade level, and race) were entered in Step 1 as control variables to isolate their effects. Home-school dissonance was entered in Step 2, and the teacher interaction variables (TI_Critical/Passive, TI_Supportive, TI_Pleasant, TI_Demanding, TI_Caring, and TI_Cooperative) were entered in Step 3 of the regression model.

**SA_Feels-Liked.** The results of the regression model for SA_Feels-Liked revealed middle level students’ perceptions of home-school dissonance significantly predicted school attachment, $R^2 = .014$, $R^2_{adj} = .01$, $F(4, 748) = 2.712$, $p < .05$. Students’ perception of home-school dissonance accounted for only 7% of the variance in SA_Feels-Liked. Specifically, students’ perception of pleasant teacher interactions was a significant predictor, $\beta = .19$, $t(742) = 3.25$, $p < .05$. Students’ perception of demanding teacher interactions was also a significant predictor, $\beta = .12$, $t(742) = 2.67$, $p < .05$. Students’ perception of critical/passive teacher behaviors was also significant, $\beta = -.128$, $t(742) = -2.88$, $p < .05$. Perceptions of home-school dissonance was

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**Table 3**  
Factor Analysis of 10-Item SAQ

| Scale items  | Factor loading |
|--------------|----------------|
| 20. No one at school likes me. (R) | .798 |
| 3. The other kids at school don’t like me. (R) | .767 |
| 15. No one wants to talk to me at school. (R) | .757 |
| 10. There is no one at school who cares about me. (R) | .655 |
| 8. People at school like me. | .577 |
| 6. There are things I like to do at school. | .777 |
| 19. I care about the people at school. | .654 |
| 17. At school, I have people to hang out with. | .645 |
| 5. I talk to a lot of people at school. | .605 |
| 9. People notice when I miss school. | .520 |

Component 1: SA_FeelsLikeda (Eigenvalue = 4.23; %Var. = 42.29; $\alpha = .81$)

Component 2: SA_Connection (Eigenvalue = 1.21; %Var. = 12.19; $\alpha = .71$)

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|                  | HS Dissonance | TI_Critical Passive | TI_Supportive | TI_Pleasant | TI_Demanding | TI_Caring |
|------------------|---------------|---------------------|---------------|-------------|--------------|----------|
| TI_CriticalPassive | .330***       |                     |               |             |              |          |
| TI_Supportive    | -.004         | .061*               |               |             |              |          |
| TI_Pleasant      | -.048         | .018                | .697***       |             |              |          |
| TI_Demanding     | .167***       | .520***             | .340***       | .280***     |              |          |
| TI_Caring        | -.045         | -.004               | .764***       | .766***     | .302***      |          |
| TI_Cooperative   | -.019         | .084*               | .689***       | .576***     | .318***      | .626***  |

*p < .05; **p < .01; ***p < .001
significant in its prediction of SA_Feels-Liked at Step 2 in the model, $\beta = -0.088$, $t (742) = -2.42$, $p < .05$, but not at Step 3 in the model, $\beta = -0.06$, $t (742) = -1.63$. A summary of the regression analysis for variables predicting SA_Feels-Liked is presented in Table 5.

**SA_Connection.** The results of the regression model for SA_Connection indicated middle level students’ perceptions of teacher interactions also significantly predict school attachment, $R^2 = .11$, $R^2_{adj} = .10$, $F (10, 742) = 9.01$, $p < .001$. Teacher interactions and student demographic variables accounted for approximately 11% of the variance in SA_Connection. Student gender was a significant predictor of school attachment at each step of the model. At Step 1, gender was significant, $\beta = .11$, $t (742) = 3.05$, $p < .05$. At Steps 2 and 3, gender was also significant, $\beta = .112$, $t (742) = 3.09$, $p < .05$, and $\beta = .10$, $t (742) = 2.95$, $p < .05$, respectfully. Class rank was a significant predictor of school attachment at Steps 1 and 3 but not at Step 2, $\beta = .07$, $t (742) = 2.00$, $p < .05$, and $\beta = .10$, $t (742) = .05$.
Students’ perceptions of three teacher interaction variables (i.e., critical/passive, pleasant, and demanding) were significant predictors of school attachment with critical/passive interactions having a negative impact, $\beta = -0.13$, $t(742) = -2.96$, $p < .05$. Students’ perceptions of pleasant and demanding teacher interactions had a positive impact on school attachment, $\beta = 0.22$, $t(742) = 4.03$, $p < .001$, and $\beta = 0.13$, $t(742) = 3.00$, $p < .05$, consecutively. When added in Step 3, students’ perception of home-school dissonance was a significant predictor of school attachment with a positive impact, $\beta = 0.09$, $t(742) = 2.38$, $p < .05$. There were no significant interactive effects of gender, grade level, or race on the dependent variables. A summary of the regression analysis for variables predicting SA_Connection is presented in Table 6.

**Discussion**

The researchers examined whether middle level students’ perceptions of teacher interactions and home-school dissonance predict school attachment.
The first set of hypotheses was only partially supported by the results. Specifically, findings revealed that teacher interaction variables assessed in this study (i.e., critical/passive, pleasant, and demanding) were the only significant predictors of school attachment in middle level students. Students’ perceptions of pleasant teacher interactions, along with their perceptions of teachers as demanding, predicted students’ attachment to school. The strongest predictor of feeling connected and feeling liked at school (i.e., SA_Connection and SA_FeelsLiked) was middle level students’ perceptions of pleasant teacher interactions. Additionally, students’ perceptions of their teachers as critical or passive were predictive of lower school attachment scores. These findings reflect previous qualitative and quantitative studies that have shown the unique impact student-teacher interactions may have on middle level students’ sense of attachment to school (Matsumura et al., 2008; Perry et al., 2010; Smart, 2014; Tosolt, 2009).

Hypothesis two (i.e., Middle level students’ perceptions of home-school dissonance will predict students’ school attachment) was only partially supported by the study results. Specifically, students’ reported perception of home-school dissonance was a significant predictor of school attachment in only the SA_Feels-Liked dimension. When the student-teacher interaction variables were added to the model, however, home-school dissonance was no longer a significant predictor. Similar to findings from Kumar (2006), this finding in the current study may be an indication that student-teacher interactions can minimize the effects of students’ perceptions of home-school dissonance. For the SA_Connection dimension, students’ perception of home-school dissonance was a significant predictor of school attachment but only when added to the regression model containing student-teacher interaction perceptions. Again, such a finding illustrates the powerful impact of students’ perceptions of teacher interactions on their attachment to school. It is clear that even when home-school dissonance is shown to predict lower scores on various types of school attachment, the interactions that students have with their teachers or at least the perception that their teachers are pleasant and demanding can significantly predict perceptions of school attachment (Kumar, 2006).

Though not hypothesized, some results revealed significant differences in students’ perceptions of teacher interactions based on race. Specifically, African American students perceived more critical/passive teacher interactions than their Caucasian and Asian American peers. Results were consistent with existing research indicating significant differences in schooling experiences between African American and Caucasian students (Casteel, 1998; Okonofua & Eberhardt, 2015; Skiba et al., 2011; Skiba, Michael, Nardo, & Peterson, 2002). For example, in his study on 417 seventh grade students, Casteel (1998) found that African American students had more negative interactions with their White teachers than did White students, who received more praise and assistance than their African American counterparts. Skiba and associates (2002, 2011) reported similar findings. Using regional and national K–8 grade data, these researchers have shown that African American students received disciplinary referrals for more subjective activities resulting from teachers’ perceptions, typically during an interaction (e.g., disrespect, threat, noncompliance), while their White counterparts received disciplinary referrals for more concrete, disruptive activities such as smoking and vandalism. Most recently, Okonofua and Eberhardt (2015) conducted a study with 204 K–12 classroom teachers examining the discipline referral practices and perceptions of hypothetical White and African American students labeled as “troublemakers.” The researchers showed that teachers were more likely to label African American students engaged in disruptive behaviors as troublemakers, believed that the misbehavior was indicative of a pattern of disruptive classroom behavior, and recommended school suspension for the African American troublemakers significantly more than their White troublemaking counterparts.

Though findings in the current study showed statistically significant differences in student-teacher interaction reported by race, there were no significant differences in students’ perceptions of home-school dissonance per any other demographic variables in the study. These findings are consistent with existing research results indicating that African American students do not experience higher levels of home-school dissonance than European students (Arunkumar et al., 1999). Specifically, Arunkumar and associates (1999) examined differences in perceptions of home-school dissonance reported by African American and European American middle-level students. They showed that students reporting high levels of home-school dissonance also reported lower levels of future hopefulness, academic efficacy, self-esteem, and GPA. These students also reported...
higher levels of anger and self-deprecation (Arunkumar et al., 1999). Results also revealed significant main effects for grade level. Specifically, eighth graders perceived teachers to be more critical and passive than sixth graders. Sixth grade students perceived teachers to be more caring than seventh and eighth grade students. Findings related to grade level were consistent with existing research that suggests middle level students’ perceptions of the learning context become more negative as they progress (Goodenow, 1993; Way et al., 2007). Results indicated no significant differences in students’ perceptions of home-school dissonance between or within grade levels.

**Study Limitations**

Results of this study indicate that students’ perceptions of teacher interactions significantly predict their attachment to school. The final regression model, however, showed that these perceived interactions with teachers predicted only a small amount of the variance in school attachment. Therefore, these results should be interpreted with caution. Also, results from all the items on the original SAQ were not utilized because the instrument contained bipolar components (i.e., high positive and high negative poor factor loadings) with the current study sample. Specifically, it is uncertain why two of the four components proved to be bipolar components, which limited a clear interpretation of the latent school attachment factors. Though the original SAQ authors did not identify discernible, psychometric-based factors in their first publication (Mouton et al., 1996), a recent study examining the factor structure of the SAQ with a Malaysian student sample showed that the initial SAQ reflected three distinct factors (general relationship, sense of belongingness, and specific attachment) (Bakar, 2012). Similarly, factor analysis of the SAQ in the current study revealed four components, but the bipolar nature of two of these components did not render the components interpretable.

Moreover, there seemed to be conceptual similarities between the two school attachment factors yielded in the current study and those determined in this previous study (connection and feeling liked/accepted versus general relationship, sense of belongingness, and specific attachment; Bakar, 2012). Without the publication of the latter study’s factor loadings for each SAQ scale item, it is difficult to determine whether the two factors generated in the current study actually replicate those from the previous study (i.e., Bakar, 2012). Therefore, the modified version of the SAQ used in the current study limits the generalization of this study’s findings to other studies examining school attachment using the SAQ (e.g., Bakar, 2012).

Regarding home-school dissonance, the complexities of the construct are not fully captured by the measure in its current form. For example, it is unclear whether the perception of dissonance between home and school are linked to issues regarding culture, learning preference, social interaction, or perhaps a combination of these factors. Some research has suggested that the perceived dissonance between home and school is predicated on observed and preferred cultural-valued-based behaviors, structures, social interactions, and modes of operation (Larocque, 2013; Markose & Hellsten, 2009; Tyler et al., 2008). These factors, however, are not presented specifically in the home-school dissonance scale items. Thus, the understanding that there is some degree of home-school dissonance is ascertained in studies using this instrument, but what is actually being discontinued at school is not made clear.

**Implications**

Findings of this study have implications for teachers and administrators. Middle level students’ perceptions of teachers significantly predict school attachment. Thus, school personnel should focus on promoting caring interactions that maintain a strong sense of integrity, respect, and high expectations. Such focus would also reduce teacher interactions with students that may be perceived as critical or passive. Teachers who interact with students in a pleasant and caring manner while maintaining high standards would be the most effective in the middle grades.

Since the findings of this study reveal that African American students perceive more critical/passive teacher interactions, teachers would benefit from professional development training emphasizing culturally relevant pedagogy (Gay, 2000), particularly throughout curricula, instructional methods, school procedural policy and operation, formal and informal assessment, and certainly student-teacher interaction protocol. Culturally relevant teaching has long been championed as a framework that promotes greater understanding and inclusion of diverse cultural orientations of students of color (Emdin, 2016; Gay, 2000). Professional development training, along with long-term curriculum and classroom procedural modifications that reflect teachers’ (both pre-service...
and in-service) greater understanding of the distinct value systems and corresponding behaviors of students of color, would likely enhance the classroom experiences of middle level students of color, specifically by augmenting the level of positive interactions they have with their teachers.

Researchers have shown that many teachers tend to penalize or wrongly assess/accuse students of color for engaging in behaviors they deem to be threatening or uncondusive to school success (Tyler, Boykin, & Walton, 2006; Tyler et al., 2008). Most of these behaviors, however, (1) have been shown to be preferred by these students, (2) are part of the students’ cultural value-based socialization experiences outside of the classroom, and (3) facilitate the development of cognitive skills (Allen & Boykin, 1992; Gay, 2000; Tyler et al., 2006, 2008). Misunderstanding these cultural values and their behavioral expressions can often cause teachers to view students who display these behaviors negatively. Teachers’ negative perceptions of these students likely precede their interactions with students of color. As a result, it is probable that the negative perception of the student and/or his/her behavior may inform the interaction he or she has with his or her classroom teacher. Ongoing exposure to culturally relevant pedagogy strategies throughout the school year and certainly within all aspects of the middle level enterprise (i.e., curriculum, assessment) could result in more positive schooling experiences for African American students in particular and students of color in general.

Further, results indicating significant differences in students’ perceptions of teacher interactions by grade level provide implications for teachers and administrators to implement professional development activities and programs to focus on improving teacher-student relationships as students matriculate through middle level schooling. Although students’ perceptions of teacher interactions predict a small percentage of the variance in school attachment, these findings also have implications of the long-term impact on student-teacher interactions. Finally, while students’ perception of home-school dissonance was a significant predictor of school attachment in the middle grades, results indicated that teacher interactions buffer its impact. Thus, it is imperative that positive student-teacher interactions occur throughout middle level students’ matriculation as they provide a positive sense of school attachment. This sense of school attachment can reduce attitudes and behaviors that promote school disengagement and disruptive behaviors (Beaty-O’Ferrall et al., 2010; Brennan, 2015).

Recommendations for Future Research
Research indicates that students’ perceptions of their interactions with teachers are good predictors of their overall schooling experiences (Goodenow, 1993; Matsumura et al., 2008; Osterman, 2000). There is a need for more research of students’ perceptions of their learning environment. The results of this study contribute to the literature by providing middle level students’ perceptions of home-school dissonance and student-teacher interactions. It is recommended that researchers continue to conduct studies examining the non-academic factors that impact students’ attachment to school and related student academic outcomes. Borrowing from several studies, including Kumar (2006) who assessed the role of classroom goal orientation and its association with school belongingness among middle level students, researchers should consider measuring additional in-school variables that may predict students’ attachment to school (e.g., perception of classroom achievement goal orientation). Such would explain additional variance in school attachment. In addition, future research studies should ask students to provide perceptions of specific teachers rather than their perceptions of teachers in the overall learning environment. Collecting and analyzing data based on teacher variables such as gender, race, age, and teaching experience may uncover additional information about students’ perceptions as they relate to specific teacher variables. These findings would provide valuable information to teachers and administrators when developing professional enrichment activities. Such activities could, in turn, enhance middle level students’ sense of attachment to school, and thus, improve their overall schooling experiences.

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