A Longitudinal Study of School Identity and Academic Motivation across High School

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Abstract

The purpose of this longitudinal study was to examine how school identity changes over the four years of high school, and how it is associated with academic achievement and motivation. Students from Latin-American, Asian, and European backgrounds participated (N = 572; age span = 13.94 to 19.15 years). In ninth grade, girls' school identity was higher than boys'. Over the course of high school, however, girls' school identity declined, whereas boys' remained stable. Within-person longitudinal analyses indicated years in which students had higher school identity were also years in which they felt that school was more enjoyable and more useful, above and beyond their actual level of achievement in school. Results highlight the importance of identification with educational institutions for maintaining students' academic engagement during the teenage years.

Keywords: adolescent development, high school, school identity, academic motivation, longitudinal

A Longitudinal Study of School Identity and Academic Motivation across the High School Years

School identity can be defined as students' psychological attachment to their academic communities, and the strength of students' school identities is generally associated with their academic behaviors and motivations (E. M. Anderman, 2002; Goodenow & Grady, 1993). Late adolescence, when students are in high school, may be a time when school identity is critically important. High school students, for example, reach the age at which education is no longer compulsory, and the extent to which students maintain school identity may predict whether or not they leave high school prematurely, a decision which can have life-long social and economic implications (Finn, 1989; Rouse & Kemple, 2009). Despite the importance of school identity during this developmental period, most school identity research has been conducted with children and early adolescents, leaving school identity among middle and late adolescents relatively unexplored.

In particular, little is know about what happens to school identity over the course of high school and the extent to which school identity is truly associated with academic achievement and values among high school students from different ethnic backgrounds. Although findings from early adolescence suggest that students may become progressively less connected to school over time, key differences between early and middle to late adolescence suggest that declines in school identity that occur in middle school may not continue into high school (L. H. Anderman, 2003; Green, Rhodes, Hirsch, Suarez-Orozco, & Camic, 2008). Furthermore, although school identity is often found to be associated with academic achievement and values (Pittman & Richmond, 2007; Roeser, Midgley, & Urdan, 1996), there are some inconsistencies in these findings (Booker, 2006; Dotterer, McHale, & Crouter, 2007).

In order to address the limitations of previous school identity work, the current study followed a diverse group of students across each year of high school. This longitudinal study was specifically designed to investigate two questions: (1) Does school identity tend to decline over the course of high school and (2) Do high school students' school identities translate into higher academic achievement and motivation?

Development of School Identity

Although there is individual variability in how school identity changes over the course of development, students' school identities tend to decline from childhood to early adolescence (L. H. Anderman, 2003; L. H. Anderman & Anderman, 1999). In childhood, when students are in elementary school, reports of school identity tend to be universally high (Fredricks, Blumenfeld, Friedel, & Paris, 2005; Morrison, Cosden, O'Farrell, & Campos, 2003). As students enter adolescence, average school identity tends to drop significantly, especially among students transitioning into middle school (Eccles, Wigfield et al., 1993). And across the course of the early adolescence, school identity generally continues to decline (E. M. Anderman, 2002; Ding & Hall, 2007).

Unlike research from childhood and early adolescence, the limited school identity research in middle to late adolescence offers mixed findings. All available studies are based on cross-sectional data, and while some studies suggest that school identity continues to decline over the course of high school, others suggest that school identity remains stable or increases slightly (Meeus & Dekovic, 1995; Whitlock, 2006). Unfortunately, even turning to an examination of the apparent reasons why school identity declines across development offers equivocal predictions for what might happen in late adolescence. As argued by stage-environment fit theory, one reason for the drop in school identity among early adolescents is a

relatively ubiquitous mismatch between adolescent students' developmental needs and the environments that their schools typically provide (Eccles, Midgley et al., 1993; Eccles & Roeser, 2009). As students enter adolescence, for example, their developmental needs for autonomy and positive relationships with non-parental adults increase (Eccles, Early, Fraser, Belansky, & McCarthy, 1997). Simultaneously, however, the structures of most adolescents' schools tend to provide authoritarian rule enforcement and few opportunities for the development of teacher-student relationships (Eccles, Midgley et al., 1993; Roeser, Eccles, & Sameroff, 2000). As indicated above, school identity does tend to decrease after middle school matriculation, and it continues to decrease over the course of middle school (e.g., Finn, 1989; Whitlock, 2006). This decline is especially steep among students who report that their needs are not met (L. H. Anderman, 2003). Importantly, however, school identity declines less or not at all among the minority of middle-school students who report that their needs are met by their school environments (L. H. Anderman, 2003; Brewster & Bowen, 2004; Eccles et al., 1997).

Similarities between middle- and high-school environments and students may result in continued needs-environment mismatches in high school. Like middle schools, high schools tend to be large and have fully-departmentalized curriculums, both of which can foster student feelings of subordination and impersonal student-teacher relationships (Alfaro, Umaña-Taylor, & Bamaca, 2006; Davis, 2003; Gilman & Anderman, 2006). Differences between middle- and high-school environments and students, however, may result in better fit between high-school environments and students' developmental needs. Compared with middle schools, for example, high-schools tend to offer students more choice in coursework and have more support staff (e.g., guidance counselors), meeting students' needs for autonomous decision-making and supportive adult relationships (Eccles & Roeser, 2005; Hargreaves, Earl, & Ryan, 1996). High-school

students, themselves, may need less support from their school environment given that they are older and more mature, have already successfully navigated one major school transition, and generally have already entered puberty and therefore are not simultaneously navigating biological as well as social transitions (Anderson, Jacobs, Schramm, & Splittgerber, 2000; Hargreaves et al., 1996).. Thus, even considering stage-environment fit, research does not offer a clear prediction for how school identity might change across the course of high school.

To our knowledge, no study has longitudinally examined school identity across the course of high school. Even school identity studies that have drawn from longitudinal datasets have restricted analyses to data from a single year and used a cross-sectional approach (McNeely, Nonnemaker, & Blum, 2002). The current study assessed students' school identity during each year of high school and was specifically designed to examine how students' school identity changes over the course of high school.

School Identity and Academic Achievement and Values

In addition to being an indicator of the extent to which students' needs are met by their academic institutions, school identity may be an important source of students' academic achievement and values. Many theories of academic achievement include the idea that students' sense of personal connection to their academic institution supports internalization of academic values, encourages academic-supporting behaviors, and therefore, plays a role in academic success (e.g., Eccles, 2004; Finn, 1989; Voelkl, 1997). Across studies, however, associations between school identity and academic achievement have been inconsistently observed. While some research has found that students who have higher school identity tend to have higher achievement (E. M. Anderman, 2002; Walton & Cohen, 2007), other studies have found no association between school identity and measures of achievement (Dotterer et al., 2007), or

inconsistent associations (e.g., school identity associated with achievement test scores, but not with reading or writing performance; Battistich, Solomon, Kim, Watson, & Schaps, 1995). It is possible that methodological and population differences could account for some of the discrepancies. According to the concept of functional substitution, for example, any resource is especially impactful among students who have fewer resources in general (Mirowsky and Ross, 2003). Thus, it is possible that school identity is associated with achievement only among students who face increased risk of academic challenges (Crosnoe, Johnson, & Elder, 2004; Goodenow & Grady, 1993). It is also possible, however, that school identity is not associated with achievement. School identity research has almost exclusively relied on between-person associations. Instances in which school identity seemed to be associated with achievement may have been attributable to other between-person variables that were not assessed.

In the current study, we measured school identity and academic achievement among the same students over the course of many years. In this study, therefore, each participant could serve as their own control group, and these data allow us to move beyond between-person questions (e.g., do the students with higher school identities tend to be the students with higher achievement?) and allow us to answer within-person questions (e.g., during a year when a student reports higher-than-personal average school identity, does this same student also report higher-than-personal average achievement?). Thus, the longitudinal design provides a conservative test of the association between school identity and academic outcomes.

Unlike school identity and achievement, associations between school identity and academic values have been consistently demonstrated. Students who are more connected to their schools tend to also report liking school more and persevering in school for intrinsic reasons (i.e., self-driven reasons such as interest; Close & Solberg, 2008; Gilman & Anderman, 2006; Ibañez,

Kuperminc, Jurkovic, & Perilla, 2004). Thus, despite school identity's inconsistent direct association with achievement, school identity may nonetheless indirectly support achievement by helping students maintain engagement with the academic enterprise. Again, however, previous studies' results draw almost exclusively from between-person associations. As mentioned above, the current study examined the within-person associations between school identity and academic values. We included two types of academic values that are likely to be very relevant for high school students—intrinsic value (i.e., the extent to which students enjoy school) and utility value (i.e., the extent to which student's feel that school is useful to their current or future lives; Eccles, 1983).

Group Differences

In addition to considering the development of school identity across all students, the current study also examined whether school identity develops differently among certain groups of students. Although broad social groups (e.g., ethnicity or gender) comprise very heterogeneous individuals, some research suggests that membership in these social groups can be associated with average differences in institutional identities (Smith & Tyler, 1997). For school identity in particular, gender differences are commonly observed; girls, on average, tend to report higher school identity than boys (E. M. Anderman, 2002; Kenny & Bledsoe, 2005; Voelkl, 1997). Some researchers have predicted ethnic differences in school identity, but ethnic differences have been inconsistently observed across school identity studies. Some studies, for example, have found that school identity is especially associated with academic outcomes among ethnic-minority students, whereas other studies have found no ethnic differences in these associations (Booker, 2006; Goodenow, 1993b; Voelkl, 1997). Like school identity research in general, most studies that have examined group differences have been conducted among students

in childhood or early adolescence, leaving open of the question of whether there are gender or ethnic difference in school identity over the course of high school. To address this question, the current study included boys and girls from Asian-American, European-American, and Latin-American backgrounds and examined whether there are group differences in average levels of school identity or changes in school identity across high school.

Our diverse sample also allows us to examine whether there are group differences in associations between school identity and other academic outcomes. Some researchers, for example, report that associations between school identity and other academic outcomes are especially strong among ethnic minority students who face negative academic stereotypes (Garcia-Reid, 2007; Goodenow & Grady, 1993; Ibañez et al., 2004). Thus, our sample allows us to test whether associations differ in magnitude across demographic groups.

Goals of the Study

In summary, this study sought to answer two main questions: (1) on average, what happens to students' school identity over the course of high school, and (2) within individual high school students, how is school identity associated with academic achievement and values? To answer these questions, we tracked students' school identity, academic achievement, and academic values longitudinally over the four years of high school. We then employed multi-level analyses to examine the within-person associations between school identity and academic outcomes. We also included male and female students from Asian, Latin-American, and European American backgrounds, which allowed us to examine the extent to which the course of school identity or the associations with school identity might differ by gender or ethnicity.

Method

Participants

Beginning in ninth grade and continuing in 10th, 11th, and 12th grades, we recruited students from three public high schools in Los Angeles to participate in a larger longitudinal study. Each school had a unique ethnic and socioeconomic composition, but no school was dominated by a single ethnic group. Instead, the two largest ethnic groups of each school composed 30%–50% of the total population (California Department of Education, 2006). The first school primarily served students from Latin-American and Asian backgrounds whose families had lower-middle to middle-class educational and occupational statuses. The second school primarily served students from Latin-American and European backgrounds whose families were lower-middle to middle class. Finally, the third school primarily served students from families with Asian and European backgrounds who were middle- to upper-middle class. At the time of the study, these three schools also had different average levels of achievement. The first school tended to be in the lower-average to average range of the achievement distribution of schools within the state of California, the second school tended to be in the average range, and the third school tended to be in the above-average range (California Department of Education, 2006).

In the first two schools, we invited the entire ninth grade to participate during the first year of the study. This same recruitment strategy was employed in subsequent years—during each year of the study, we invited all students in the target grade at these two schools to participate. The large size of the third school made it infeasible to recruit all students in a given grade. In this school, therefore, we invited approximately half the ninth graders to participate during the first year of the study, and in subsequent years, we only followed those students who had participated in ninth grade. At all three schools, students who had participated in earlier

years but were no longer enrolled in the school were contacted and invited to participate by mail in subsequent years.

For the current study, we examined responses from the 572 students who were from Latin-American, Asian, or European backgrounds and who participated in at least two of the four years of the study. During the first wave of data collection (i.e., when participants were in the ninth grade), participants ranged in age from 13.94 to 16.22 (M = 14.88, SD = 0.39). The majority of the 210 participants from Latin-American families had Mexican backgrounds (82.4%), and these participants included 40 adolescents who were first-generation immigrants (i.e., they and their parents were born outside the United States), 130 adolescents who were second-generation (i.e., they were born in the United States, but at least one of their parents was not), and 40 adolescents who were third-generation or later (i.e., they and both of their parents were born in the United States). The majority of the 246 participants from Asian families had Chinese backgrounds (67.1%), and these participants included 77 first-generation adolescents, 158 second-generation adolescents, and 11 third- or later-generation adolescents. Finally, the 116 participants from European backgrounds included 12 first-generation adolescents, 12 second-generation adolescents, and 92 third- or later-generation adolescents.

As a measure of socioeconomic status (SES), we combined students' reports of their parents' education and occupation. Students reported how far their mothers and fathers went in school by selecting one of the following categories: *elementary/junior high school*, *some high school*, *graduated from high school*, *some college*, *graduated from college*, or *law, medical, or graduate school*. Students' open-ended reports of their mothers' and fathers' jobs were coded into the following five categories: unskilled, semiskilled, skilled, semiprofessional, or professional. These four measures (mother's and father's education and mother's and father's

occupation) were each standardized and summed to provide an overall index of SES. On average, students from European backgrounds reported higher SES (M = 0.70, SD = 0.55) than students from Asian backgrounds (M = 0.05, SD = 0.78), who in turn, reported higher SES than students from Latin American backgrounds (M = -0.52, SD = 0.70), $F(2,567) = 114.71$, $p < .001$, $\eta^2 = .29$. These ethnic differences held even after controlling for differences in immigrant background.

Procedure

Participant recruitment and data collection were conducted during school hours. Students who returned parental consent forms and provided their own assent completed self-report questionnaires during class time. Consent forms and questionnaires were available to students and their parents in Spanish, Chinese, and English; all participants chose to complete the survey in English.

Measures

School identity. Items from Tyler's work on institutional engagement (Tyler & Degoey, 1995) were revised to assess the extent to which students feel a sense of identity with their school. Using a 5-point response scale (1 = *strongly disagree* and 5 = *strongly agree*), students rated their agreement with the following seven statements: I feel close to people at my school, I feel like I am a part of my school, I am happy to be at my school, My school is important to the way I think of myself as a person, I feel a sense that I personally belong at my school, I feel like a valued member of my school, and I do not feel like an important part of my school (reversed). The final measure was an average of participants' responses to all seven items. Across each year of the study, this scale possessed good internal consistency (αs = .86–.89) and was similarly

reliable for the adolescents from all three ethnic backgrounds across each year of the study (Latino: αs = .85–.89, Asian: αs = .85–.89, European: αs = .88–.92).

Academic achievement. Participants' grades were collected from school records at the end of each school year. Using a 5-point scale (0 = F to 4 = A), yearly grade-point averages (GPAs) were calculated by averaging students' grades across all of their classes for both semesters of each grade.

Intrinsic value of school. The extent to which students believe that school is intrinsically valuable was assessed by averaging students' responses to two items: In general, I find working on school work... (1 = *very boring* to 5 = *very interesting*) and How much do you like working on school work? (1 = *a little* to 5 = *a lot*). These items were adapted from Eccles (1983) and were highly correlated with one another each year of the study (*r*s = .66–.73, *p*s < .001). These items were similarly correlated among adolescents from all three ethnic backgrounds (Latino: *r*s = .63–.69, Asian: *r*s = .63–.75, European: *r*s = .67–.75, *p*s < .001).

Utility value of school. This measure was also adapted from Eccles (1983) and assessed the extent to which students believe that school is a useful enterprise. Using a 1 (*not at all useful*) to 5 (*very useful*) scale, students responded to three items: Right now, how useful do you find things you learn in school to be in your everyday life? In the future, how useful do you think the things you have learned in school will be in your everyday life? How useful do you think the things you have learned in school will be for what you want to be after you graduate? The final scale was an average of students' responses to these three items. This scale had good internal consistency each year of the study (αs = .77–.82) and was similarly reliable for each ethnic group (Latino: αs = .75–.84, Asian: αs = .74–.83, European: αs = .82–.84).

Results

Sample means and standard deviations of each variable for each year of the study are presented in Table 1.

Participation Analyses

The sample for the current study included the adolescents who participated in two, three, or all four years of the study. Despite this inclusive criteria, most adolescents participated in all four years (M = 3.54 years, SD = 0.66). Initial analyses were conducted to examine whether participants differed according to the number of years in which they participated. Because participants could potentially enter the study during different years of data collection, a variable was created to indicate the percentage of possible years each participant took part in the study. A participant who began the study in ninth grade, for example, had four possible years, whereas a participant who began the study in 10th grade had only three possible years. On average, participants took part in the study in 93.5% (SD = 13.9) of their possible years. Between-subjects analyses of variance (ANOVAs) indicated only one demographic difference in proportion of year participated; students from Asian backgrounds tended to participate in a higher proportion of years (95.4%) than students from Latin-American backgrounds (91.8%), F (2,569) = 4.17, p = .016, η^2 = .01). There were no other ethnic, gender, generation, or SES differences in proportion of year participated. To determine if there were differences in any of the yearly-varying variables (i.e., school identity, GPA, intrinsic value of school, and utility value of school) as a function of participation, hierarchical linear models (HLM; Bryk & Raudenbush, 1992) were estimated using the following equations:

$$\text{school identity, etc.}_{ij} = b_{0j} + e_{ij} \quad (1)$$

$$b_{0j} = c_{00} + c_{01}(\text{participation}_j) + u_{0j} \quad (2)$$

where Equation 1 represents adolescents' scores on the yearly-varying variables across the years of the study, and Equation 2 represents these scores as a function of adolescents' degree of participation (i.e., the percentage of possible years that they took part in the study). For three of the four variables, there were no differences based on degree of participation; adolescents' average school identity, intrinsic value of school, and utility value of school did not differ according to the percentage of possible years that they took part in the study. The one exception was GPA; participants with higher degrees of participation tended to have higher GPAs (b = 1.26, $p < .001$).

School Identity over the Course of High School

The first goal of this study was to examine students' sense of school identity over the course of high school. To address this goal, hierarchical linear models were estimated using the following equations:

$$\text{school identity}_{ij} = b_{0j} + b_{1j}(\text{year}_{ij}) + e_{ij} \quad (3)$$

$$b_{0j} = c_{00} + c_{01}(\text{female}_j) + c_{02}(\text{Latino}_j) + c_{03}(\text{Asian}_j) + c_{04}(\text{SES}_j) + u_{0j} \quad (4)$$

$$b_{1j} = c_{10} + c_{11}(\text{female}_j) + c_{12}(\text{Latino}_j) + c_{13}(\text{Asian}_j) + c_{14}(\text{SES}_j) + u_{1j} \quad (5)$$

As shown in Equation 3, adolescents' school identity during a particular year (i) for a particular individual (j) was modeled as a function of average school identity during the first year of the study (i.e., ninth grade; b_{0j}) and the average change in school identity that occurred over each additional year of the study (i.e., the slope; b_{1j}). Year was coded such that the first year of the study (ninth grade) = 0, 10th grade = 1, 11th grade = 2, and 12th grade = 3. As shown in Equations 4 and 5, average school identity during ninth grade and average slope of school identity were modeled as a function of adolescents' gender, ethnicity, and SES. Gender was dummy coded

such that *males* = 0 and *females* = 1. The two ethnicity variables were also dummy coded such that students from European backgrounds were the comparison group.

As shown in Table 2 and in Figure 1, results indicated that controlling for SES, females reported higher school identity in ninth grade. Over the course of high school, however, females' sense of school identity declined, whereas males' sense of school identity did not change. Female students' average school identity declined 6.92% from ninth grade to twelfth grade; male students' average school identity stayed similar across high school. As a result, females and males had similar levels of school identity by the end of high school.

None of the ethnicity terms reached significance, indicating that students from Latin-American, Asian, and European backgrounds reported similar levels of school identity in ninth grade, and on average, students from these three groups reported similar slopes of school identity over the course of high school. The standard deviations of the estimates of school identity's intercept and slope were significant. These standard deviations indicate that, across individuals, there was significant variance in both ninth-grade school identity and the slope of school identity across the years of high school.

In this and all subsequent analyses, we initially examined main effects of gender and ethnicity, but we then estimated additional models that included gender-by-ethnicity interaction terms. These analyses tested whether observed gender differences were consistent across ethnicity and, conversely, whether observed ethnic differences were consistent across gender. In the current analysis, all interaction terms for the intercept of school identity were nonsignificant. For the slope of school identity, however, the interaction between gender and Latin-American background was significant (b = -0.17, p = .032). This interaction indicates that the gender difference in school identity slopes (i.e., females' school identity declining more steeply than

males') is more pronounced among students from Latin-American backgrounds compared with students from European-American backgrounds. Finally, we estimated additional models that included generation. These analyses indicated whether observed ethnic differences were artifacts of immigrant background. For both the intercept and the slope of school identity, none of the generation terms reached significance.

School Identity and Academic Achievement

The second goal of this study was to examine whether students' sense of school identity in any given year can predict their academic achievement in that same year. To address this goal, a series of hierarchical linear models were estimated using the following equations:

$$\text{GPA}_{ij} = b_{0j} + b_{1j}(\text{year}_{ij}) + b_{2j}(\text{school identity}_{ij}) + e_{ij} \quad (6)$$

$$b_{0j} = c_{00} + c_{01}(\text{female}_j) + c_{02}(\text{Latino}_j) + c_{03}(\text{Asian}_j) + c_{04}(\text{SES}_j) + u_{0j} \quad (7)$$

$$b_{1j} = c_{10} + c_{11}(\text{female}_j) + c_{12}(\text{Latino}_j) + c_{13}(\text{Asian}_j) + c_{14}(\text{SES}_j) + u_{1j} \quad (8)$$

$$b_{2j} = c_{20} + c_{21}(\text{female}_j) + c_{22}(\text{Latino}_j) + c_{23}(\text{Asian}_j) + c_{24}(\text{SES}_j) + u_{2j} \quad (9)$$

Equation 6 represents adolescents' GPA as a function of the within-person association between school identity and GPA (b_{2j}) while controlling for average GPA during ninth grade (b_{0j}) and the average slope of GPA across the years of the study (b_{1j}). In this equation, school identity was centered at each individual's mean, and all other predictors were uncentered. As can be seen in Equations 7, 8, and 9, average GPA in ninth grade, average slope of GPA over the course of high school, and the within-person association between school identity and GPA were each modeled as a function of adolescents' gender, ethnicity, and SES. As before, gender and ethnicity were dummy coded such that males and students from European backgrounds were the comparison groups.

Results indicated no within-person association between school identity and GPA (*b* = 0.04, *p* = .273) and this non-significant association did not differ by gender or ethnicity (*b*s: -0.03–0.05). In other words, students' school identity for a particular year had no association with their GPA in that same year.

School Identity and Academic Motivation

To examine whether students' sense of school identity in any given year can predict their academic values in that same year, a series of hierarchical linear models were estimated. These models were similar to Equations 6, 7, 8, and 9, but included either intrinsic value or utility value of school (rather than GPA) as the outcome.

As shown in Table 3, results indicated a positive within-person association between school identity and intrinsic value of school, and a positive within-person association between school identity and utility value of school. In other words, years in which individuals reported higher-than-personal-average school identity were likely to be years in which these same individuals also reported higher intrinsic value and higher utility value.

For intrinsic value, the within-person association with school identity was invariant across gender and ethnicity; the average association between school identity and intrinsic value was similar for males and females from Latin-American, Asian, and European backgrounds. For utility value, the association differed by gender, but not by ethnicity. The positive association between school identity and utility value was significant for both genders, but was stronger for males than it was for females. Follow-up tests of gender-by-ethnicity interactions were nonsignificant, indicating that the gender difference in the association between school identity and utility value was consistent across students from Latin-American, Asian, and European-American backgrounds.

We conducted one final set of analyses in which we controlled for GPA at level 1. These analyses allowed us to determine whether the associations between school identity, intrinsic value, and utility value would remain significant even after controlling for year-to-year variation in academic achievement. As shown in Table 4, results indicated that school identity's positive within-person associations with intrinsic and utility value of education remained significant even when controlling for students' GPA in each given year. In other words, these analyses indicated that even after statistically equating students' GPA within a particular year of high school, students' school identity in that year is associated with higher academic values in that same year. These results suggest that school identity is associated with a higher level of academic motivation among adolescents as compared to their equally-achieving peers.

Discussion

Overall, our findings suggest that girls' and boys' school identities change differently over the course of high school. We also found that school identity is particularly important for academic values, above and beyond achievement.

School Identity over the Course of High School

Our results indicated that changes in school identity over the course of high school depended on students' gender. In their first year of high school, girls' average school identity was higher than boys'. This gender difference is consistent with previous research that has demonstrated that middle school girls tend to have higher school identities than middle school boys (E. M. Anderman, 2002; Goodenow, 1993b). The current findings suggest, however, that this gender difference in school identity does not persist beyond the beginning of high school. Over the course of high school, girls' school identities tended to decline, whereas boys' school identities remained the same; by the end of high school, the gender difference in school identity

had disappeared. As compared with girls from European-American backgrounds, the decline in school identity was steeper among girls from Latin-American backgrounds. The current study suggests that, unlike in middle school, normative declines in school identity do not continue into high school. Among male students especially, school identity remains remarkably stable, and although school identity does decline among female students, the magnitude of this decline across all four years of high school is only about seven percent of ninth grade values. These findings are in contrast to studies conducted with younger students that find larger drops in school identity across the course of middle school among both boys and girls. Anderman (2003), for example, reported a five percent decline in school identity across just a single year of middle school.

Two possible explanations for the gender difference in school identity are access to extracurricular activities and the importance of student-teacher relationships. For late adolescents in particular, participation in extra-curricular activities (e.g., sports) especially fosters students' connection to their schools (Brown & Evans, 2002; Fredricks & Eccles, 2006). Despite reforms such as Title IX aimed at reducing extracurricular gender disparities, many high schools still provide more extracurricular opportunities for boys than girls (Braddock, Sokol-Katz, Greene, & Basinger-Fleischman, 2005). Gender disparities in extracurricular options may explain boys' stable and girls' declining school identities over the course of high school. Another possibility is that girls may be especially sensitive to the quality of student-teacher relationships (Crosnoe et al., 2004). For Latinas in particular, student-teacher relationships may be especially important for fostering school connection (Garcia-Reid, 2007). Although middle school presents challenges for student-teacher relationships, these challenges are often exacerbated in high school (Davis,

2003). If girls are especially sensitive to declining student-teacher relationships, this may account for girls' declining school identities in high school.

To the extent that students' school identities may represent the degree to which their school environments are meeting their developmental needs, the current study offers some surprising optimism for high-school learning environments. Although research has documented many aspects of typical high-school environments that are not optimal for students (Eccles & Roeser, 2005; Hargreaves et al., 1996), the current study suggests that, at least in the three schools sampled, students' school identities may indicate relatively good developmental fit. Future research could more thoroughly test this idea by directly measuring students' needs, their school environments, and their school identities across the course of high school. By measuring a variety of specific aspects of school environment (e.g., extra-curricular opportunities and student-teacher relationships), this research would allow us to determine which aspects of the school environment are beneficial for all students and which aspects of the school environment are especially beneficial for boys or for girls.

Although the current study was an important first step in documenting changes in school identity across the course of high school, it is important to remember that the reported findings represent average levels of school identity. Even after controlling for SES, gender, and ethnicity, significant variability in school identity remained. This significant variability indicates that although boys' school identity, on average, remained consistent and girls' declined, there may have been some students for whom these averages did not apply. There may be subgroups of girls, for example, for whom school identity remained stable or increased, and there may be subgroups of boys for whom school identity increased or decreased. Two studies that examined school identity across the transition from middle to high school echo this possibility. Compared

with the transition to middle school, changes in school identity are less normative when transitioning to high school; in these studies, changes in school identity from middle to high school occurred only among certain students in certain circumstances (Benner & Graham, 2007; Newman, Newman, Griffen, O'Connor, & Spas, 2007). Future research, therefore, will benefit by more thoroughly examining predictors of changes in school identity, identifying protective factors associated with stability or increases in school identity and risk factors associated with decreases in school identity.

It is worth emphasizing, however, that unlike some previous work, we did not find ethnicity to be one such risk factor. Some researchers have suggested that ethnic minority students are at increased risk for academic disengagement which could manifest as decreasing school identity (Anderson et al., 2000; Nussbaum & Steele, 2007). Our findings, in contrast, indicate that ethnic group membership alone is not associated with mean levels of school identity or with changes in school identity across high school. On average, students from Latin-American, Asian, and European backgrounds reported similar levels of school identity in ninth grade, and students from these three groups reported similar slopes of school identity over the course of high school. As with our findings for gender, however, there is certainly with-in group variability in school identity that the current study was unable to capture, and there may be subgroups of students who are at risk of school disengagement. Our findings, however, argue for moving beyond ethnic group membership as a definition of risk (Catterall, 1998). Future research should include more individual-level variables to examine predictors of school identity among individual students.

School Identity, Academic Achievement, and Academic Values

The second goal of this study was to examine the within-person associations between students' school identities and their academic achievement and academic values. With this conservative method of testing associations, results indicated that school identity was not associated with achievement as measured by GPA. Knowing how connected a student was to their school in a particular year did not predict their GPA for that same year, and this was true among boys and girls from Latin-American, Asian, and European backgrounds. More so than elementary or middle school, high school grades are largely determined by objective indicators such as standardized test performance (Eccles & Midgley, 1990; Reyes, Gillock, Kobus, & Sanchez, 2000). The current study suggests that school identity may not directly contribute to the knowledge and skills needed to perform on such tests and therefore may not directly contribute to one's high school grades.

School identity was, however, associated with both intrinsic value and utility value of school. During years in which students had a strong connection to their school, they were likely to feel that school was more enjoyable and more useful. It is worth reiterating that these analyses were within-person and therefore controlled for individual differences that could have confounded the results. These results are consistent with school identity work conducted with elementary and middle-school students (E. M. Anderman, 2002; Battistich et al., 1995; Goodenow, 1993a), indicating that the motivational benefits of school identity continue into high school. Importantly, these associations held even after controlling for achievement. In other words, year-by-year changes in GPA were ruled out as a potentially confounding variable, indicating that even after statistically equating students' GPA within a particular year of high school, students' school identity in that year was still associated with higher academic values in that same year. In other words, school identity may help high school students continue to enjoy

school and appreciate its usefulness, even when they are struggling academically. Given that these academic values are associated with increased educational persistence and graduation rates (Finn, 1989; Janosz, Archambault, Morizot, & Pagani, 2008), the current study suggests that school identity may be a promising intervention to reduce school drop-out.

There were no ethnic differences in the associations between school identity and academic values, but there was one gender difference. Although the positive associations between school identity and academic values were significant among both boys and girls, the association between school identity and utility value was especially strong among boys. On average, boys' graduation rates are lower than girls' (Greene & Winters, 2006), but feeling that school is useful may be especially beneficial for boys' educational persistence (DeBacker & Nelson, 1999). Thus, the potential benefits that school identity may have for reducing school drop-out may especially be conferred among boys.

The longitudinal design and diverse sample were among this study's methodological strengths. This study did, however, have some limitations that future studies should address. The main limitation was that our sample was drawn from only three different schools, which is insufficient for examining school-level effects. Among elementary and middle-school students, there is some evidence that aggregated school identity (i.e., school-level average school identity) has independent effects above and beyond individual-level school identity (Battistich et al., 1995). Anderman (2002), for example, found that individual school identity interacted with school average school identity—the positive effects of an individual student's school identity were especially strong in schools in which average school identity was low. Future studies should include more high schools to allow for an examination of these between-school effects.

Including more schools could also address the second limitation of our study; we did not include any measurements of school context. It is possible that we found few ethnic differences in school identity because all of the students in our sample attended schools in which there was no dominant ethnic majority. Research has suggested that the ethnic composition of one's school can make a difference for one's school identity (Benner & Graham, 2007). Within particular school contexts, ethnicity may be associated with school identity. Other school context variables such as urbanicity, bussing policies, and safety also impact students' school identities (E. M. Anderman, 2002). Including a wide range of schools and directly measuring these context variables would allow us to determine if the observed patterns of school identity in the current study hold across a variety of contexts. Finally, as mentioned above, the current study did not examine predictors of change in school identity and, as such, does not offer any indication of what could be done to foster students' school identity. Future research focusing on predictors of school identity could more directly inform interventions aimed at increasing students' connections with their schools.

Despite these limitations, this study makes a significant contribution to the school identity literature by examining longitudinal changes in school identity and with-in person associations between school identity and academic outcomes. The current study demonstrated a surprising amount of stability in school identity across the course of high school, especially among male students. Given that these findings were drawn from longitudinal, rather than cross-sectional data, we are more confident that they accurately represent trajectories of school identity. The current study also suggests that school identity may help students maintain high levels of motivation, regardless of their actual level of achievement. These findings were derived from conservative, with-in person analyses, again providing confidence that they represent true

associations between school identity and motivation. Furthermore, the diversity of our sample demonstrated that school identity operates similarly across students from different ethnic backgrounds. Thus, to the extent that high schools can help students feel like a part of the academic community, the schools will help these students to continue liking school and appreciating its usefulness, even if they are struggling academically.

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Table 1
Means and Standard Deviations

	Grade			
	9th	10th	11th	12th
school identity	3.37	3.24	3.15	3.24
(SD)	(0.83)	(0.85)	(0.91)	(0.87)
GPA	2.97	2.86	2.85	2.92
(SD)	(0.75)	(0.80)	(0.77)	(0.71)
intrinsic value	2.71	2.61	2.53	2.54
(SD)	(0.97)	(0.94)	(0.95)	(0.95)
utility value	3.68	3.50	3.34	3.25
(SD)	(0.91)	(0.89)	(0.94)	(0.90)

Table 2
School Identity over the Course of High School

	School identity *b* (*SE*)
Intercept (9th grade)	3.20 (0.09)***
female	0.26 (0.07)**
Latino	0.05 (0.11)
Asian	-0.06 (0.10)
SES	0.01 (0.05)
standard deviation	0.66***
Year (slope)	-0.02 (0.04)
female	-0.10 (0.03)**
Latino	-0.02 (0.05)
Asian	0.04 (0.04)
SES	-0.00 (0.02)
standard deviation	0.21***

Note. Gender was dummy coded such that *males* = 0 and *females* = 1. All ethnicity variables were dummy coded such that students from European backgrounds were the comparison group. All predictors were uncentered.
*$p < .05$. **$p < .01$. ***$p < .001$.

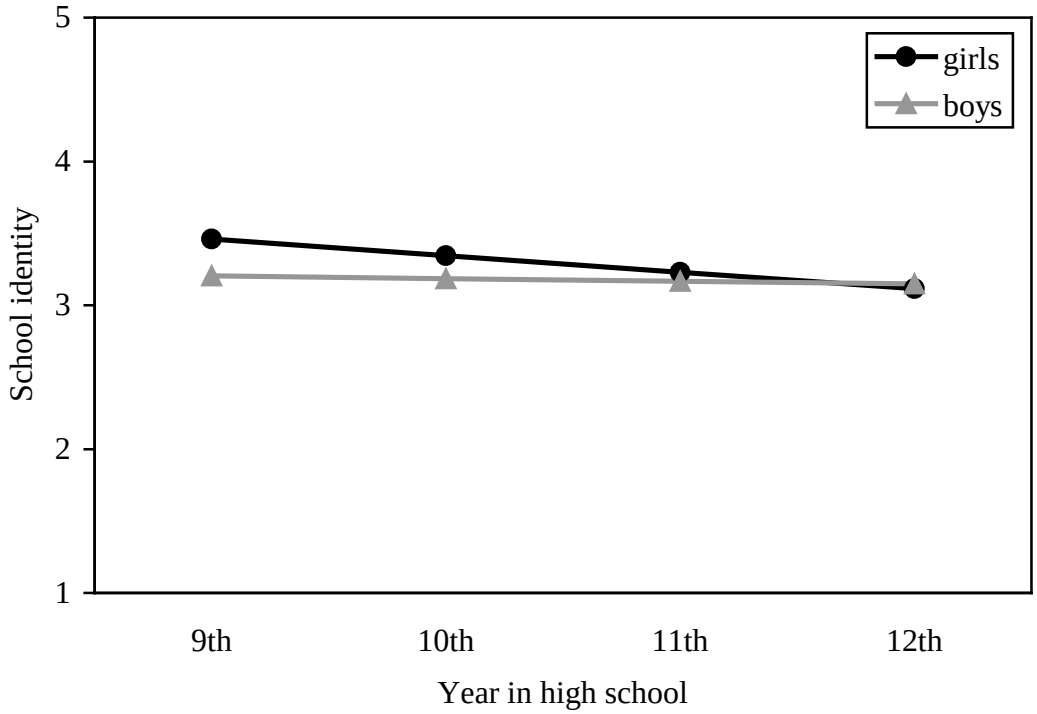

Figure 1. School identity over the course of high school among boys and girls.

Table 3
Within-Person Associations between School Identity and Academic Values

	Intrinsic value *b* (*SE*)	Utility value *b* (*SE*)
Intercept (9th grade)	1.08 (0.23)***	2.12 (0.22)***
female	0.58 (0.18)**	0.64 (0.17)**
Latino	0.19 (0.28)	0.23 (0.28)
Asian	0.05 (0.25)	0.44 (0.25)
SES	-0.05 (0.13)	-0.17 (0.13)
standard deviation	0.76*	0.77
Year (slope)	-0.06 (0.04)	-0.13 (0.04)**
female	-0.01 (0.03)	-0.02 (0.03)
Latino	0.05 (0.05)	0.00 (0.05)
Asian	0.01 (0.04)	-0.02 (0.04)
SES	-0.01 (0.02)	0.04 (0.02)
standard deviation	0.17***	0.15**
School identity	0.42 (0.06)***	0.40 (0.06)***
female	-0.08 (0.05)	-0.15 (0.05)**
Latino	-0.03 (0.08)	-0.01 (0.08)
Asian	0.02 (0.06)	-0.07 (0.07)
SES	-0.01 (0.04)	-0.04 (0.04)
standard deviation	0.22	0.16

Note. Gender was dummy coded such that *males* = 0 and *females* = 1. All ethnicity variables were dummy coded such that students from European backgrounds were the comparison group. School identity was centered at each individual's mean; all other predictors were uncentered.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 4
Within-Person Associations between School Identity and Academic Values, Controlling for Yearly Variations in Achievement

	Intrinsic value *b* (*SE*)	Utility value *b* (*SE*)
Intercept (9th grade)	0.69 (0.24)**	1.86 (0.24)***
female	0.42 (0.17)*	0.55 (0.18)**
Latino	0.21 (0.28)	0.28 (0.28)
Asian	0.01 (0.24)	0.41 (0.25)
SES	-0.10 (0.13)	-0.20 (0.13)
standard deviation	0.67	0.80
Year (slope)	-0.06 (0.04)	-0.12 (0.04)**
female	-0.01 (0.03)	-0.02 (0.03)
Latino	0.05 (0.05)	-0.01 (0.05)
Asian	0.01 (0.04)	-0.02 (0.04)
SES	0.01 (0.02)	0.04 (0.02)*
standard deviation	0.18***	0.15**
School identity	0.38 (0.06)***	0.39 (0.06)***
female	-0.05 (0.05)	-0.14 (0.05)**
Latino	-0.01 (0.08)	0.00 (0.08)
Asian	0.03 (0.07)	-0.07 (0.07)
SES	-0.01 (0.04)	-0.03 (0.04)
standard deviation	0.19	0.16
GPA	0.17 (0.03)***	0.10 (0.03)**

Note. Gender was dummy coded such that *males* = 0 and *females* = 1. All ethnicity variables were dummy coded such that students from European backgrounds were the comparison group. School identity was centered at each individual's mean; all other predictors were uncentered.
*$p < .05$. **$p < .01$. ***$p < .001$