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Academic and Social Perceptions as Predictors of Change in Middle School Students' Sense of School Belonging

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ABSTRACT. Change in middle school students' sense of school belonging was examined in relation to grade point average, motivation variables, and teachers' promotion of mutual respect in classes. Survey data from 618 students collected in three waves during the sixth and seventh grades were submitted to growth curve analysis. On average, students' sense of school belonging declined over time. Initial levels of school belonging were predicted positively by students' grade point average, academic task values, and perceived classroom task goal orientations. Teacher promotion of mutual respect had a small effect in ameliorating the decline in school belonging. The findings suggest that students' sense of school belonging is enhanced when teachers promote adaptive academic and interpersonal contexts in their classrooms.

Key words: classroom climate, middle school, motivation, school belonging, teacher–student relationships

A GROWING BODY OF LITERATURE HAS EXAMINED the importance of students' psychological sense of belonging in school in relation to a number of important outcomes (see L. H. Anderman & Freeman, 2004; Osterman, 2000, for reviews). Several researchers have suggested that the sense of belonging may

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be particularly important during adolescence. For example, adolescents' degree of school belonging has been associated with lower rates of engagement in risky behaviors (Resnick et al., 1997), adaptive patterns of academic motivation (L. H. Anderman & E. M. Anderman, 1999; Goodenow & Grady, 1993), and positive school-related affect (L. H. Anderman, 1999a; Battistich, Solomon, Kim, Watson, & Schaps, 1995; Roeser, Midgley, & Urdan, 1996). Finn (1989) hypothesized that a sense of psychological comfort, social acceptance, and support is important for preventing withdrawal from school. To date, however, little is known about variables that influence students' sense of school belonging and the ways in which belonging may change over time. My purpose in this study, therefore, was to examine change in a sample of middle school students' self-reported sense of school belonging across three semesters, beginning in the spring of sixth grade.

In terms of mean level change in students' school belonging across the six and seventh grades (given a Grade 6–8 school structure), one might hypothesize that belonging would increase as students spend more time in their middle school and come to know better the institution, its teachers, and its students. Alternatively, however, some data have suggested that many adolescents' sense of alienation from schooling as an institution may increase across the middle school and early high school years (e.g., Rumberger, 1995). Thus, it may be that students actually report less subjective sense of belonging over time, despite their longer tenure in the school.

In addition to general changes in school belonging across time, it seems likely that some students may be more prone to low levels of belonging than are others. A student's sense of school membership undoubtedly is influenced by several aspects of the schooling experience, including both academic and social factors. That is, the sense of school belonging represents students' perceptions of the social context of schooling and their place in it. Schools are institutions within which academic and social dimensions are inherently intertwined and, thus, one should expect both academic and social variables to predict the sense of belonging. This may be particularly true for students in middle school grades. Developmentally, these early adolescent students tend to experience increased self-consciousness and sensitivity to social comparison (Elkind, 1967; Nicholls, 1990) and an increased need for positive and supportive relationships with both peers and nonparental adults. Simultaneously, students often find themselves in a school environment that places increased emphasis on academic performance and grades (see Eccles & Midgley, 1989; Eccles, Midgley, et al., 1993). Thus, factors in both academic and social domains tend to increase in salience for students during the middle school period.

One academic variable that is likely to influence students' sense of belonging is their record of academic achievement. Given the ubiquitous emphasis on high grades and levels of achievement in middle schools, as publicized through prac-

tices such as posting “A” and “B” honor rolls or selling honor roll bumper stickers to parents, it seems likely that students with a high grade point average (GPA) may feel reinforced in their sense of school membership. In contrast, it may be more difficult for students with a record of poorer performance to maintain a feeling of legitimacy and place in their school. Thus, in the present study, I included students’ GPA as one predictor of individual differences in sense of school belonging.

In addition to academic achievement per se, academic motivational variables also are likely to influence the degree of belonging reported by middle school students. Battistich, Solomon, Watson, and Schaps (1997) demonstrated that an intervention program can enhance elementary school students’ sense of their classroom as a caring community—a broader concept that includes the sense of belonging. The intervention program in question focused on teachers’ practices at the classroom level, including emphasizing collaboration and problem solving and avoiding extrinsic reinforcers and punishers. Goal orientation theory, which focuses on the perceived meanings and purposes of academic work, describes a task-oriented classroom environment as one in which personal improvement, effort, and progress are emphasized as both the purposes of academic tasks and the measure of success (Ames & Archer, 1988). Middle school students’ reported perceptions that their teachers emphasize a task goal orientation have been shown to predict more positive school-related affect (L. H. Anderman, 1999a) as well as adaptive patterns of engagement and learning (Ames & Archer, 1988). Given that a task goal orientation stresses individualized learning and achievement and holds out the potential of success for all, it seems likely that this type of learning environment might also predict higher levels of school belonging for students. That is, students who perceive their teachers as promoting personal improvement and mastery of content might be more likely to maintain a sense of acceptance and validity in their school. Thus, I included students’ perceptions of the task goal orientation of their classes in the present study as a predictor of the sense of school belonging. In this study, however, students moved into a different grade level between waves of data collection. It seems likely that the task goal orientation in classes may vary across grade levels and even, perhaps, across semesters. To account for potential fluctuations over time, therefore, this variable was included in the current study as a time-varying covariate measured at all three waves of data collection.

In addition to the degree of emphasis on a task goal orientation in classes, other motivational variables also may influence students’ sense of belonging in school. Although a number of studies in this area have tended to conceptualize students’ sense of belonging as a precursor, rather than an outcome, of students’ motivation, the majority of those studies have relied on data collected at a single time point and, therefore, have not directly addressed the question of the direction of causal effects. As noted by L. H. Anderman (1999b), however, the inter-

play between social and academic variables within the context of schooling almost certainly is reciprocal in nature. Furthermore, there is some evidence that behavioral indicators of student motivation, such as engagement and active participation in class activities, have been associated with students' sense of class belonging at both the elementary school and college levels (Freeman & Anderman, 2002; Solomon, Battistich, Kim, & Watson, 1997). For example, in the same way that actual achievement is expected to impact sense of belonging, it seems likely that students' expectancies for future success also may be important. If, as suggested earlier, high-achieving students enjoy a greater sense of legitimacy and acceptance in school than do their less successful peers, students who expect to perform poorly in their classes are more likely to report lower levels of belonging in school than are those with more optimistic expectancies. Thus, a measure of students' overall expectancy for academic success (Eccles, Wigfield, Harold, & Blumenfeld, 1993) was included in this study.

Another motivational variable that might be expected to predict students' sense of belonging is their subjective valuing of the academic tasks assigned to them in school. Eccles's model of task values (e.g., Eccles, Midgley, et al., 1993) incorporates three dimensions: intrinsic, utility, and attainment value. That is, the measure of task values assesses students' perceptions that the content of their classes is interesting, useful, and important to them. It seems likely that students who perceive the academic tasks assigned to them in school as uninteresting or irrelevant to their concerns also are likely to experience less sense of belonging and place in school than are their peers who perceive their school work to hold intrinsic or utilitarian value. Similarly, students' perceptions that doing well at various school tasks is personally important to them (attainment value) also should be related to their sense of belonging and identification with school. There is evidence that students' perceived task values differ as a result of teachers' instructional practices and support (e.g., E. M. Anderman, Eccles, Yoon, Roeser, & Blumenfeld, 2001; Midgley, Feldlaufer, & Eccles, 1989), and thus seem to reflect, at least in part, their reactions to the instructional context within which they work. Thus, it seems reasonable that those perceptions also might help to explain students' sense of belonging within that context.

Finally, the sense of belonging in school probably is influenced by factors other than purely academic variables such as achievement and motivation. Students' sense of acceptance in and identification with their school, almost by definition, must be influenced by social dimensions of that environment (L. H. Anderman & Freeman, 2004; Osterman, 2000). In particular, some researchers have suggested that teacher-student relationships that are characterized by fairness and respect may be key to understanding students' belonging or alienation from school (e.g., Murdock, Anderman, & Hodge, 2000). Similarly, McNeely, Nonnemaker, and Blum (2002) reported that adolescents in a large, nationally representative sample were more likely to report a lack of "connectedness" to school if they perceived

their classes as poorly managed and characterized by conflictual relationships with teachers and peers (see also Blum, McNeely, & Rinehart, 2002). Not only do teachers have a role in treating students respectfully in terms of their own relationships but they also play a specific role in ensuring that students are treated with respect by their peers in school. Observational studies of classrooms illustrate the wide variation in affective tone and student interactions experienced by students in different classes (e.g., Anderson, Stevens, Prawat, & Nickerson, 1988; Patrick, Anderman, Ryan, Edelin, & Midgley, 2001). Specifically, middle school students' perceptions that their teachers promote mutual respect among classmates have been shown to predict their self-reported academic self-efficacy and self-regulation (Ryan & Patrick, 2001). Such perceptions also would be expected to contribute to students' feelings of psychological safety and comfort and, thus, to their sense of school belonging. Furthermore, as students progress through the middle school grades, they might be expected to become more aware of and vulnerable to variations in the social climate and mores of their classes. Thus, the impact of supportive, respectful class environments might be expected to predict the ongoing trajectory of students' sense of belonging rather than its concurrent level. In this study, therefore, I explored students' perceptions of teachers' support for mutual respect in classes in terms of their effect on change in school belonging rather than on initial level of belonging.

In summary, my purpose in this study was to examine change in students' sense of school belonging across the sixth and seventh grades. I examined students' GPA and academic expectancies and values as predictors of their initial level of school belonging at the first wave of data collection (intercept). Potential differences in the trajectory of change over time (slope) were examined in terms of students' perceptions that their teachers promoted an environment of mutual respect in their classes. Finally, I treated perceptions of the task goal orientation of classes as a time-varying covariate such that changes in this perception at each time point were taken into account.

Method

Participants and Procedure

The data for this study were drawn from a larger, longitudinal research project examining instructional practices and students' motivation in middle schools. Students were recruited initially during the spring semester, 1999, when they were in sixth grade. Participants were drawn from seven public middle schools in a southeastern state. All of the schools were of a Grade 6–8 configuration and structured their classes in self-contained instructional teams within which teachers shared common planning time and used similar teaching approaches.

Three of the schools were described by their principals as being situated in

urban locations, and four were described as rural. On the basis of data obtained from the state department of education, participating schools ranged from 14% to 62% poverty, based on free- and reduced-lunch status, with six schools reporting 44% or more of their students qualifying for free or reduced lunch. The sample for the current analyses included 618 students (253 boys, 365 girls). There were 545 White students and 54 African American students, with the remaining students representing a range of other minority ethnic groups. Participation in this study was voluntary; both parental consent and student assent were obtained prior to administration of the survey.

Students completed surveys at three time points, in the spring of sixth grade (1999) and the fall and spring semesters of seventh grade. Trained research assistants administered the surveys during regular school hours. All items and instructions were read aloud, while students followed along and responded individually. Students were assured of the confidentiality of their responses. Each administration of the survey lasted approximately 1 hr.

Measures

The larger survey instrument was composed of 130 items that focused on student perceptions of the classroom climate in their instructional teams, peer and teacher relationships, and their academic motivation. All items were presented in a 5-point Likert-type format, with higher scores representing the high end of the scale. Principal components analyses were conducted to confirm the uniqueness of each scale (analysis regarding the social-relational context variables is presented in the Results section). Some scales were adapted slightly across waves to improve their psychometric properties (e.g., including additional items).

Sense of school belonging. I assessed students' psychological sense of school belonging by using a measure adapted from Goodenow (1993). Sense of school belonging refers to students' feelings of being respected and of comfort in their particular school. The adapted measure I used has demonstrated both acceptable reliability and theoretically predicted associations with other variables elsewhere (e.g., L. H. Anderman & E. M. Anderman, 1999). At the first wave of data collection, this measure included five items (e.g., "I feel like a real part of this school"). I added three additional items from the original Goodenow measure at the second wave in an attempt to increase the internal consistency. The five-item and eight-item versions of this measure (Waves 1 and 2) were positively correlated ($r = .587$). Reliability coefficients were acceptable: $\alpha = .80$, $.81$, and $.82$ at Waves 1, 2, and 3, respectively.

Perceived classroom task goal orientation. I used a scale from the Patterns of Adaptive Learning Survey (PALS) to measure students' perceptions of the task goal orientation of their classes (Midgley et al., 1996). This scale assessed individual students' perceptions that the purpose and meaning of academic tasks and

achievement emphasized in their classes focused on personal improvement and mastery. This measure has demonstrated reliability and validity in a number of studies (e.g., E. M. Anderman & Midgley, 1997; Urdan, Midgley, & Anderman, 1998). The measure included between five and seven items at different waves (e.g., “Our teacher thinks mistakes are okay as long as we are learning”), with additional items from the more recent version of the PALS (Midgley et al., 2000) included to improve the internal consistency. Reliability coefficients were acceptable: $\alpha = .75$, $.86$, and $.86$ at Waves 1, 2, and 3, respectively.

Expectancy for academic success. I measured students’ expectancy for success in academic subjects by using a scale from Eccles et al. (1993). This measure asks students how successful they expect to be in a particular subject area in school. Students’ expectancies were assessed at Wave 1 (spring of sixth grade) separately in four core subject areas: math, language arts, science, and social studies. I then combined these items to create a general measure of students’ overall expectancy of academic success. This measure included eight items, $\alpha = .77$.

Academic task values. Similarly, I measured students’ task values for academic subjects by using a scale from Eccles et al. (1993). This measure assesses students’ subjective estimation of the usefulness, importance, and interest intrinsic of particular subject areas. Students’ task values were assessed at Wave 1 separately in four core subject areas: math, language arts, science, and social studies. I then combined these items to create a general measure of students’ overall valuing of academic tasks. This measure included 28 items, $\alpha = .90$.

Perceived teacher support for mutual respect. Students reported their perceptions of the extent to which the teachers in their teams promoted mutual respect among classmates in the context of instruction. The current measure was adapted from Ryan and Patrick (2001) and included seven items (e.g., “Our teachers want students in this team to respect each others’ ideas”). I assessed students’ perceptions of support for mutual respect at Wave 1, $\alpha = .78$.

Academic achievement. I obtained students’ sixth-grade subject area grades for the core subjects (math, language arts, science, and social studies) from school records. These grades were coded A = 5 through F = 1, and used to compute a measure of sixth-grade GPA by using the arithmetic mean, $\alpha = .92$.

Results

Preliminary Analyses

Exploratory principal components analyses of the social–relational context measures. The two measures of students’ perceptions of the social–relational context of their classrooms (sense of school belonging and teacher promotion of mutual respect) used in this study are not as well established in the research literature as

are the academic motivation measures. Thus, I conducted exploratory principal components analyses on these two measures using the entire project sample ($N = 695$). I included sense of school belonging as measured at Wave 1 in the analysis to be consistent with the measure of teacher promotion of mutual respect. Following the recommendation of Tabachnick and Fidell (2001), I examined both varimax and oblique rotations to test the stability of the factor structure. The results suggested considerable stability across both approaches. The analyses yielded two factors with eigenvalues greater than 1.0, which accounted for 49.4% of the variance. Items and factor loadings above .30 from the varimax rotation are shown in Table 1. The two factors corresponded to the two hypothesized social-relational context variables: sense of school belonging and teacher promotion of mutual respect. All factor loadings were greater than .35 on their primary factor, and no items cross-loaded ($> .30$) on two factors.

Descriptive statistics. Means and standard deviations for all survey variables are shown in Table 2. In addition, I computed skewness statistics for all self-report measures; all skewness coefficients fell between -1.0 and $+1.0$.

TABLE 1. Factor Loadings for Items Regarding the Social-Relational Context of Schooling

Item	School belonging	Promoting respect
I wish I were in a different school. (R)	.782	
I feel like a real part of this school.	.780	
I am proud of belonging to this school.	.767	
I can really be myself in this school.	.667	
Sometimes I feel as if I don't belong here. (R)	.631	
Our teachers do not allow students to make fun of other students' ideas in class.		.790
Our teachers do not let us make fun of someone who gives the wrong answer.		.724
Our teachers want all students to feel respected.		.718
Our teachers want students in this team to respect each others' ideas.		.691
Our teachers will not allow students to say anything negative about each other in class.		.610
People in my classes will listen to you, even if you're not sure of your answer.		.550
If you gave a wrong answer in class, people would laugh at you. (R)		.353

Note. (R) indicates an item that was reverse coded before the analysis.

Examination of the mean scores revealed a decline in students' average sense of school belonging across the three waves. Repeated measures analysis of variance confirmed that this difference is statistically significant, $F(2, 531) = 33.95$, $p < .01$, and supported a more in-depth examination of change.

I calculated zero-order correlations to examine the simple associations among variables (Table 3). Students' perceptions of the task goal orientation of their classes at the first wave were positively associated with their sense of school belonging ($r = .44$). As expected, there were moderate positive associations among students' expectancies of success, academic task values, and prior achievement. That is, students with higher GPA scores from the sixth grade also reported being more confident of being successful in school, as well as finding their classes more interesting, useful, and important. In addition, there were more modest positive associations between each of these variables and students' perceptions of their teachers' support for mutual respect in classes (r s ranged from .144 to .377). Students with higher prior achievement, higher expectancies of success, and greater valuing of academic tasks also were somewhat more likely to perceive their teachers as promoting mutual respect in their classes.

A number of studies have reported gender differences in adolescent students' sense of school belonging, although the direction of those differences varied across studies (e.g., E. M. Anderman, 2002; McNeely, Nonnemaker, & Blum, 2002; Voelkl, 1997). In the current data, the simple correlations between students' gender and the self-report measures were small (r s ranging from .01 to .28); therefore, I decided not to include students' gender as a predictor in the subsequent analyses.

Because of the small number of ethnic minority students in the sample, I did not include ethnicity as a predictor variable.

TABLE 2. Means and Standard Deviations for School Belonging, Perceptions of Class Context, and Motivational Variables

Variable	<i>M</i>	<i>SD</i>
School belonging, Wave 1	3.66	1.01
School belonging, Wave 2	3.59	.81
School belonging, Wave 3	3.49	.86
Classroom task goal orientation, Wave 1	3.63	.88
Classroom task goal orientation, Wave 2	3.99	.77
Classroom task goal orientation, Wave 3	4.09	.86
Expectancy for academic success	3.81	.64
Academic task values	3.36	.62
Teacher support for mutual respect	3.62	.85

TABLE 3. Bivariate Correlations Among School Belonging, Perceptions of Class Context, and Motivational Variables

Variable	1	2	3	4	5	6	7	8	9
1. School belonging, Wave 1	—								
2. School belonging, Wave 2	.58**	—							
3. School belonging, Wave 3	.51**	.61**	—						
4. Classroom task goal orientation, Wave 1	.44**	.34**	.36**	—					
5. Classroom task goal orientation, Wave 2	.37**	.58**	.44**	.40**	—				
6. Classroom task goal orientation, Wave 3	.32**	.38**	.57**	.37**	.56**	—			
7. Expectancy for academic success	.22**	.24**	.28**	.15**	.15**	.14**	—		
8. Academic task values	.32**	.29**	.36**	.43**	.30**	.32**	.52**	—	
9. Teacher support for mutual respect	.36**	.30**	.30**	.65**	.33**	.32**	.14**	.37**	—
10. Gender	.10**	.15**	.18**	.14**	.19**	.28**	.01	.08*	.17**

Note. $n = 599$.

* $p < .05$. ** $p < .01$.

Growth Curve Analysis

To examine patterns and predictors of change in students' sense of school belonging, I computed growth curve analysis using the HLM 5 software (Raudenbush, Bryk, & Congdon, 2000). This approach has several advantages for examining change over time, as compared with traditional multivariate repeated measures methods, in that it includes two models: (a) an individual growth model that represents changes in each student's reported sense of school belonging over time, and (b) a between-student model that represents differences among individuals in these growth trajectories. In addition, the HLM approach to growth curve analysis is able to estimate trajectories when some data are missing, whereas traditional repeated measures approaches require full data at all time points (see Bryk & Raudenbush, 1987, 1992). The approach is limited, however, in that the number of predictor variables that can be considered within the growth curve equation is somewhat restricted by the number of time points at which the outcome has been measured. In terms of the current study, I measured students' sense of school belonging at only three points, the minimum number necessary to model growth. With fewer points included, the overall power of the analysis is reduced, thus making it more difficult to detect effects for multiple predictors (Bryk & Raudenbush, 1992). With three time points, equations must be parsimonious in terms of the number of predictors included.

The model tested examined change in students' sense of school belonging across the three waves of data collection as the outcome variable. I also included students' perceptions of the task goal orientation of their classes at each of the three time points as a time-varying covariate in the model. The relationship between this variable and the dependent variable at each time point was taken into account prior to estimating the effects of the student-level predictors. That is, in the following equations, the coefficients represent the effects of each variable after having controlled for the effect of task goal orientation in classes. All other predictors included were measured at the first wave of data collection: students' sixth-grade GPA, their expectancy of academic success, their valuing of academic tasks, and their perception that their teachers promoted a respectful environment in classes.

Growth curve analysis allows the prediction of both students' initial level of school belonging at Wave 1 (intercept) and of the trajectory of change over time (slope). Because of the limited number of predictors that could be included in each equation, it was not possible to include all predictors in both equations. Thus, variables related to academic motivation and achievement, which may be more reflective of students' previous schooling experiences, were included in the prediction of the intercept. Students' perceptions of their sixth-grade teachers' promotion of mutual respect, which presumably reflects their experiences in middle school more specifically, were included in the prediction of the slope.

The equations tested, therefore, were as follows. For initial status,

$$\pi_{0i} = \beta_{00} + \beta_{01} (\text{expectancy}) + \beta_{02} (\text{task values}) + \beta_{03} (\text{GPA}) + r_0,$$

where β_{00} = mean belonging at Time 1, β_{01} = the effect of a 1-unit change in expectancy on belonging at Time 1, β_{02} = the effect of a 1-unit change in task values on belonging at Time 1, β_{03} = the effect of a 1-unit change in GPA on belonging at Time 1, and r_0 = error.

For the slope,

$$\pi_{1i} = \beta_{10} + \beta_{11} (\text{teacher support for respect}) + r_1,$$

where β_{10} = mean change in belonging across time points, β_{11} = the effect of a 1-unit change in teacher support for respect on the slope, and r_1 = error.

Results for the full model are shown in Table 4. In terms of the covariate, students' perceptions of the task goal orientation of their classes were related positively to their school belonging across the three waves of data collection ($\pi = .41$, $p < .001$). That is, students' perceptions that their teachers emphasized personal mastery and improvement as reasons for undertaking academic tasks were associated with a greater sense of school belonging.

After controlling for the task goal orientation of classes, students' level of reported school belonging in the spring semester of sixth grade was predicted positively by their GPA ($\beta_{03} = .15$, $p < .001$) and their valuing of academic tasks ($\beta_{02} = .22$, $p < .001$). Students' expectancy for academic success was not a statistically significant predictor of school belonging when all other variables were taken into account ($\beta_{01} = .07$). Thus, even when students' perceptions of the task goal orientation of their classes were taken into account, those with higher grades

TABLE 4. Full Growth Curve Model of School Belonging

Variable	Coefficient
Intercept (initial status at Time 1)	2.01***
Expectancy for academic success ^a	.07
Academic task values ^a	.22***
GPA ^a	.15***
Change over time	-.21***
Perceived teacher support for mutual respect ^b	.04*
Classroom task goal orientation ^c	.41***

Note. ^aPredictors of the intercept, ^bpredictor of variation in trajectory, ^ctime-varying covariate. For intercept, $\chi^2(614) = 2740.73$, $p < .001$. For slope, $\chi^2(616) = 890.23$, $p < .001$. * $p < .05$. *** $p < .001$.

and those who found academic work interesting, useful, and important reported higher levels of school belonging than did their peers. Students' expectancies for success in school, however, did not add any independent predictive power when examined simultaneously with their prior achievement and valuing of academic tasks.

In terms of average change over time, students' sense of school belonging declined significantly across the three time points ($\beta_{10} = -.21, p < .001$). That is, despite having been in their middle school for a longer duration, students reported feeling progressively less accepted and comfortable in that setting from the spring semester of sixth grade to the spring semester of seventh grade. Although students on average reported a declining sense of school belonging over time, the extent of that decline was partially dependent on students' perceptions that their sixth-grade teachers promoted an atmosphere of mutual respect in classes ($\beta_{11} = .04, p < .05$). That is, students who reported that their teachers did promote mutual respect among students in their classes also reported less negative change in school belonging over time than did their peers. Thus, it appears that the positive effect of a respectful learning environment in one grade level may have ameliorated the general trajectory of declining sense of belonging across the following school year.

In summary, students' perceptions of the instructional context of their schooling and motivational beliefs, as measured here, were significantly associated with their sense of school belonging in middle school. It is important to note, however, that a significant amount of the variance in both the intercept, $\chi^2(614) = 2740.73, p < .001$, and the slope, $\chi^2(616) = 890.23, p < .001$, remains unexplained by the variables in the current analyses.

Discussion

The results of this study add to our understanding of the development of middle school students' sense of school belonging in several ways. First and particularly important is the finding that, on average, students reported a declining sense of belonging from the spring of sixth grade through the spring of seventh grade. That is, as students' length of tenure in middle school increased, their sense of acceptance in and connectedness to that setting decreased. Given the importance of adolescents' sense of school belonging for a range of academic and psychosocial outcomes (L. H. Anderman & Freeman, 2004; Resnick et al., 1997), this finding highlights the need for school-level interventions to address middle school students' sense of alienation.

In terms of factors that predict school belonging, prior school achievement and academic motivational variables were positively associated with students' level of school belonging. In particular, students who perceived their classes as task goal oriented reported higher levels of belonging than did others. This finding

supports the hypothesis that adolescents will feel less alienated from educational settings that emphasize personal effort, improvement, and mastery. Similarly, students reported a greater sense of school belonging when they perceived their academic tasks as interesting, important, and useful. It is important to note that the effect for task values was found after the effect of prior achievement was taken into account. That is, the influence of students' perception of the usefulness, relevance, and intrinsic interest of their class work is not a simple proxy for academic ability but rather is important for students at all levels of achievement. Interestingly, students' expectations for academic success were not statistically significant predictors of belonging once their actual GPA was taken into account. Although these variables were not so highly correlated as to prevent their being used in the same analysis ($r = .47$), previous research has documented the positive association between students' expectancies and their actual grades (e.g., Meece, Wigfield, & Eccles, 1990). Thus, it seems that expectancies per se do not add uniquely to the variance in students' sense of belonging. This finding has implications for educational practice in that educators who wish to enhance students' sense of affiliation and commitment to school may be able to spend less time persuading students that they can succeed (e.g., through elaborate reward programs and "motivational speakers") and place more emphasis on ensuring that actual success is a realistic possibility for all students.

In terms of ameliorating the overall decline in sense of school belonging, students' perceptions that their sixth-grade teachers promoted mutual respect among classmates predicted a smaller decline in school belonging over time. Although this effect was somewhat small in comparison to the effects of the motivational variables, this finding is suggestive. One possible explanation is that experiencing a respectful and psychologically safe instructional environment in sixth grade, as the first year of middle school, may be particularly important as a protective factor against future declines in belonging. Alternatively, if teachers beyond sixth grade continue to provide educational settings that promote mutual respect and encourage academic risk taking, it may be that the overall decline in students' sense of belonging can be avoided. This suggestion merits further investigation.

The present study is limited in that it is restricted to self-report data and thus reflects students' perceptions of their instructional contexts rather than more objective characteristics of those settings. Although the use of such perceptual measures of classroom contexts is well established in the motivational literature (Turner & Meyer, 2000), triangulating these measures with observational or teacher-report data is an important next step for research in this area. In addition, in the current study, students' perceptions were measured at the level of their instructional teams as a whole rather than in relation to specific subject area teachers. Given that the outcome of interest was students' sense of belonging to the school as a whole, it seemed important to measure students' perceptions of

the schooling context at a more general level than that of the individual classroom. This approach was possible in the current study because participation in the larger project within which data were collected was restricted to middle schools that used a collaborative teaming structure within which teachers shared common planning time and used similar teaching approaches. The use of team-level rather than class-level perceptions is supported in part by the internal consistency of the measures in question. Nevertheless, it is inevitable that some variability in teachers' individual practices and relationships with students will be lost through this approach. An interesting question for future research is whether students' positive perceptions of a single subject area class can serve a protective function in terms of their sense of school belonging, even if other classes are perceived less positively.

A second limitation of this study is that it includes only three waves of data collection, the minimum necessary for analyzing growth. As noted, the number of data points available restricts the number of predictor variables that can be included in a growth curve equation. Undoubtedly, there are other characteristics of the schooling experience, beyond those investigated here, that influence middle school students' sense of school belonging. In particular, there is evidence that characteristics of the school as a whole contribute to students' sense of belonging. Such characteristics include school structure (grade configuration, teaming practices), the percentage of students involved in extracurricular activities, disciplinary policies, and, at least for minority students, the degree of racial integration in both the student body and faculty of the school (see L. H. Anderman & Freeman, 2004, for a review). Consideration of such variables in combination with the individual-level characteristics examined here would require the use of a multilevel analytic approach and is beyond the scope of the current study, which focused on within-student change over time. Future studies that incorporate both multiple waves of data collection and a sufficiently large number of schools to accommodate nested designs would be able to provide an even more complex understanding of the development of students' school belonging.

Despite these limitations, the current findings have both theoretical and practical implications. In terms of theory, the data reported here support a model of students' sense of school belonging that incorporates academic performance and motivation along with perceptions of the social context of schooling. Given such a model, it seems likely that the quality of peer relationships, in addition to teacher promotion of respect, may be an important area for inclusion in future studies. In addition, in light of current debate over the adaptiveness of a performance approach goal orientation for middle school students (e.g., Midgley, Kaplan, & Middleton, 2001), future research also might investigate the effects of this goal orientation on students' school belonging.

The present study also has implications for educational practice in that at least some of the variables that predicted students' sense of belonging represent stu-

dents' perceptions of the classroom context over which teachers might have some control. First, there was a strong positive effect of a task goal orientation in classes. This finding adds to the substantial literature that documents the importance of emphasizing mastery and improvement as the purposes of academic endeavor with middle school populations (e.g., E. M. Anderman & Maehr, 1994; Midgley, 1993; Midgley et al., 2001). This suggestion also is consistent with the findings of Solomon et al.'s (1997) study in elementary schools. These researchers used structured observational instruments of teachers' and students' behaviors that were subsequently entered into a path model to predict students' self-reported sense of community in the classroom (a construct conceptually similar to the sense of belonging). The results showed that teachers' elicitation of student thinking and encouragement of cooperative learning activities were positively associated with the sense of community (mediated through students' behaviors), whereas the use of extrinsic control was negatively associated with students' engagement.

In addition to the goal orientation of classes, students' perceptions that their teachers created a classroom context in which mutual respect among learners was promoted ameliorated the general decline in belonging over time. This finding is consistent with McNeely et al.'s (2002) finding that poorly managed, conflictual classroom contexts were associated with a lack of school connectedness. Similarly, Murdock et al. (2000) reported that students' perceptions of respectful relationships with their middle school teachers predicted lower frequencies of school disciplinary referrals and greater plans to attend college in high school. It seems clear that early adolescents' identification with and commitment to schooling is influenced by not only their academic success and aspirations but also by the interpersonal relationships they perceive in the classroom. Additional research is needed to understand how some teachers manage to create an environment that serves both the academic and social needs of middle school students.

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