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## **Sense of Belonging in College Freshmen at the Classroom and Campus Levels**

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**ABSTRACT.** The importance of students' sense of school belonging for many adaptive outcomes is becoming well established; however, few researchers have focused on college-aged populations. In this study, the authors examined associations between undergraduate students' sense of class belonging and their academic motivation in that class, their sense of class belonging and perceptions of their instructors' characteristics, and their class and campus-level sense of belonging. They distributed questionnaires to students at a southeastern university; freshmen ( $N = 238$ ) completed the questionnaire. The authors found associations between (a) students' sense of class belonging and their academic self-efficacy, intrinsic motivation, and task value; (b) students' sense of class-level belonging and their perceptions of instructors' warmth and openness, encouragement of student participation, and organization; and (c) students' sense of university-level belonging and their sense of social acceptance. The authors found smaller effects on students' sense of university-level belonging for faculty pedagogical caring and for class-level sense of belonging.

**Keywords:** belonging, motivation, undergraduate students

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RESEARCHERS HAVE SHOWN that students' subjective sense of belonging in their academic environments is an important factor associated with positive aspects of students' school-related experiences. Researchers who focused on school-aged adolescents (e.g., E. M. Anderman, 2003; L. H. Anderman & Anderman, 1999; Brand, Felner, Shim, Seitsinger, & Dumas, 2003; Furrer &

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Skinner, 2003; Goodenow, 1993b; Resnick et al., 1997; Roeser, Eccles, & Sameroff, 2000) found associations between students' sense of belonging in their classrooms and schools and a number of adaptive motivational beliefs, between academic engagement and success, and between emotional well-being and avoidance of risk-taking behaviors. A number of researchers (e.g., Finn, Pannozzo, & Achilles, 2003; Stipek, 2002; Weiner, 1990, 2004) pointed out the need for more research into the area of belongingness to further understand its role in academic contexts and students' motivation. In studies conducted with younger adolescents, Furrer and Skinner (2003) and Stipek (2002) showed that students' sense of relatedness to key figures (a concept similar to belonging) is associated with their emotional and behavioral engagement in school. Likewise, Covington and Dray (2002) suggested that instructional and peer supports are vital in fostering students' academic motivation across elementary, middle, and high school periods. In addition, well-known theorists of college student attrition emphasized the importance of both the social and academic integration of students into postsecondary education (e.g., Astin, 1993; Tinto, 1987). Thus, college students' sense of belonging, especially early in their college careers, may be important for their academic motivation and success in that setting. To date, however, little is known about the importance of the sense of belonging for college-level students or about the conditions that might support the perceptions of belonging (Summers, Achacoso, Svinicki, Turner, & Harris, 2002; Summers, Bush, Turner, Svinicki, & Achacoso, 2003). Therefore, our first goal in this study was to examine the extent to which college students' sense of class belonging is associated with their motivational characteristics in that same class.

Our second goal related to the contextual variables that may support college students' sense of class belonging. In terms of students' perceptions at the classroom level, evidence exists from younger samples that teachers' differing instructional practices influence students' perceptions of the interpersonal climate of their classes (e.g., Patrick, Anderman, Ryan, Edelin, & Midgley, 2001; Stipek, 2002) and of the teacher as caring about students' learning (Davis, 2003; Wentzel, 1997). As mentioned earlier, less is known about the role of instructional practices in terms of college students' sense of belonging in classes.

In conclusion, although researchers have examined students' sense of belonging at both the classroom and the more general school level, it is unclear what the relationship between those two perceptions may be. At present, it is unclear whether students' sense of belonging is generated primarily through academic activity or through interpersonal interactions and acceptance (see Anderman & Freeman, 2004, for a review). Thus, our third goal in this study was to explore the potential contribution of the sense of belonging in a single class to college students' more general sense of belonging at the institutional level.

## Class Belonging and Motivation

Recent high school graduates headed to college in the United States undergo what Bronfenbrenner (1979) deemed an ecological transition, in which incoming freshmen are faced with negotiating new roles in their new academic contexts. Such renegotiations have the potential to go awry. In addition to adjusting to new academic demands, many traditional freshmen students in the United States face being separated from their high school support groups and former way of life. Stage-environment fit theory (Midgley, Middleton, Gheen, & Kumar, 2002) suggested that "if changes in needs are aligned with changes in opportunities at a certain stage of life, positive outcomes will result" (p. 110) and that otherwise negative outcomes are likely. Likewise, Tinto's (1987) academic and social integration model of college student attrition highlighted a potential lack of fit between college students' individual goals and needs and the demands that the higher education system places on them. In particular, Tinto suggested that successful adjustment to college rests on managing both academic and social aspects of the new environment. Empirical studies support the suggestion that failure to form satisfactory interpersonal relationships in college is associated with outcomes such as depression, anxiety, suicide, criminality, and college freshmen attrition (Hoyle & Crawford, 1994; Tinto). However, fewer researchers have examined potential associations between the sense of belonging specifically and college students' academic motivation.

In contrast, several researchers (L. H. Anderman & Anderman, 1999; Battistich, Solomon, Kim, Watson, & Schaps, 1995; Goodenow, 1993b; Goodenow & Grady, 1993; Solomon, Watson, Battistich, Schaps, & Delucchi, 1996) conducted studies with elementary and middle school samples and documented associations between students' sense of class or school belonging and a range of motivational variables. Goodenow, alone and also with Grady, found positive relationships between middle school students' perceptions of belonging and a general measure of academic motivation. In a similar fashion, Solomon et al. found that elementary schools students' sense of community, a construct that included the sense of belonging, was positively associated with their academic motivation. In particular, L. H. Anderman and Anderman found that students' sense of belonging following the transition to middle school was associated with an increase in students' task-goal orientation and a decrease in ability-goal orientation. Battistich et al. also reported positive associations between elementary students' sense of school community and measures of intrinsic academic motivation and task orientation, but reported modest negative associations between sense of community and both ego orientation and work avoidance. Therefore, taken together, results from L. H. Anderman and L. H. Anderman and Battistich et al. suggest that the sense of belonging tends to be associated with more adaptive motivational characteristics, including an orientation toward mastery and intrinsic motivation in younger

samples. In our study, we hypothesized that the sense of belonging in a specific college class would be associated with adaptive motivational beliefs in relation to that same class. In particular, we included measures of students' academic task values (perceptions of academic activities as important, useful, and valuable; Eccles, 1983), academic self-efficacy (beliefs in one's ability to accomplish one's goals; Bandura, 1997), and personal intrinsic motivation (engaging in tasks for interest and enjoyment; Deci & Ryan, 1985).

### **Instructional Characteristics and Class Belonging**

Given the evidence that sense of belonging is associated with positive outcomes for students, a second important question centers on the characteristics of educational contexts that foster a sense of belonging. In theory, such characteristics probably include variables related to academic, pedagogical, and social and interpersonal aspects of the classroom (L. H. Anderman & Freeman, 2004). Although a number of studies have documented connections between teachers' instructional practices and students' academic motivation (e.g., Perry, 1981; Turner & Meyer, 2000; Wentzel, 1997), few have directly examined similar associations with students' sense of belonging.

In elementary school classes, Solomon, Battistich, Kim, and Watson (1997) demonstrated indirect effects between five dimensions of teacher behavior and students' sense of community. Teachers' warmth and supportiveness, emphasis on prosocial values, encouragement of cooperation, and elicitation of student thinking were positively associated with sense of community. In contrast, teachers' use of extrinsic control was negatively associated with the sense of community. Several similar characteristics have been examined with middle and high school samples. In a longitudinal study, L. H. Anderman (2003) found that middle school students' sense of belonging was predicted by their perception that their classes were mastery oriented and by their academic task values (the perception that academic tasks are interesting, important, and useful; Eccles, 1983). In addition, although students' sense of belonging in that study declined over time, the strength of that decline reduced when students perceived that their teachers promoted a climate of mutual respect among students in class. In the same way, teacher-student relationships that are characterized by fairness and respect have been associated with reduced alienation from school in junior high students (e.g., Murdock, Anderman, & Hodge, 2000). As a final point, McNeely, Nonnemaker, and Blum (2002) reported that high school students' sense of school belonging was associated with good behavioral management during class. Taken together, the results of those studies suggest that students' sense of belonging may be fostered in settings characterized by effective instruction, including an emphasis on mastery of meaningful content; warm, respectful interactions between instructor and students; cooperative interactions among

students; and smooth organization. In our study, we examined the potential associations between college students' sense of class belonging and characteristics of effective teaching.

### **Belonging at the Campus Level**

As noted earlier, researchers studying the middle and high school students' sense of belonging have considered belonging at two different levels of analysis: class belonging (e.g., Goodenow, 1993b; Solomon et al., 1997) and school belonging (e.g., L. H. Anderman & Anderman, 1999; Goodenow & Grady, 1993; Roeser et al., 1996). However, the relationship between those two constructs is unclear. As with class belonging, the contextual variables that foster a sense of school belonging are just beginning to be explored (e.g., McNeely et al., 2002). In particular, it is not clear whether experiencing a sense of belonging in at least one individual class would make a significant contribution to the overall sense of belonging at the campus level. In the overall college environment, individual classes may be particularly salient in terms of students' experiences in that they provide a regularly scheduled setting for interactions with a predictable group of others. Thus, for the final goal of our study, we explored the potential contribution of class belonging to explaining students' sense of university belonging. We examined the association between class belonging in a single class and university belonging concurrently with two other university-level variables that may be expected to foster the sense of belonging: quality of faculty–student interactions and general sense of social acceptance on campus.

#### *Faculty–Student Interactions*

Researchers suggest in social cognitive theories of adolescent development that students at every level of schooling benefit from supportive interactions with a nonparental adult. However, results of empirical studies have shown that the quality of teacher–student relationships tends to decline after students enter junior high school and worsen thereafter (e.g., Clinchy, 2002; Eccles & Midgley, 1989; Feldlaufer, Midgley, & Eccles, 1988; Gheen, Hruda, Middleton, & Midgley, 2000; Kegan, 1994; Midgley et al., 2002). It is not clear to what degree students' perceptions of supportive, caring interactions with professors continue to be important as they transition into college. In discussing the general human need for belonging, Baumeister and Leary (1995) suggested that interpersonal interactions with others may have an additive effect and that, when people perceive an environment as caring, their need to belong is fulfilled. In the same way, Tinto (1987) suggested that contact with faculty members that can be characterized as a caring encounter is strongly related to positive academic outcomes. He hypothesized that when students perceive that their relationships with faculty are insignificant, their

motivation is likely to decline and they will tend to withdraw socially. In contrast, if informal interactions with faculty are favorable, students will tend to benefit academically and personally and feel as if they are more a part of the college community. In this context, the definition of caring likely refers more to instructors' communicated caring about a students' learning, termed *pedagogical caring* (Wentzel, 1997), rather than interpersonal caring. Thus, one important contributor to college students' sense of university-level belonging may be their perceptions of pedagogical caring from the professors with whom they interact.

### *Social Acceptance at University*

In addition to interactions with members of the faculty, Tinto (1987) also highlighted the importance of students' peer relationships in terms of their social integration into college. Likewise, Astin (1993) emphasized the important role that peer groups play in terms of both students' adjustment to college life and cognitive development. In studies conducted with school-aged samples, researchers (e.g., L. H. Anderman, 2003; Solomon et al., 1997) suggested that acceptance and respectful interactions with others is conducive to developing a sense of belonging. In our study, therefore, we included a measure of general social acceptance as a third potential predictor of students' sense of university-level belonging.

In summary, we examined three questions related to freshmen college students' subjective sense of belonging at two distinct levels. In relation to the sense of belonging at the class level, we examined associations between belonging and several positive motivational indicators, including self-efficacy, intrinsic motivation, and task value. Next, we examined associations between class belonging and students' perceptions of their instructors' characteristics. As a final point, we explored potential correlates of belonging at the university level, specifically focused on the extent to which the sense of belonging in a single class may explain variance in the more general sense of belonging, after we took perceptions of faculty pedagogical caring and overall social acceptance into account.

## **Method**

### *Participants and Procedures*

The participants were ( $N = 238$ ) first semester freshmen at a southeastern public university with an enrollment of approximately 16,000 students. The sample included 60 men and 162 women, with 16 not reporting gender. That number included 216 Caucasian students and 15 African American students, with the remaining participants representing a range of other minority ethnic groups.

We collected data in nonmajor sections of biology, psychology, and English. Participation was voluntary and anonymous. The first author (T.M.F.) administered

surveys during the last 10 min of a class period after midterm exams. To address our third research question, related to the potential contribution of a sense of belonging in at least one class, we asked students to respond to class-level items in relation to the class in which they felt the greatest sense of belonging. Thus, the class that was represented in students' responses may or may not have been the class in which they were recruited. Students also identified the approximate number of students in the class in question, as well as the type and topic of that class.

### *Measures*

Students' responded to all survey items on a 5-point Likert-type scale with 5 representing the high end of the scale (ranging from *completely* to *very true of me*), with higher scores indicating the higher end of the scale. Students self-reported their high school grade point averages (GPA, coded  $A = 4$  through  $E$  and  $F = 0$ ) as an indicator of prior academic achievement.

### *Measures of Belonging*

Goodenow (1993) originally developed the Psychological Sense of School Membership (PSSM) with middle school students as a measure of their subjective sense of school membership. It assesses the extent to which students feel like an accepted, respected, and valued part of their academic context. The PSSM has been used to assess students' sense of belonging at both the classroom level and at the whole school level. For our study, we created two adaptations of the PSSM to assess students' sense of belonging within a specific class and at the more general university level. Principal components analysis (PCA) with varimax rotation for the university-level items produced three factors, which mirrored those reported by Goodenow: (a) general sense of belonging, (b) teacher support, and (c) peer acceptance. The factors that emerged in the current data appeared to be measuring a general sense of university belonging, perceived pedagogical caring from professors, and social acceptance by others on campus. A separate PCA with varimax rotation for the class-level items produced a single general measure of class belonging.

To determine the distinctiveness of the two measures of belonging, we performed a combined PCA with varimax rotation. Results supported the distinctness of the two measures. The class- and university-belonging factors explained 55% of the variance in students' responses, with eigenvalues of 5.77 (class) and 1.95 (university). Only one class-level item, "Other students here like me the way I am," cross-loaded on the university-level factor with a factor loading of .32. In addition, the bivariate correlation between the class-level and university-level measures of belonging was moderate ( $r = .37$ ). Thus, even though we adapted both the class- and university-level measures of belonging from the same origi-

nal measure, students responded to them as separate constructs. On the basis of those analyses, we formed the following scales.

*Class belonging.* With this scale, we assessed college students' subjective sense of belonging within a specific class. We instructed students to respond to those items in regard to the class in which they felt the greatest sense of belonging. Researchers who used similar measures with younger adolescent populations reported reliability estimates ranging between .77 and .88 (Goodenow, 1993b; Goodenow & Grady, 1993). The scale in our study included 10 items, such as "I feel like a real part of this class,"  $\alpha = .90$ .

*University belonging.* This scale included a subset of items to which students responded in relation to the university as a whole and reflected a global sense of belonging to the institution. We included four items, such as "Sometimes I feel as if I don't belong at this university" (reverse coded),  $\alpha = .79$ .

*Professors' pedagogical caring.* We assessed this scale at the level of the university as a whole and measured students' perceptions that their professors generally care about their educational experiences. The measure mirrors the factor that Goodenow (1993a, p. 30) labeled *teacher support*. We included six items, such as "Most professors at this university are interested in me,"  $\alpha = .75$ .

*Social acceptance.* With this scale, we measured students' perceptions that their peers and other members of the university accept them as they are. The measure mirrors the factor that Goodenow (1993a, p. 30) labeled *peer support*, although in our adaptation we included items referring to other university personnel as well. We included five items, such as "I can really be myself at this university,"  $\alpha = .83$ .

#### *Motivational Characteristics*

We took three measures of academic motivation from the Motivated Strategies for Learning Questionnaire (MSLQ; Garcia & Pintrich, 1996): academic self-efficacy, intrinsic motivation, and task value. Those scales have been shown to have good predictive, construct, convergent, discriminant, and external validity (Bong & Hocevar, 2002; McClendon, 1996; Pintrich, Smith, Garcia, & McKeachie, 1993). We directed students to respond to those measures with reference to the same class for which they reported their sense of class belonging.

*Academic self-efficacy.* This scale measured students' perceptions of their ability to be successful with the academic demands of the course in question. It included eight items, such as "I'm confident I can learn the basic concepts taught in this course,"  $\alpha = .92$ .

*Intrinsic motivation.* This scale measured students' orientations toward internal purposes for participating in the academic activities of the class. It included four

items, such as “The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible,”  $\alpha = .76$ .

*Task value.* This scale measured students’ perceptions that the academic activities included in a class are important and useful (Pintrich et al., 1993). It included six items, such as “Understanding the subject matter of this course is very important to me,”  $\alpha = .83$ .

### *Perceived Instructor Characteristics*

To provide a measure of specific characteristics of instructors’ classroom practices, students completed the Student Perceptions of Learning and Teaching questionnaire (SPLT; McKeachie, 1994). That questionnaire is well known as a tool for evaluating instruction at the college level, although it has been used less frequently in empirical studies of classroom contexts. Exploratory principal components analysis with varimax rotation suggested three sub-scales (see Table 1): warmth and openness, student participation, and instructor organization.

*Warmth and openness.* This scale measured students’ perceptions of their instructors’ underlying teaching approaches and demeanors. It included 10 items, such as “The instructor establishes a climate in the class that is conducive to learning” and “The instructor is helpful when students are confused,”  $\alpha = .92$ .

*Student participation.* This scale measured students’ perceptions that their instructors encouraged class members to participate in class discussions during class. It included five items, such as “Students discuss one another’s ideas,”  $\alpha = .81$ .

*Instructor organization.* This scale measured students’ perceptions of their instructors’ preparedness for class activities. It included four items, such as “The instructor plans class activities in detail” and “Tests and papers are graded and returned promptly,”  $\alpha = .78$ .

## **Results**

### *Preliminary Analyses*

We present descriptive statistics and bivariate correlations for all variables in Table 2. We found acceptable skewness statistics for all measures, ranging between  $-1.00$  and  $+1.00$ . We used independent samples *t* tests to examine potential gender differences in students’ perceptions; however, those analyses revealed no statistically significant differences between male and female students’ responses to any scale. We could not examine ethnic group differences because of the homogeneous nature of the sample. In addition, a one-way analysis of variance (ANOVA) did not reveal any statistical differences between the type of class that students reported on (English, honors, social sciences,

**TABLE 1. Principal Components Analysis of Students' Perceptions of Learning and Teaching**

Item	Factor 1	Factor 2	Factor 3
<b>Instructor warmth and openness</b>			
The instructor gives good examples of the concepts.	.79		
Rate the instructor's general teaching effectiveness for you.	.76		
The instructor is friendly.	.73	.39	
The instructor establishes a climate in the class that is conducive to learning.	.71	.31	
The instructor is enthusiastic.	.70		
The instructor encourages the class to ask questions and share viewpoints.	.69	.34	
The instructor seems knowledgeable in many areas.	.68		
The instructor is helpful when students are confused.	.67		
The instructor displays openness to other viewpoints and ideas.	.60	.39	.33
The instructor shares personal experiences and opinions with students that are relevant to course content.	.59		.34
<b>Instructor encouragement of student participation</b>			
Students discuss one another's ideas.		.86	
Students feel free to disagree with the instructor.	.31	.76	
Students volunteer their own opinions.	.31	.75	
The instructor tells students when they have done a particularly good job.		.56	.36
The instructor knows students' names.		.55	
<b>Instructor organization</b>			
The instructor follows an outline closely.			.68
Tests and papers are graded and returned promptly.			.68
The instructor keeps students informed of their progress.	.31		.64
The instructor plans class activities in detail.	.31		.55

Note. Items were answered on a 5-point scale from 1 (*almost never*) to 5 (*almost always/a great deal*). Only factor loadings > .30 are included.

**TABLE 2. Means, Standard Deviations, and Correlations Among Gender, Prior Achievement, Class Size, Students' Perceptions of Class and University Environments, and Student Motivational Variables**

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender <sup>a</sup>	—											
2. GPA <sup>b</sup>	.19**	—										
3. Class belonging	-.03	.01	—									
4. Instructor warmth and openness	.06	-.07	.56**	—								
5. Instructor organization	.02	.03	.43**	.59**	—							
6. High expectations	-.03	-.03	.16*	.05	.17*	—						
7. Student participation	.09	-.03	.64**	.58**	.31**	.22**	—					
8. University belonging	-.01	.10	.37**	.20**	.24**	.20**	.21**	—				
9. Professor caring	-.01	.09	.48**	.26**	.29**	.11	.28**	.47**	—			
10. University acceptance	-.01	.07	.55**	.29**	.32**	.23**	.32**	.55**	.62**	—		
11. Self-efficacy	-.08	.07	.56**	.59**	.42**	-.05	.44**	.16*	.25**	.31**	—	
12. Intrinsic motivation	-.12	.02	.39**	.36**	.36**	.12	.35**	.10	.27**	.25**	.31**	—
13. Task value	.03	.02	.47**	.53**	.44**	-.01	.37**	.09	.22**	.21**	.21**	.65**
<i>M</i>	—	3.64	3.76	4.08	3.48	2.80	3.82	3.91	3.41	3.53	3.78	3.45
<i>SD</i>	—	0.42	0.83	0.82	0.88	1.16	0.95	0.90	0.79	0.74	0.88	0.91

*Note.* *N* = 238.  
<sup>a</sup>Coded as 0 = male, 1 = female. <sup>b</sup>GPA (grade point average) coded as 4 = A, 3 = B, 2 = C, 1 = D, 0 = E or F.  
 \**p* < .05. \*\**p* < .01.

physical sciences, and professional) and their sense of belonging in that class,  $F(6, 170) = 1.55, p = .17$ .

### *Class-Level Analyses*

In the first set of analyses, we addressed our hypotheses regarding students' sense of belonging at the class level. First, we investigated associations between students' sense of class-level belonging and their personal motivational characteristics in the same class. Second, we examined the associations between students' perceptions of their instructors' characteristics and their sense of class belonging.

*Class belonging and academic motivation.* We used multiple regression analysis to examine the association between students' sense of class belonging and each of the motivational variables. We entered students' gender and GPA as statistical controls in each analysis; however, we found no significant effects for those variables in relation to any of the motivational outcomes. Students' sense of class belonging was positively associated with their academic self-efficacy ( $R^2 = .34, p < .001; \beta = .58, p < .001$ ), intrinsic motivation ( $R^2 = .16, p < .001; \beta = .38, p < .001$ ), and perceptions of the value of academic tasks in that class ( $R^2 = .21, p < .001; \beta = .46, p < .001$ ).

Those findings suggested that when students felt a sense of belonging in a particular class, they also reported positive motivational beliefs in relation to that class. They feel more confident of accomplishing their academic goals in that class, their reasons for participating in class discussions and activities are more likely to reflect their personal interest in learning and mastering the material presented, and they perceive the class material as important and useful. Thus, the findings were consistent with earlier studies conducted with younger students (e.g., L. H. Anderman & Anderman, 1999; Goodenow, 1993b; Goodenow & Grady, 1993).

*Instructional practices and class belonging.* We also conducted multiple regression analysis to examine the extent to which students' perceptions of instructor characteristics were associated with their sense of class belonging. Preliminary analyses revealed that students' gender, high school GPA, and the number of out-of-class contacts that students had with their instructor were not significantly related to their sense of class belonging. Thus, we excluded those variables from the regression analysis. Of the three measures of perceived instructor practice, the instructor warmth and openness scale was quite strongly correlated with both the instructor organization ( $r = .59$ ) and student participation ( $r = .58$ ) scales. However, examination of the tolerance statistics (.44–.61) suggested that multicollinearity was not a serious concern, and we entered all three instructor practice variables into the regression equation.

The analysis accounted for 49.3% of the variance in students' class belonging, with all three of the instructional characteristics being significant predictors. In particular, the results suggested that students' perceptions of their instructor as encouraging of student participation were strongly associated with their sense of belonging in class ( $\beta = .49, p < .001$ ). In addition, students' perceptions that their instructors were enthusiastic, friendly, and helpful ( $\beta = .19, p < .01$ ), as well as being organized and prepared for class ( $\beta = .16, p < .01$ ), contributed to students' sense of class belonging.

### *Predictors of University-Level Belonging*

We conducted a final set of analyses to examine the potential contributions of various perceptions to students' global sense of belonging at the university. Of particular interest was whether students' sense of belonging in any one class would add to the prediction of their sense of overall belonging, over and above the variance explained by perceived social acceptance and faculty pedagogical caring.

Again, the bivariate correlation between the measures of university peer acceptance and professors' pedagogical caring was somewhat high ( $r = .62$ ); however, examination of the tolerance statistic (.51) did not indicate multicollinearity. Thus, we retained both variables in the regression equation. Neither students' gender nor high school GPA was a significant predictor of students' sense of university belonging, so we excluded those variables from the regression analysis. When considered alone, students' sense of class belonging ( $\beta = .36, p < .001$ ) was significantly associated with their university belonging and accounted for 13% of the variance in the sense of belonging to the university (see Table 3). However, that ef-

**TABLE 3. Regression Analyses Predicting University Belonging With Class Belonging and University Variables**

Variable	Step 1	Step 2
Step 1		
Class belonging	.34***	.03
Step 2		
University acceptance		.46***
Professor caring		.16*
$R^2$	.13***	.35***
Change in $R^2$	.13***	.20***

*Note.* University acceptance and professor caring were too highly correlated to be in the same regression.

\* $p = .056$ . \*\*\* $p < .001$ .

fect decreased ( $\beta = .03$ ) and was no longer statistically significant once we entered students' sense of social acceptance and professors' pedagogical caring into the analysis. As expected, students' social acceptance was a significant positive predictor of their sense of belonging to the university ( $\beta = .46, p < .001$ ). Students' perceptions of their professors as pedagogically caring marginally predicted their sense of university belonging ( $\beta = .16, p = .056$ ). When we considered all three variables simultaneously, that analysis accounted for 35% of the variance in students' sense of university belonging. Those results indicated little support for the hypothesis that sense of belonging in a single class contributes significantly to students' overall sense of belonging at the university level. Instead, these results suggested that students' sense of social acceptance, by both fellow students and university personnel, might be the most important variable in relation to the sense of belonging.

## **Discussion**

Our study supported and extended the literature on students' subjective sense of belonging in academic settings in several ways. First, the findings suggested that the sense of belonging continues to be associated with academic motivation in college-level students, as it is in younger populations. Second, the current findings began to identify specific instructor characteristics that are associated with college students' sense of class belonging. Finally, this study provided a preliminary examination of variables that may contribute to students' overall sense of belonging at the campus level.

As hypothesized, we associated students' sense of class belonging with several adaptive motivational characteristics in relation to the same class. Those findings are consistent with studies conducted with younger populations (e.g., L. H. Anderman & Anderman, 1999; Battistich et al., 1995; Goodenow, 1993b; Goodenow & Grady, 1993) but also extended that research by specifying particular motivational variables rather than a global measure of motivation. In particular, students' sense of efficacy for succeeding in class and their perception of the value of tasks required in class were quite strongly associated with their sense of belonging. Because we collected the current data at a single point in time, it was not possible to establish a directional relationship between those variables. Nevertheless, the demonstrated associations in a college population represent an important extension of earlier work conducted with younger students.

Perhaps the most important contribution of our study lies in the identification of specific instructor characteristics associated with college students' sense of class belonging. The results suggested that all three characteristics included were associated with the sense of belonging, with the encouragement of student participation and interaction being the most important. That practice, along with instructor warmth and organization, represented characteristics of generally effective teach-

ing (e.g., see Davis, 2003) and were linked with students' motivation and achievement (e.g., Patrick et al., 2001; Wentzel, 1997). Our findings suggested that students' sense of belonging is also enhanced when instruction is well designed and implemented. In terms of the specific emphasis on student participation and interaction with classmates, that finding may be understood in terms of freshman students' developmental status as late adolescents. Facilitating students' interactions with peers and providing a forum in which they can explore and solidify their opinions and identities may be an important factor in providing an appropriate environmental fit for their developmental needs (Eccles & Midgley, 1989).

In contrast to the findings for class belonging, the results related to understanding students' campus-level sense of belonging were less clear. The hypothesis that sense of belonging in a single class may contribute independently to the sense of university belonging was not supported. Instead, of the three variables examined, students' sense of social acceptance was most strongly associated with their sense of belonging. In fact, the substantial associations among those two variables and students' perceptions of pedagogical caring from the faculty suggested that those constructs may not be completely distinct from one another, despite having separated in principle components analysis. That raises questions about the conceptual definition of school (or university) belonging and the extent to which it represents a unidimensional or multidimensional construct.

### *Limitations*

Our findings are limited because they were calculated solely on the basis of self-report data collected at a single point in time. In addition, the bivariate correlations between measures, including both belonging and contextual variables, suggested the possibility of some response bias on the part of participants. Furthermore, we could not take into account possible effects of class size in the current analyses because of multicollinearity with other variables (tolerance > .80). In our study, we focused on the importance of feeling a sense of belonging in at least one class; therefore, we asked students to report their perceptions of the class in which they felt the greatest sense of belonging. It may be, however, that there is some additive or even multiplicative effect of the sense of belonging in all of the classes students attend, which was not captured in the current data.

### *Future Research*

Future researchers of the dynamics of college-level classes would benefit from using multiple data sources, including direct observational approaches that have the potential to capture the processes involved. Future research also is needed to explore further the precise role of perceived class belonging in relation to university-level belonging.

### Conclusion

Despite our studies' limitations, the current findings illustrate the importance of further investigation into college students' sense of belonging in their classes and universities. Understanding the contextual characteristics that promote students' sense of belonging has the potential to address widespread concern about high attrition rates among college students, which tend to be highest during the freshman year (Tinto, 1987). Individual classes provide a regular context in which students interact with both academic content and other members of the university community; thus, understanding the dynamics of that context is particularly important. Currently, the causal direction of effects between the sense of belonging and academic motivation remains open to debate (L. H. Anderman & Freeman, 2004); however, it is clear that both are fostered through effective instruction. Thus, efforts to improve the quality of undergraduate instruction in general and support programs for freshmen in particular should be encouraged.

In summary, the results of our study suggest that first semester college students are similar to younger adolescents in terms of their academic motivation and belongingness needs. As was found with middle and high school students, first semester freshmen's psychological sense of belonging was significantly related to their academic motivation. More important, our study also identified the specific pedagogical practices associated with students' sense of belonging in a college class. In addition, students' perceptions of a sense of belonging in one class, of their professors as concerned with their academic success, and of general social acceptance on campus were related to their sense of belonging to the university as a whole. Altogether, the findings in our study suggest that a combination of both academic and interpersonal factors in students' college experiences might promote the sense of belonging and, ultimately, their academic motivation in that setting.

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