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The Journal of Early Adolescence 1993 13: 21
DOI: 10.1177/0272431693013001002

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Early adolescents' sense of classroom belonging and support—of being liked, respected, and valued by fellow students and by the teacher—was investigated among 353 sixth-, seventh-, and eighth-grade middle school students. Focusing on one academic class, students completed scales of classroom belonging and support, expectancies for success, and intrinsic interest and value; course grades and effort ratings were obtained from English teachers. Each of three belonging/support factors identified by principal components analysis contributed significantly to explaining variance in expectancies and value, with teacher support having the most consistently substantial influence across student subgroups. The strength of association between support and motivation dropped significantly from sixth to eighth grade. Teacher support was more closely related to motivation for girls than for boys. Expectancy was the primary predictor of class effort and grades. These findings underscore the importance of belonging and interpersonal support in fostering academic motivation and achievement.

As indicated by the title of the Carnegie Council on Adolescent Development (1989) report, early adolescence is in a very real sense a "turning point" in the educational lives of young people. For many students, the beginnings of self-reflectiveness and identity exploration will lead to new intellectual interests, more self-regulated learning, and a commitment to education as a path toward the future selves they hope to be. For many others, early adolescence may bring more negative educational changes such as an increase in anxiety about school performance (Buhrmester, 1980), in social comparison as a basis for assessing ability (Keil, McClintock, Kramer, & Platow, 1990), in confusion about the causes of one's academic outcomes

The author wishes to thank three anonymous reviewers for helpful comments on an earlier version of this article.

Journal of Early Adolescence, Vol. 13 No. 1, February 1993 21-43

(Eccles, 1991), and in extrinsic motivation (Harter, 1981). Declines occur in attitudes toward school and commitment to schoolwork (Epstein & McPartland, 1976), in intrinsic motivation (Harter, 1981), and in self-concept of ability in some subjects (Wigfield, 1984).

The poor fit between many schools as they currently exist and the developmental needs—especially the social and emotional needs—of young people has been proposed as one key factor in declining motivation among early adolescents (Carnegie Council on Adolescent Development, 1989; Eccles & Midgley, 1989). The present study investigated one dimension of this fit—students' sense of belonging, relatedness, and support in the academic classroom context. The major focus of the study was to make explicit the association, and thus the potential influence, of belonging and support on early adolescents' motives to achieve in school.

The expectancy-value theory of achievement motivation has served as a general framework for much recent research on school motivation. First discussed by Atkinson (1964; Atkinson & Feather, 1966), this theory suggests that students' motives to achieve in school are the joint function of their expectancies for success in academic work and the value that school success has for them. Motivation, in turn, is presumed to affect achievement-related behavior and subsequent academic achievement. In a longitudinal study of 5th- through 12th-grade students, for example, Eccles et al. (1983) found expectancies and values to be significant predictors both of later mathematics achievement and of plans to take mathematics courses in the future. More recently, research by Berndt and Miller (1990) indicated that expectancies had a greater influence on achievement than did values. In general, expectancies and values are positively associated with each other; expectancies themselves may contribute to values (Eccles et al., 1983).

Although expectancy-value approaches have proved to be extraordinarily useful in understanding motivation- and achievement-related behavior, there is still the task of explaining the *sources* of high expectations and commitment to academic values. Much recent effort in this area has taken a cognitive approach, investigating the influence on motivation of such variables as self-efficacy (e.g., Schunk, 1989), attributions for success and failure (e.g., Ames & Archer, 1988; Berndt & Miller, 1990; Weiner, 1985), and fixed versus incremental notions of ability (e.g., Dweck, 1986). What is missing from most cognitively focused accounts, however, is careful consideration of the social context in which students' expectancies, values, and motivation-related behaviors occur and of the ways in which that context may shape and influence motivation. In particular, the association between students' psychological embeddedness in the classroom group and their academic motivation

deserves further exploration, especially in terms of the developmental issues faced by early adolescents.

The work of several motivation theorists suggests links between individuals' psychological needs for social connection and their achievement motives. Maslow (1962), for example, posited a psychological hierarchy in which the need for belonging took precedence over needs for knowledge and understanding. More recently, a body of research by Ryan, Deci, and Connell and their colleagues (Connell & Wellborn, 1990; Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Powelson, 1991; Ryan, Stiller, & Lynch, 1990) has focused on the importance of what they term "relatedness" as one of the core foundations of motivation. Relatedness, the presence of "secure and satisfying connections with others in one's social milieu" (Deci et al., 1991, p. 327), in this view, fosters internalization of the important values of the others to whom one is connected. Further, relatedness may have a domain-specific influence, such that the sense of belonging and of being supported in a particular context (e.g., school) should enhance motivation and engagement in that context. Finally, this theory holds that relatedness might be consistent with, rather than antithetical to, psychological needs for autonomy and self-determination. Ryan et al. (1990), for example, found the quality of students' relationships with their teachers to be significantly associated with students' sense of autonomy, personal control, and active engagement in school.

Although belonging, relatedness, and similar social constructs have been found to be associated with school adjustment from childhood (Ladd, 1990; Zeichner, 1978) through college (Tinto, 1987), they might be especially important and therefore potentially problematic during early adolescence. The influence of belonging on school motivation might be heightened by several developmental changes occurring at this time—changes in self-consciousness, in relationships with peers, and in relationships with teachers. These developmental shifts and their implications for school motivation are considered in turn.

Cognitive changes in early-adolescence generally lead to an increased capacity for abstract and conceptual thought and a growth beyond the largely egocentric thinking of childhood. The heightened self-awareness or self-consciousness that accompanies this cognitive development (Elkind, 1967), however, might have significant negative implications for motivation because it increases young people's sense of public exposure and thus their potential for public embarrassment and shame in schools and classes. Indeed, several research studies have found an increased guardedness in the classroom behavior of young adolescents. Good, Slavings, Harel, and Emerson

(1987), for example, noted an increase in student passivity and a decrease in student-initiated questions over the grade levels, with an especially sharp drop in attention-seeking questions between sixth and seventh grades. Although low-ability students in particular are less willing to seek academic assistance during early adolescence (Newman & Goldin, 1990), the emotional riskiness of class participation may increase for virtually all young people at this stage. A general sense of trust and belonging in school settings, then, may be needed as a counterbalance to this heightened sense of exposure and interpersonal risk.

Developmental changes in relationships with peers are also likely to influence school motivation and engagement. The increased significance of friends during the transition to adolescence has been well-documented (Berndt, 1989; Blyth, Hill, & Thiel, 1982; Larson & Richards, 1991). The "inclusion, acceptance, and approbation of the peer group," and the resulting sense of belonging and group identity, noted Gottlieb (1991, p. 290) in a recent review, form the core of social support for adolescents. On the other hand, the effects of friendships and peer relations are not always beneficial. Friends are the major source of increased negative emotions (Larson & Asmussen, 1991). Early adolescence is the age of highest influenceability by and conformity to the peer group (Berndt, 1979; Gavin & Furman, 1989; Steinberg & Silverberg, 1986), and for this reason, friends can have either a positive or a negative influence on school engagement, motivation, and achievement (Berndt & Perry, 1990; Cauce, 1986; Epstein, 1983). Less frequently investigated is the extent to which motivation and achievement are affected by *classroom* peer relations—as distinct from relations with individual friends or with a clique or social group.

Students' relationships with teachers might also undergo changes in nature and significance during early adolescence. One major cause of this shift is the change in school organization that occurs as students move from a typically small elementary school to a larger middle or junior high school and from extended close contact with one teacher to shorter, less personalized classes with many. Research has noted a drop in students' reports of supportive interpersonal relations with teachers after the transition to junior high school (Feldlaufer, Midgley, & Eccles, 1988; Hirsch & Rapkin, 1987). Related work focusing on teachers has found greater emphasis on controlling students, greater depersonalization, stress and burnout, and a weaker sense of teaching efficacy among junior high than among elementary school teachers (Farber, 1984; Midgley, Feldlaufer, & Eccles, 1988). These findings suggest frequent significant deterioration in the student-teacher relationship just at the developmental stage when many young people begin to look to

adults outside of the family as potential role models or sources of support. Further, this decline in perceived support from teachers has been found in some instances to be associated with lower intrinsic interest and lower belief in the value of schoolwork among pupils (Midgley, Feldlaufer, & Eccles, 1989). The quality of student-teacher relationships may significantly influence the learning process among adolescents, but little research has examined the educational effects of these relationships directly (Galbo, 1989; Simpson & Galbo, 1986).

Heightened self-consciousness, increased significance of friendships and peer relations, and decreased personal contact with teachers combine to make the middle or junior high school classroom a social context in which students' sense of belonging, personal acceptance, and social-emotional support are both crucial and problematic. This study investigated the influence of classroom belonging on academic expectancies, values, effort, and achievement.

Belonging is defined here as students' sense of being accepted, valued, included, and encouraged by others (teacher and peers) in the academic classroom setting and of feeling oneself to be an important part of the life and activity of the class. More than simple perceived liking or warmth, it also involves support and respect for personal autonomy and for the student as an individual. In many ways, then, belonging as conceptualized here is similar to the construct of relatedness as developed by Ryan, Connell, and others (e.g., Connell & Wellborn, 1990; Ryan et al., 1990). Also, it is the *subjective* sense of belonging and interpersonal support—as distinct from a more objective class climate—that is seen as most important to motivation. This focus on individual perceptions is consistent with research literature on social support in general (Sarason, Pierce, & Sarason, 1990) as well as with research (Ryan & Grolnick, 1986) on supportive classrooms in particular.

Several lines of influence might be proposed for the relations between belonging, motivation, and achievement. First, belonging and support can be hypothesized to affect expectancies by providing assurances both that others think of one as worthwhile and that they are available to provide encouragement and help if those become necessary. Fuller, Wood, Rapaport, and Dornbusch (1982), for example, provided evidence suggesting that self-efficacy and expectations are context-specific and might be affected by the perceived availability of support in a particular context. Second, academic values might be influenced both by belonging (Harter, 1987; Ryan et al., 1990) and by expectancies (Eccles et al., 1983). Third, class effort and subsequent achievement have been shown to be related to motivation assessed in terms of expectancies and values; whether belonging and support also have an independent effect on achievement is unknown.

Belonging and support may be differentially important to different students. For example, a gradual developmental shift in the importance of belonging and support to school motivation appears probable. As young adolescents develop more stable views of their abilities and chances of school success and as they more fully internalize (or reject) the value of academic work and school goals as important dimensions of themselves, the relationship of belonging to expectancies and values may decline. Although the importance of support has been highlighted for students making the transition from elementary to junior high school (Midgley et al., 1989), developmental shifts in the significance of classroom support as they might occur in the absence of school transition have not been as thoroughly explored.

Some evidence indicates that male and female students react differently to the classroom context. If, as has been suggested, girls have more emotional investment in relationships than do boys (Gilligan, 1982; Larson & Asmussen, 1991) and if these differences intensify in early adolescence (Hill & Lynch, 1983), then interpersonal dimensions of schools might have a greater influence on the motivation and participation of girls than of boys. Recent ethnographic studies of both gifted (Kramer, 1991) and at-risk (Fine & Zane, 1989) adolescent girls noted the tendency among these students to view teachers' support (or lack of it) as a major influence on their own academic success or failure. On the other hand, Wentzel (1989) did not find that girls had more affiliative goals than did boys, and Dweck and Bush (1976) found that whereas girls reacted to teacher evaluation, boys reacted to peer evaluation.

The present study had three major purposes. First, the study investigated the association between perceived classroom belonging and support, on one hand, and the expectancy and value dimensions of motivation, on the other. In particular, it tested three hypotheses: that belonging and support would be positively related to expectations for success, that both belonging/support and expectancies would be significantly associated with students' assessment of the academic subject's importance, intrinsic interest, and value, and that belonging/support as well as expectancies and value would be positively related to effort and achievement. The issue of whether belonging/support, as a personally-referenced construct, would be more highly associated with academic outcomes than would more objectively rated class "climate" was investigated as well.

Second, the study investigated whether or not there were separate dimensions or factors underlying the more global notion of belonging and support. Of particular interest was the possibility that one or more distinct factors

might contribute substantially to explaining variation in motivation and achievement.

Third, the study investigated grade level and gender differences in the impact of support on motivation, effort, and achievement. Differences between sixth-, seventh-, and eighth-grade students in a single Grade 5-8 middle school were examined for the possible light they might shed on age-related or developmental changes in the absence of the confounding impact of school transition. Gender differences—in particular the proposition that belonging and support might be more important to girls than to boys—were tested as well.

METHOD

Participants

Participants in this study were all sixth-, seventh-, and eighth-grade students ($N = 353$) present on the late spring testing day in a suburban New England middle school including Grades 5 through 8. Fifth-grade students, because of their different schedule, were not included in the study. Because all student names were withheld from the researcher and because the survey was seen as a useful part of schoolwide testing and self-assessment, passive permission was deemed sufficient. Parents were notified by mail of the study; no parents refused permission for their child's participation.

Most participating students (93%) were White and of European-American ancestry; ethnic minority students were primarily Asian-American (Korean, East Indian, Chinese). Students were fairly evenly distributed across the three grades surveyed, with 126 in sixth grade, 122 in seventh grade, and 105 in eighth grade. They ranged in age from 11 to 15 years (average = 12.6 years). Boys ($n = 187$) slightly outnumbered girls ($n = 166$).

Procedures

The School Opinion Questionnaire was administered by English teachers during regular English classes. To have students focus on a particular academic class context rather than on school in general but also to broaden the applicability of results, four parallel versions of the questionnaire were prepared, dealing with students' attitudes and experiences in their English, social studies, math, and science classes, respectively. These versions, identical in appearance, were mixed together and were distributed randomly.

Thus, although all students participated in the study during their English class period, only 87 completed questionnaires relating to English; 92 students responded to questions about their social studies class, 88 to mathematics, and 86 to their science class.

To preserve student anonymity and still obtain teacher ratings, cards coded with the same number as the questionnaire were clipped to each survey. Students signed the cards and passed them to the teacher before beginning the questionnaire. On these cards, the teachers administering the survey supplied term grades and effort ratings in English class for each student; course grades and effort ratings for other academic subjects were not available. Names were cut off before cards were returned to the researcher.

Measures

In addition to basic demographic information, items and scales in the Student Opinion Questionnaire tapped two areas: (a) students' motivation in a particular academic class, as assessed by measures of the expectancy of success in the class and of the value, interest, and importance of the academic subject, and (b) students' perceptions of the social-emotional quality of the class for them, and especially of their own sense of belonging and personal support from teachers and peers in that class context.

Motivation

Expectancies and values were measured as the two major components of motivation. Students' expectations for success in the academic school subject specified in their questionnaires were assessed with a nine-item scale developed by Pintrich and DeGroot (1990) for use in seventh-grade classes. Items were altered slightly to focus on the specific school subject under consideration, for example, "I expect to do very well in social studies (math, science, English)." The five-point Likert-type statements (1 = *not at all true*, 5 = *completely true* in the scale were averaged for a possible range from 1, indicating extremely low expectations for success, to 5. With the present sample, the scale obtained an alpha coefficient of .90, indicating high internal consistency reliability. The eight-item Intrinsic Value Scale, also adapted from Pintrich and DeGroot, was used to assess the interest, value, and importance that students attached to an academic subject and included items like "Understanding science (math, etc.) is important to me." Internal consistency reliability was high (alpha = .88).

Belonging/Support and Classroom Climate

The primary measure used to assess perceived belonging in the specific classroom context was the Class Belonging and Support Scale (CBSS) developed for use in this initial study and in a related longitudinal research project. The CBSS is a measure assessing students' personal sense of being included, liked, and respected in a particular classroom. Twenty-eight 5-point Likert-type items were generated to correspond to several different dimensions of the construct: The scale included items tapping perceptions of acceptance/inclusion versus alienation in general (e.g., "I often feel out of place in this class") and with regard to both teacher and fellow students in particular (e.g., "My science teacher is interested in what I have to say" or "Other students in my English class are very friendly to me"). Specifically included were items tapping the sense of personal belonging in the class as a work group or task environment (e.g., "Other students in my social studies class like to work with me") as well as simple liking and social acceptance. Negatively worded items were reverse-coded for scoring. For all students who had completed at least 85% of the items, the CBSS consisted of an unweighted average of all items answered: A possible low of 1 would indicate extreme alienation, isolation, and sense of rejection and 5 would indicate high perceived belonging, acceptance, and respect in the class. The CBSS had an internal consistency reliability of .93 (Cronbach's alpha) with this sample.

Conceptually related to the sense of belonging, classroom climate is usually thought of as the "objective" perception of the social and emotional features of a class, the average or shared perception of class members. Items are phrased with a general reference (e.g., "The teacher enjoys talking with students") rather than personal reference (e.g., " . . . with me"). To assess the relative influence of sense of belonging versus class climate on motivation and achievement, the short (four true-false items each) subscales Affiliation and Teacher Support from the widely used Classroom Environment Scales (CES; Moos & Trickett, 1974) were included. For each CES subscale, positively answered items were summed; possible scores ranged from 1 to 5. Alpha reliabilities obtained with this sample were low—.42 for Affiliation and .52 for Teacher Support.

Teacher Ratings

On the cards matched to student questionnaires, English teachers indicated each student's probable 4th-quarter (final) grade in English, which was later translated into the percentile scores indicated on report card guidelines

(85 for B, 82 for B–, 78 for C+, etc.). Teachers also gave each student an "effort" rating in English class on the three-point scale (3 = *high*, 1 = *low*) customarily used for each report-card marking period. The average English grade and effort rating were 86.4 (*SD* = 7.4) and 2.51 (*SD* = .61), respectively.

RESULTS

Four sets of findings are considered here. First, preliminary analyses examined sample means and investigated underlying factors in classroom belonging and support. Second, grade level and gender differences in scale means were examined. Third, correlational and multiple regression analyses explored the relationships between dimensions of belonging and motivation. Finally, for the subset of students who responded to questionnaire scales regarding their English class (that is, for the 87 students whose questionnaires could be logically matched with their grades), relations between belonging, motivation, and English achievement and effort were investigated.

Because students had received one of four versions of the questionnaire, each targeting one core academic subject (English, social studies, mathematics, or science), academic subject differences were examined. No differences found in means of any self-report measure were significant. Subsequent analyses combined surveys from the four disciplines so as to focus on academic motivation more generally.

Means and standard deviations for self-report scales are presented in Table 1. Consistent with the generally good English grades and effort ratings of participating students, means for all self-report measures were well above the 3.0 scale midpoint. In general, students expected to do well in their classes, felt they were liked and respected by classmates and teacher, and believed their course work to be valuable, interesting and important.

To examine separate dimensions of the belonging/support construct, a principal components analysis with a varimax rotation was conducted on the 28 CBSS items. Three orthogonal factors were derived, accounting for 53.2% of the variance in the CBSS. Items loading heavily on the first principal component (factor) related to positive relations and interactions with classmates. The second factor dealt exclusively with perceived teacher support. The third contained items expressing a general sense of belonging and also those reflecting alienation and negativity. Using weighted linear combinations of CBSS items, factor scores for the three principal components were computed for students who had completed every CBSS item (n = 324) and were used in subsequent analyses. Each of the factors—Peer Support,

TABLE 1: Correlations, Means, and Standard Deviations for All Self-Report Measures

	Self-Report Variables									
	1	*2*	*3*	*4*	*5*	*6*	*7*	M	SD	n
1. Class Belonging and Support	—							3.80	.75	353
2. Factor 1: Peer Support	.654**	—						0	1.0	324
3. Factor 2: Teacher Support	.529**	0	—					0	1.0	324
4. Factor 3: Belonging/Alienation	.539**	0	0	—				0	1.0	324
5. CES Affiliation	.460**	.355**	.141*	.250**	—			3.62	.96	353
6. CES Teacher Support	.424**	.057	.588**	.129*	.305**	—		3.30	1.20	353
7. Expectancy	.614**	.331**	.485**	.249**	.114	.208**	—	3.52	.79	353
8. Intrinsic Value	.544**	.142*	.614**	.236**	.164*	.362**	.638**	5.67	1.01	353

*$p < .05$; **$p < .001$.

Teacher Support, and Belonging/Alienation—had a mean of zero; factors were uncorrelated with each other.

Correlational Analyses

Correlations among CBSS, its three independent factors, and student-rated Expectancy and Intrinsic Value for schoolwork in specific academic classes are presented in Table 1. As has been found in other research, Expectancy and Value were positively correlated. Of special note is the strong relationship between Expectancy and the CBSS; considering belonging/support as a predictor of self-confident expectancies for success, CBSS can be seen as contributing over one third ($r^2 = .38$) of the variance in Expectancy for the total sample. Although no single factor had as strong a relationship with Expectancy as did the total CBSS, Factor 2 (Teacher Support) was the largest predictor of the three. In explaining variance in Value also, Teacher Support was a major predictor, accounting for more variance ($r^2 = .41$) than did the total CBSS, though less than Expectancy.

Because both the CBSS and the CES subscales tapped similar constructs, the association between them was examined. The significant moderate correlations between the CBSS and the two CES subscales, between the CBSS Peer Support factor and CES Affiliation subscale, and between CBSS Teacher Support and CES Teacher Support lend some support to claims of concurrent validity for the CBSS. The CES subscales, however, were weaker predictors of motivation than the CBSS or its factors and, unlike the CBSS, were significantly correlated neither with teacher-rated effort nor with English grades. Because these two climate subscales were poor predictors and had weak reliability with this sample, they were not included in subsequent analyses.

Group Differences

To assess gender and grade-level differences between students, two-way analyses of variance were conducted with regard to the total CBSS, its three factors, both motivation-related measures (Expectancy and Value), and effort and achievement in English. Although girls had significantly higher English grades than did boys (88.8 vs. 84.5, $p < .05$) and better effort ratings (2.70 vs. 2.36, $p < .01$), there were no main effects for gender on any of the self-report measures, nor were there any main effects at all for grade level or any significant interaction effects.

To investigate possible differential *effects* of belonging and support, correlations were calculated separately for the three grade-levels and two genders. Clear declines in strength of association between belonging/support and motivation from sixth to eighth grade can be seen in Table 2. Fisher's r to z transformation was used to permit the testing of statistical differences in correlation strength. The correlations of Expectancy with the CBSS and with the Belonging/Alienation factor declined significantly between sixth and eighth grades. The Expectancy-Peer Support correlation peaked in seventh grade and dropped significantly by eighth grade. The slight decline in association between Expectancy and Teacher Support was not significant.

For Value, decreases over grade level in degree of association with the CBSS as a whole and with the Belonging/Alienation factor were statistically significant. In contrast, Teacher Support continued to be nearly as strong a predictor of Value for eighth-grade students as for sixth graders. The association of Value with Expectancy increased significantly from sixth to seventh grade.

A specific pattern emerged for gender. The second factor, Teacher Support, had a significantly stronger association with Expectancy and with Value for girls than for boys. On the other hand, the correlation between Peer Support and Value was significant for boys but not for girls. No other gender differences were significant.

Multiple Regression Analyses

Stepwise multiple regression analyses were conducted, using the three belonging/support factors as predictors of motivation measures. These analyses permitted the examination both of the relative contributions of separate dimensions of support to motivation and of the cumulative impact of support factors on motivation.

Of the three factors, Teacher Support was the strongest predictor of Expectancy not only for the total sample but for every subgroup. Peer Support also contributed significantly to the equation for the total sample and for every subgroup; Belonging/Alienation contributed to Expectancy among all groups except eighth graders.

For the total sample, the three belonging/support factors contributed well over one third of the variance in Expectancy (adjusted $R^2 = .40$). Consistent with the changing levels of zero-order correlations across the grades, the variance of Expectancy accounted for by support factors dropped from approximately one half in sixth and seventh grade (adjusted $R^2 = .45$ and .52,

TABLE 2: Correlations Among Belonging/Support and Motivation Measures, by Grade Level and Gender

	Expectancy	*Value*
Class Belonging and Support		
Grade 6 (n = 126)	.667***[a]	.645***[a]
Grade 7 (n = 122)	.710***[a]	.517***
Grade 8 (n = 105)	.439***[b]	.424***[b]
Girls (n = 166)	.655***	.530***
Boys (n = 187)	.581***	.544***
Factor 1: Peer Support		
Grade 6 (n = 110)	.302***	.154
Grade 7 (n = 116)	.455***[a]	.232*
Grade 8 (n = 98)	.232*[b]	.022
Girls (n = 156)	.318***	.073
Boys (n = 168)	.351***	.207**
Factor 2: Teacher Support		
Grade 6 (n = 110)	.511***	.630***
Grade 7 (n = 116)	.506***	.615***
Grade 8 (n = 98)	.435***	.597***
Girls (n = 156)	.566***[c]	.683***[c]
Boys (n = 168)	.404***[d]	.546***[d]
Factor 3: Belonging/Alienation		
Grade 6 (n = 110)	.337***[a]	.378***[a]
Grade 7 (n = 116)	.354***[a]	.172
Grade 8 (n = 98)	.063***[b]	.132[b]
Girls (n = 156)	.304***	.220**
Boys (n = 168)	.197***	.242**
Expectancy		
Grade 6 (n = 126)	—	.536***[b]
Grade 7 (n = 122)	—	.729***[a]
Grade 8 (n = 105)	—	.644***
Girls (n = 166)	—	.667***
Boys (n = 187)	—	.616***

a, b. Within grade-level comparisons, correlations with different superscripts are significantly different at $p < .05$ or less.
c, d. Within gender comparisons, correlations with different superscripts are significantly different at $p < .05$ or less.
*$p < .05$; **$p < .01$; ***$p < .001$.

respectively) to slightly over one quarter in eighth grade (adjusted $R^2 = .27$). Also, girls' Expectancy levels were predicted more adequately by support factors than were boys' (Adjusted $R^2 = .50$ vs. .33).

Regressions on Value included as predictors not only belonging/support factors but also Expectancy; both previous research (e.g., Berndt & Miller, 1990) and present correlational results indicate that Expectancy is substantially associated with Value. Expectancy emerged as the primary predictor of Value in regression analyses for the total sample (R^2 = .633, adjusted R^2 = .399), with Teacher Support adding over 12% additional explained variance as a second major predictor (adjusted R^2 = .521), and Belonging/Alienation contributing a bit more (adjusted R^2 = .537). This same pattern held for boys: For seventh- and eighth-grade students, only the first two predictors contributed significantly. Among girls, Teacher Support was the primary predictor (R = .683, adjusted R^2 = .463), with Expectancy (adjusted R^2 = .577) and Belonging/Alienation (adjusted R^2 = .596) adding to explained variance. Surprisingly, among sixth-grade students, Expectancy was not a significant predictor of Value at all when Teacher Support (R = .630, adjusted R^2 = .391), Belonging/Alienation (adjusted R^2 = .526), and Peer Support (adjusted R^2 = .542) were in the regression equation.

Effort and Achievement Correlations

For the relationship between the self-report measures and teacher-rated effort and English grade, only data from those students answering questionnaires about their English class (n = 87) were analyzed. Because effort ratings of high, average, or low were rank ordered rather than interval measures, polychoric correlations were computed in analyses involving effort. In the case of ordinal variables, polychoric correlation coefficients are less biased estimates of association than are the more common Pearson coefficients (Olsson, Drasgow, & Dorans, 1982).

Correlations involving effort and English grade are presented in Table 3; the two teacher-report measures are highly correlated with each other. Although the correlations of self-report measures with effort were generally weaker than those with English grade, the pattern of results for the two outcomes is similar. Expectancy was the best attitudinal predictor of both educational outcomes, with the CBSS as the second highest correlate. Of the three CBSS factors, Teacher Support emerged as most highly correlated with effort and English grade; Peer Support had no significant effect on either outcome.

These correlations were also computed separately by gender and grade level. No gender-related differences in correlation strength were significant, but a clear grade-level pattern can be observed (Table 3). Only among sixth-grade students were there significant effort correlations with the CBSS,

TABLE 3: Correlations of Belonging and Motivation With Effort and English Grades

	Effort	*English Grade*
CBSS ($n = 87$)	.341***	.430***
Grade 6 ($n = 34$)	.376*	.496**
Grade 7 ($n = 25$)	.404	.384
Grade 8 ($n = 28$)	.247	.434
Peer Support ($n = 83$)	.153	.098
Grade 6 ($n = 31$)	.099	.060
Grade 7 ($n = 25$)	.290	.003
Grade 8 ($n = 27$)	.108	.376
Teacher Support ($n = 83$)	.258*	.375***
Grade 6 ($n = 31$)	.352*	.776***[a]
Grade 7 ($n = 25$)	.267	.236[b]
Grade 8 ($n = 27$)	.131	.085[b]
Belonging/Alienation ($n = 83$)	.195	.329**
Grade 6 ($n = 31$)	.233	.255
Grade 7 ($n = 25$)	.139	.472*
Grade 8 ($n = 27$)	.230	.253
Expectancy ($n = 87$)	.422***	.625***
Grade 6 ($n = 34$)	.404*	.695***
Grade 7 ($n = 25$)	.546**	.789***[a]
Grade 8 ($n = 28$)	.324	.366[b]
Intrinsic Value ($n = 87$)	.297*	.256*
Grade 6 ($n = 34$)	.424*	.376*
Grade 7 ($n = 25$)	.267	.268
Grade 8 ($n = 28$)	.208	.040
Effort rating ($n = 87$)	1.00	.781***

a, b. Within grade-level comparisons, correlations followed by different superscript letters are significantly different at $p < .05$.
*$p < .05$; **$p < .01$; ***$p < .001$.

Teacher Support, or Value. Expectancy and effort were significantly associated among sixth and seventh graders but not eighth graders.

As with effort, English grades also were related to attitudes most strongly among sixth graders: With these young students, grades were significantly related to the CBSS, to Teacher Support, to Expectancy, and to Value. Among seventh-grade students, achievement was associated only with Expectancy and with the Belonging/Alienation factor. Among eighth graders, English grades were associated with neither Expectancy nor Value. For this oldest group of students, grades were significantly correlated with the overall CBSS but not with any of the separate factor scores.

DISCUSSION

This study investigated the influence of classroom belonging and support on academic motivation, effort, and achievement among early adolescent students. It specifically tested hypotheses that belonging would be directly associated with two motivational variables—expectancies and values—and that both belonging and motivation would influence actual classroom effort and achievement. Both predictions were borne out. Belonging was substantially related to expectancies and values both in zero-order correlations and multiple regression analyses. Belonging/support, as measured by the CBSS, explained over one third of the variance in students' expectations for success in one of their academic classes. A single dimension of belonging and support, Teacher Support, explained over one third of students' assessment of the interest, importance, and value of the academic work of that class. Taken together, these findings suggest that early adolescents may derive much of their academic motivation from the perceived supportiveness of others in the school environment.

Although expectancy of success was the primary predictor of academic effort and grades, the subjective sense of belonging and support was also significantly associated with these outcomes—more highly associated, in fact, than was intrinsic value. The factor tapping students' perceptions of the support, interest, and respect they received from their teachers was the most influential single component of belonging and support in terms of association with effort and achievement.

Of special importance from a developmental perspective are the grade-related differences in the association of belonging and support with motivation. It should be stressed that there were no significant differences in the absolute *levels* of belonging or motivation: Sixth-, seventh-, and eighth-grade students were equally likely to assert that their teachers cared about them or that what they were studying was interesting and important. What did shift was the *impact* of belonging on motivation. Correlations between expectancies and all belonging and support measures except teacher support declined from sixth to eighth grade. Perhaps with more crystallized self-concepts of ability, with longer histories of past achievement (or nonachievement) in school, and with more individualized notions of what report card grades qualify as "doing well," older students relied less on the supportiveness of their teachers and peers in estimating their own probabilities of academic success.

Correlations between value and the belonging and support measures were also lower for eighth-grade than for sixth-grade students. The separate components of belonging and support, which alone accounted for over one

half of the variance in value for sixth-grade students, were surpassed by expectancies among the two older student groups. Finally, support measures were in general associated more weakly with effort and grades among eighth-grade students than among sixth-grade students. One implication of this consistent pattern of results is that, although both academic expectancies and a belief in the intrinsic value and interest of academic learning are gradually internalized and may become stable features of the self over the course of adolescent development, they are still highly susceptible to social and situational influences in sixth grade.

In terms of gender differences, the most striking results were the greater impact of belonging on expectancies and also the greater significance of teacher support for girls than for boys. Although girls' effort and grades were higher than boys', their expectations for success and attitudes toward the value of academic learning were not: Rather, expectancies and value for the girls here were maintained partially by their perceptions of good relationships with their teachers. These results are consistent with reports of the importance to girls of relatedness and connection with others (Gilligan, 1982), but they may also plausibly be seen as evidence of the support that girls need to counteract other aspects of their social world, in particular to resist the undermining of confidence and the pressures toward antiachievement forms of "femininity" that may accompany the gender intensification (Hill & Lynch, 1983) characterizing this age. Also, when boys and girls are together in groups, the presence of a teacher or other adult has been found to be a key factor in protecting girls' (physical and verbal) space and full participation (Luria & Thorne, 1990; Maccoby, 1990). Thus teacher support may in fact be more logically linked to the motivation and engagement of girls than of boys.

Some major limitations of this study must be noted. Most seriously, the correlational nature of study limits the validity of drawing causal conclusions. Although results have been discussed as if belonging and support led to motivation, it can be argued that the reverse is true as well: that students' perceptions of support are the result of high expectations, of a strong sense of the intrinsic value of school learning, and of prior achievement. Relationships among the variables are undoubtedly far more reciprocal than the model presented here suggests. Longitudinal or experimental studies would be useful in determining more clearly the predominant causal sequence involved in these motivational processes, but research in this area would also benefit from studies focusing on the systemic nature of interpersonal interaction in groups (Salomon, 1991).

A second limitation stems from the study's reliance primarily on self-report data. Although term grades and effort ratings were supplied by

students' English teachers, they were not available for other academic subjects. More complete information about achievement would be helpful, as would observational records of student interaction and class participation.

Third, the sample used in this research limits generalizability. The suburban students who participated in the study, most of whom are White and solidly middle class and most of whom had attended the school for nearly 2 years at the time of this study, are those for whom a history of school success and of relative psychological comfort in the school setting can be more or less assumed. Needs for support and belonging, then, may be somewhat less urgent among these students than among other groups of early adolescents. Previous research (Midgley et al., 1989), for example, found support to be more important during times of school transition. It might also be predicted that belonging and support would have far greater impact on the motivation, engagement, and subsequent academic achievement of students whose family backgrounds were less advantaged. For working-class, urban, or disadvantaged ethnic minority students, social support in the classroom context might serve as a force counteracting antischool subcultures and groups. Recent work by Finn (1989) and Wehlage (1989; Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989) stated quite explicitly that belonging could be *the* single most crucial factor in the motivation and engagement of certain categories of at-risk students. The present study population, then, may provide a quite conservative estimate of the impact of belonging and support on motivation.

It will be useful in future research to investigate subject matter variations in the impact of belonging and support: Such analyses were not undertaken here because course grades and effort ratings were available for only one academic subject. In an interesting study, Stodolsky (1988) found striking differences between mathematics and social studies classes in terms of instructional format, grouping arrangements, student cognitive processes, and student behaviors. It appears plausible that the influence of belonging and support on motivation would vary by academic discipline as well. For example, the perceived interest and encouragement of teacher and peers might be more important supports for participation in social studies discussions than for persistence in work on more clear-cut mathematics tasks.

Interventions to increase students' sense of belonging in classrooms must recognize that student perceptions have sources in both personal psychology and social interaction. On the psychological side, Ryan et al. (1990) emphasized student relations with teachers as stemming to some degree from internalized "representations" or "working models" originating in early family relationships. This is in accord with some work on social support (Sarason et al., 1990) suggesting that the sense of belonging begins in

interpersonal interactions but tends to stabilize as a personality characteristic over time. It is important to identify students whose sense of acceptance and belonging in academic classes is low and to make special efforts to insure their inclusion and to help them develop social skills. On the other hand, some classrooms are, in fact, less supportive than others (Ryan & Grolnick, 1986), and some students are accorded more classroom support and status than are others. Interventions at the school, class, or teacher level (e.g., cooperative learning activities, small interdisciplinary teaching teams, class discussion of interaction norms, teacher self-monitoring of differential expectations or treatment of students) may help to build classroom "communities for learning" (Carnegie Council on Adolescent Development, 1989) that foster student motivation. As Weiner (1990) noted in a recent review, "School motivation cannot be divorced from the social fabric in which it is embedded" (p. 621). Especially among young adolescents, motivation may be best understood as a phenomenon occurring not only within individuals but as developing in part out of the continuing relations between individual students and others in their social contexts.

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