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*The primary goal of this study was to examine the impact of active learning on a student's level of overall social integration and perception of his or her institution's commitment to student welfare.*

## The Role of Active Learning in College Student Persistence

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Active learning, which entails any class activity that “involves students doing things and thinking about the things that they are doing” (Bonwell and Eison, 1991, p. 2), stands as an important pedagogical practice. Discussion, the types of questions faculty ask students in class, role playing, cooperative learning, debates, and the types of questions faculty ask on examinations represent forms of active learning (Braxton, Milem, and Sullivan, 2000).

The importance of active learning stems from the contribution it makes to fostering undergraduate college student success (Braxton, forthcoming). Student knowledge and understanding of course content benefit from the use of active learning by college and university faculty members (Anderson and Adams, 1992; Chickering and Gamson, 1987; Johnson, Johnson, and Smith, 1991; McKeachie, Pintrich, Yi-Guang, and Smith, 1986). Chickering and Gamson (1987) identify active learning as one of their seven principles of good practice for undergraduate education. These seven principles rest on a base of empirical research that indicates that faculty adherence to the principles has a positive impact on student learning (Sorcinelli, 1991).

In addition to increasing student course learning, faculty use of active learning practices directly and indirectly affects college student departure

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Contact the authors to receive a copy of the full logistic regression model used in this chapter.

decisions (Braxton, Milem, and Sullivan, 2000). Class discussions, a form of active learning, wield a positive influence on social integration, subsequent commitment to the institution, and intent to return to the focal university in the subsequent fall semester (Braxton, Milem and Sullivan, 2000). Intent to return was used as proxy indicator of student departure, a measure based on a strong positive relationship between intent to return and actual student persistence (Bean, 1980, 1983; Pascarella, Duby, and Iverson, 1983; Voorhees, 1987; Cabrera, Casteneda, Nora, and Hengstler, 1992). Social integration, subsequent institutional commitment, and persistence correspond to propositions of Tinto's interactionist theory of college student departure that receive strong empirical backing in residential institutions (Braxton, Sullivan, and Johnson, 1997).

Although Braxton, Milem, and Sullivan (2000) found a positive link between active learning in the form of class discussions and subsequent institutional commitment and the intent to return, their primary focus centered on the role of active learning in fostering the social integration of students. The research reported in this chapter also focuses on the influence of active learning on the level of social integration that students experience. Put differently, this research endeavors to replicate and extend the work of Braxton, Milem, and Sullivan (2000).

Three factors provide a strong rationale for the replication and extension of this research. The importance of replication of research stands as one of these factors. Through replication, reliable knowledge obtains (Braxton and Lee, 2005). Another basis pertains to the use of an actual measure of student persistence in this research rather than intent to return, as used by Braxton, Milem, and Sullivan (2000). Braxton, Milem, and Johnson acknowledge the use of intent to return rather than an actual measure of persistence as a limitation to their research. The third factor entails the institutional setting of Braxton, Milem, and Sullivan's research. A highly selective private research university provided the setting for their research. Braxton, Milem, and Sullivan also recognize the institutional setting for their research as a limitation; they suggest that the findings of their study might not be generalizable to other types of colleges and universities. In particular, the positive influence of active learning on social integration might not obtain in other types of colleges and universities.

Thus, the research reported in this chapter centers on the influence of faculty use of active learning practices on social integration, uses an actual measure of student persistence, and uses a sample of students enrolled in eight religiously affiliated, residential, private colleges and universities. This study also focuses on the influence of active learning on shaping student perceptions of the commitment of their college or university to the welfare of its students. Braxton, Hirschy, and McClendon (2004) posit commitment of the institution to the welfare of its students as an antecedent of social integration.

## Theoretical Framework

Student entry characteristics shape students' initial level of commitment to their college or university. Such entry characteristics include family background (such as parental educational level and parental income), individual attributes (gender, racial/ethnic membership), and precollege schooling experiences (for example, high school record of academic achievement) (Tinto, 1975). The initial level of institutional commitment affects the student's perceptions of the commitment of their college or university to the welfare of its students (Braxton, Hirschy, and McClendon, 2004). The more a student perceives that his or her college or university is committed to the welfare of its students, the greater the student's level of social integration (Braxton, Hirschy, and McClendon, 2004). A college or university displays a commitment to the welfare of its students by communicating an abiding concern for its students' growth and development. The high value an institution places on students as individuals and in groups also indexes its commitment to the welfare of these students. A college or university also exhibits a commitment to the welfare of its students by treating students equitably and with respect as individuals (Braxton, Hirschy, and McClendon, 2004). Social integration results when students perceive that their college or university demonstrates a strong commitment to their welfare and become motivated to establish membership in the social communities of their college or university (Braxton, Milem, and Sullivan, 2000; Milem and Berger, 1997).

Social integration pertains to the extent of congruency between the individual student and the social system of a college or university. As such, it indexes the student's perception of his or her degree of congruence with the attitudes, values, beliefs, and norms of the social communities of a college or university, as well as his or her degree of social affiliation. Social integration also occurs at the level of the college or university and its subculture (Tinto, 1975).

Social integration exerts an influence on the student's subsequent level of commitment to the college or university. The greater the student's level of social integration, the greater is his or her degree of subsequent commitment to the college or university. The student's initial level of commitment to the college or university also shapes his or her degree of subsequent commitment to their institution. The greater the student's subsequent commitment to the college or university, the greater his or her likelihood of persistence (Tinto, 1975).

An abiding concern for the growth and development of its students stands as a key aspect of the notion of the commitment of the institution to the welfare of its students (Braxton, Hirschy, and McClendon, 2004). Because active learning enhances student knowledge and understanding of the content of academic courses (Anderson and Adams, 1992; Chickering

and Gamson, 1987; Johnson, Johnson, and Smith, 1991; McKeachie, Pintrich, Yi-Guang, and Smith, 1986), faculty members who use this pedagogical practice may contribute to their institution's abiding concern for the growth and development of its students. These formulations suggest the following hypothesis: the more frequently students perceive that faculty members use active learning practices in their courses, the more that students perceive that their college or university is committed to its students' welfare.

Faculty use of active learning practices also influences the student's level of social integration. To elaborate, students who experience active learning in their courses perceive themselves as gaining knowledge and understanding from their courses and view their course work as personally rewarding (Braxton, Milem, and Sullivan, 2000). Such perceptions motivate students to devote the psychological energy needed to establish membership in the social communities of their institution (Braxton, Milem, and Sullivan, 2000; Milem and Berger, 1997).

Moreover, increases in the learning of course content due to faculty use of active learning practices may also give students more discretionary time to engage in the life of the social communities of their college or university (Braxton, Milem, and Sullivan, 2000). Active learning activities encourage interaction among students in the classroom, and these classroom interactions may lead to the development of friendships that extend beyond the classroom. Thus, the more frequently students perceive that faculty members use active learning practices in their courses, the greater is their degree of social integration.

To sum up, this theoretical framework yields the following directional hypotheses:

*HYPOTHESIS 1. The more frequently students perceive that faculty members use active learning practices in their courses, the more that students perceive that their college or university is committed to the welfare of its students.*

*HYPOTHESIS 2. The more frequently students perceive that faculty members use active learning practices in their courses, the greater is their degree of social integration.*

*HYPOTHESIS 3. The greater a student's degree of social integration, the greater is that student's level of subsequent commitment to the college or university.*

*HYPOTHESIS 4. The greater a student's level of subsequent commitment to the college or university, the greater is his or her likelihood of persistence in that college or university.*

## **Methods**

This study uses a longitudinal panel design of 408 first-time, full-time, first-year students in eight residential and religiously affiliated colleges and universities to test the four hypotheses. Students were randomly selected at each institution participating in a study of undergraduate experiences in the first

year of college. The data collection for this study consisted of the administration of *The Fall Collegiate Experiences Survey* in fall 2002, the administration of *The Spring Collegiate Experiences Survey* in spring 2003, and the fall 2003 enrollment records of the eight participating colleges and universities. The two surveys were distributed to random samples of first-year students at each institution. The longitudinal panel was constructed using the responses to the two surveys and the fall 2003 institutional enrollment records with student cases matched by their identification number across the three data collection points.

The sample of 408 students represents an aggregate response rate of 28.4 percent across the eight participating colleges and universities. Nearly 60 percent of the students were female (59.8 percent,  $n = 244$ ), and 12.8 percent were minority ( $n = 52$ ). Of the eight institutions from which the sample was drawn, one is a master's I, four are baccalaureate-general, and three are baccalaureate-liberal arts. Due to the relatively low response rate in this study, cases from two of the eight institutions were weighted to ensure some degree of representativeness to their respective campus populations on gender and race.

From these two surveys, seven sets of variables that operationalize key concepts from the theoretical framework described above were derived:

1. Student entry characteristics (gender, race/ethnicity, parental education level, parental income, and average grades earned in high school)
2. Initial institutional commitment
3. Faculty use of active learning practices
4. Commitment of the institution to student welfare
5. Social integration
6. Subsequent institutional commitment
7. Student persistence

Table 5.1 displays the operational definitions of the variables that make up these seven sets of variables. In their research, Braxton, Milem, and Sullivan (2000) used four composite variables to measure active learning: class discussion, higher-order thinking activities, examination questions limited to knowledge of facts, and group work. In contrast, this study measures faculty use of active learning practices with a composite variable that has one item tapping classroom discussions and four items that plumb classroom higher-order thinking activities. A narrower perspective on active learning was used in this study because of the unavailability of items included on the two surveys used in this piece of research. Table 5.1 exhibits the five survey items used in the research to measure faculty use of active learning practices. These five items coincide with those of Bonwell and Eison's definition of active learning (1991) as any classroom activity that "involves students in doing things and thinking about the things they are doing" (p. 2).

**Table 5.1. Definition of Dependent and Independent Variables**

<i>Variable</i>	<i>Definition</i>
Female	Student gender (male = 0; female = 1)
Minority	Student racial/ethnic identity in comparison to the student population of institution attended (majority = 0; minority = 1)
High School Grades	Self-reported high school cumulative grade point average (C1 = 1; A or A+ = 8)
Parental Income	Student-reported estimated parental income (less than \$6,000 = 1; \$200,000 or more = 14)
Parental Education Level	Level of parental educational attainment (grammar school or less for both parents = 2; graduate work for both parents = 16). Composite variable is sum of two items: father's level of educational attainment and mother's level
Initial Institutional Commitment	Ranking of student's college choice (fourth choice or more = 1; first choice = 4)
Active Learning	Composite of five items that measure active learning as any classroom activity that "involves students in doing things and thinking about the things they are doing." These five items focus on the frequency of instructors' engaging in classroom discussion or debate of course ideas and concepts, ask me to point out any fallacies in basic ideas, principles, or points of view presented in the course, ask me to argue for or against a particular point of view, require me to argue for or against a particular point of view and defend my argument in a course paper or research project, and require me to propose a plan for a research project or experiment for a course paper. 1 = never, 4 = very often. Cronbach's alpha = .75.
Institutional Commitment to the Welfare of Students	Composite of ten items measuring student perceptions that the institution is committed to the welfare of students: most student services staff (for example, dean of students office, student activities, housing) are genuinely interested in students, most other college/university staff (for example, registrar, student accounts, financial aid) are genuinely interested in students, most of the campus religious leaders (for example, chaplain, priest, rabbi) are genuinely interested in students, have experienced negative interactions with faculty members (reverse scored), have experienced negative interactions with student services staff (reverse scored), have experienced negative interactions with other college/university staff (reverse scored), faculty members treat students with respect, student services staff treat students with respect, other college/university staff treat students with respect, know where to go if need more information about a policy. Strongly disagree = 1; strongly agree = 4. Cronbach's alpha = .86.
Social Integration	Composite of seven items measuring the degree of a student's integration into campus social system: interpersonal relationships with other students have had influence on intellectual growth; developed close personal relationships with peers; peer relationships have had influence on personal growth, values, and

*(continued)*

**Table 5.1. (continued)**

<i>Variable</i>	<i>Definition</i>
	attitudes; difficulty making friends (reverse scored); few peers would listen to personal problems (reverse scored); peer friendships have been satisfying; student's attitudes and values differ from peers' (reverse scored). Strongly disagree = 1; strongly agree = 4. Cronbach's alpha = .79
Subsequent Institutional Commitment	Composite of two items measuring degree of subsequent commitment to college of enrollment: not important to graduate from this college (reverse scored), made the right decision in choosing to attend this college. Strongly disagree = 1; strongly agree = 4.
Persistence	Student's decision to reenroll at institution for fall: Data source for enrollment status provided by seven institutions (not enrolled = 0; enrolled = 1); source of data for one institution was student response to intent-to-reenroll item on spring survey (recoded strongly disagree or disagree = 0; agree or strongly agree = 1)

## Statistical Design

Four hierarchical linear regression analyses were used to test this study's four hypotheses. In addition to controlling for student entry characteristics and the student's initial level of institutional commitment, each of these regression analyses also controlled for the possible unique effects of the three Carnegie Classification institutional types (Baccalaureate Colleges—General, Baccalaureate Colleges—Liberal Arts, Master's Colleges and Universities I) represented in this study. To control for the unique effects of these three institution types, dummy variables were constructed (1 = focal institution type, 0 = other institution types). These dummy variables were entered into four regression analyses prior to student entry characteristics and initial level of institutional commitment. The .05 level of statistical significance was used to identify statistically significant relationships.

The fourth hypothesis of this study was also tested using logistical regression. Logistical regression was used because of the dichotomous and highly skewed distribution of the measure of student persistence. Logistical regression was used to verify the results of the fourth hierarchical linear regression equation estimated.

## Findings

Table 5.2 displays the results of the regression analysis testing hypothesis 1 and hypothesis 2 of this study. Model 1 uses a student's perception of his or her institution's commitment to student welfare as the dependent variable,

**Table 5.2. OLS Estimates of the Impact of Active Learning on Student Perception of Institutional Commitment to Students and Overall Student Integration**

	<i>Model I</i>	<i>Model II</i>
Active Learning	0.136*** (0.039)	-0.024 (0.035)
Gender	0.092 (0.048)	0.060 (0.043)
Minority	-0.018 (0.070)	-0.104 (0.062)
Parent Income	0.022** (0.007)	0.007 (0.007)
Parent Education	0.004 (0.009)	0.013 (0.007)
High School Grades	0.009 (0.014)	-0.002 (0.012)
Initial Institutional Commitment	0.014 (0.029)	0.054* (0.025)
Institutional commitment to student welfare	—	0.449*** (0.044)
Constant	2.207***	1.271***
Observations	407	407
R-squared	0.109	0.299

Note: Standard errors in parentheses

\*Significant at .05 level. \*\*Significant at .01 level. \*\*\*Significant at .001 level.

and model II uses a student's degree of social integration as the dependent variable. The results indicate that after controlling for a student's demographic information and initial institutional commitment, student perceptions of faculty use of active learning practices have a positive and statistically significant ( $\beta = .136, p = .001$ ) impact on how students perceive their institution's commitment to the welfare of students. The relationship between active learning and a student's degree of overall social integration, however, failed to provide a statistically reliable coefficient ( $\beta = -0.024, p = .493$ ). However, model II indicates that student perceptions of the extent to which their college or university displays a commitment to the welfare of its students exert a positive direct influence on social integration ( $\beta = .449, p = .001$ ).

Tables 5.3 and 5.4 display the findings of the regression analysis testing hypothesis 3 and 4 of this study. Table 5.3 supports the findings of Braxton, Sullivan, and Johnson (1997) and Braxton, Milem, and Sullivan (2000) that social integration is positively and significantly related to a student's subsequent institutional commitment. This table also indicates that a student's level of subsequent institutional commitment is positively related to a student's perception of the institution's commitment to students ( $\beta = .511, p = .000$ ), a student's high school grades ( $\beta = .04, p = .027$ ), and a student's



**Table 5.3. OLS Estimates of the Impact of Social Integration on Subsequent Institutional Commitment**

Social Integration	0.280*** (0.075)
Institutional Commitment to Student Welfare	0.511*** (0.074)
Active Learning	0.069 (0.052)
Gender	-0.051 (0.063)
Minority	-0.070 (0.092)
Parent Education	-0.003 (0.010)
Parent Income	-0.013 (0.011)
High School Grades	0.040* (0.018)
Initial Institutional Commitment	0.089* (0.038)
Constant	0.167 (0.294)
Observations	407
R-squared	0.270

Note: Standard errors in parentheses.

\*Significant at .05 level. \*\*Significant at .01 level. \*\*\*Significant at .001 level.

initial level of institutional commitment ( $\beta = .089$ ,  $p = .020$ ). Table 5.4 indicates that a student's level of subsequent institutional commitment is positively related to retention. In addition to using ordinary least squares regression to examine this relationship, logistical regression was also employed to examine the impact of subsequent institutional commitment on student retention. These results were positive and statistically significant, indicating that a one-unit increase in a student's subsequent institutional commitment raises the odds of that student's remaining enrolled in the institution the following semester by 3.08 times.

## Discussion

The primary goal of this study was to examine the impact of active learning on a student's level of overall social integration and perception of his or her institution's commitment to student welfare. In addition, this study looked at the relationship of a student's social integration, level of subsequent institutional commitment, and persistence. This research extends the previous work of Braxton, Milem, and Sullivan (2000) in its use a multi-institutional sample along with an actual measure of student persistence (as opposed to

**Table 5.4. OLS Estimates of the Impact of Subsequent Institutional Commitment on Student Retention**

Subsequent Institutional Commitment	0.111*** (0.026)
Social Integration	0.034 (0.039)
Institutional Commitment to Student Welfare	-0.045 (0.040)
Active Learning	-0.011 (0.027)
Gender	-0.026 (0.033)
Minority	-0.068 (0.048)
Parent Education	0.010 (0.005)
Parent Income	-0.005 (0.006)
High School Grades	0.003 (0.009)
Initial Institutional Commitment	0.034 (0.020)
Constant	0.371* (0.152)
Observations	407
R-squared	0.120

Note: Standard errors in parentheses.

\*Significant at .05 level. \*\*Significant at .01 level. \*\*\*Significant at .001 level

a proxy measure) and the use of a composite variable to measure student perceptions of faculty use of active learning principles.

Our findings support three of this study's four directional hypothesis. The positive relationship between active learning and student perception of the institution's commitment to student welfare indicates that pedagogical practices that encourage students to engage in doing and thinking during class as opposed to passively listening influences students' belief about how much their institution cares about their success. However, this study's second hypothesis was not supported; we failed to find a statistically significant relationship between active learning and a student's level of social integration. As suggested by the results of model II displayed in Table 5.2, the influence of active learning on social integration may be moderated by the direct effect of the commitment of the institution to student welfare on social integration.

The positive relationship between social integration and a student's subsequent level of institutional commitment and the positive relationship between a student's subsequent level of institutional commitment and their likelihood of persistence is consistent with theoretical formulations (Tinto,

1975; Braxton, Hirschy, and McClendon, 2004). Both of these findings add to the extensive body of evidence indicating the highly reliable nature of these two relationships (Braxton and Lee, 2005).

## Limitations

As with most other research, the results of this study are modified by a couple of limitations. Our sample is limited to residential, religiously affiliated colleges and universities. As a result, the generalizability of this study to other colleges and universities is somewhat limited. The 28.4 percent rate of response to the survey across the eight participating colleges and universities constitutes another limitation. However, this limitation is obviated to some extent by the weighting of survey responses in two institutions by gender and race to ensure some degree of representativeness to their respective campus populations.

## Conclusion and Recommendations for Practice

Faculty use of active learning practices plays a significant role in the retention of first-year college students. This assertion forms the primary conclusion of this study, which lends support to a similar conclusion that Braxton, Milem, and Sullivan (2000) advanced. The pattern of findings of this study tends to indicate that active learning practices that faculty use shape in students the perception that their college or university is committed to their welfare in general and their growth and development in particular, a perception that leads to their sense of social integration. The greater a student's degree of social integration, the greater is his or her level of subsequent commitment to the college or university. The greater the student's level of subsequent commitment to the college or university, the greater is his or her likelihood of persistence in the college or university of initial choice. Thus, active learning plays an indirect but formative role in the retention of first-year college students.

We offer four recommendations for institutional practice:

- Individuals responsible for faculty development activities should develop workshops and seminars focused on assisting faculty members in the development of active learning practices. Braxton, Milem, and Sullivan (2000) also advanced this recommendation. The development of active learning activities requires that faculty acquire new skills given that lecturing, a passive form of instruction, prevails as the primary mode of instruction: more than three-fourths (76.2 percent) of college and university faculty members use it as their primary method of instruction (Finkelstein, Seal, and Schuster, 1998). The skills of active learning emphasized in this study include fostering class discussion of course ideas and concepts and faculty questions posed to students in class that require higher-order thinking to respond.

- Faculty use of active learning practices in their courses should carry some weight in the assessment of faculty teaching performance for reappointment, tenure, and promotion decisions. Annual faculty salary decisions should also give some consideration to the use of active learning practices by faculty members in their courses.
- Individuals who advise first-year students in the selection of their courses should encourage their advisees to enroll in courses, when possible, in which faculty make frequent use of active learning practices. Such academic advisers include faculty members, professional advisers, and peer advisers. This recommendation mirrors and reinforces a suggestion for institutional practice that Braxton, Milem, and Sullivan (2000) advanced.
- Student course rating instruments should include items that ask students how frequently faculty use active learning practices in the focal course, another recommendation that Braxton, Milem, and Sullivan (2000) proposed. The five items used in this study suggest the types of items that course rating instruments might include. The collection of such information is essential for the implementation of the previous two recommendations for practice.

Colleges and universities seeking to reduce their institution's first-year student departure rate should give serious attention to the implementation of these four recommendations for institutional practice. The practices embedded in these recommendations serve as an augmentation to other institutional efforts designed to reduce the unnecessary departure of first-year college students. Moreover, the implementation of these recommendations contributes to student learning because the use of active learning practices by college and university faculty members enhances student knowledge and understanding of course content (Anderson and Adams, 1992; Chickering and Gamson, 1987; Johnson, Johnson, and Smith, 1991; McKeachie, Pintrich, Yi-Guang, and Smith, 1986).

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