

ACADEMIC SERVICE LEARNING, ENGAGEMENT, ACADEMIC  
CHALLENGE, AND RETENTION AMONG COLLEGE STUDENTS

Sarah M. Gallini and Barbara E. Moely

Tulane University

Correspondence concerning this article should be addressed to Sarah M. Gallini at the Department of Psychology, Indiana University, Bloomington, IN 47405 (e-mail: [sarahmgallini@yahoo.com](mailto:sarahmgallini@yahoo.com); Phone: (812) 331-1572; FAX: (812) 856-0458) or to Barbara E. Moely at the Office of Service Learning, Tulane University, 1332 Audubon Street, New Orleans, LA 70118 (e-mail: [moely@tulane.edu](mailto:moely@tulane.edu); Phone: (504) 862-3322; FAX: (504) 862-8061).

Sarah M. Gallini is a graduate student in School Psychology at Indiana University. She earned her Bachelor's degree from Tulane University in 2002, where she carried out this research for her Honors thesis in Psychology. Barbara E. Moely, who served as advisor on the thesis, is Professor of Psychology and Director of the Office of Service Learning at Tulane University. A paper based on this study was presented by Sarah M. Gallini at the Second Annual Meeting of the International Conference on Advances in Service-Learning Research, Nashville, TN, October, 2002.

## ACADEMIC SERVICE LEARNING, ENGAGEMENT, ACADEMIC CHALLENGE, AND RETENTION AMONG COLLEGE STUDENTS

*Undergraduate students evaluating their service-learning courses (N = 142) were more likely than students evaluating other courses (N = 171) to report that the courses promoted interpersonal, community, and academic engagement, were academically challenging, and encouraged continued study at the university (retention). A mediation model showed that the academic challenge of the courses and the students' engagement with course content were most important in determining the influence of service-learning courses on plans to continue study at the university.*

In recent years, service learning has become an integral part of the college curriculum. Campus Compact, a national coalition of college and university presidents committed to the civic purposes of higher education, has shown dramatic growth in membership since its beginning in 1985, with nearly 750 member schools in 2001 (Campus Compact, 2002). A 1998 survey estimated that 10,800 faculty members were involved in teaching 11,800 service-learning courses (Eyler & Giles, 1999). Publications, conferences, funding opportunities from government and foundation sources, and proliferation of websites on service learning all indicate growing interest in this pedagogy. With this growth, there has been increasing interest in evaluations of the effectiveness and benefits of service-learning experiences for college students.

Service learning, by requiring students to apply course concepts and theory to their service in a community setting (Harris, McCarthy, & Tucker, 2000), provides

participants with opportunities to develop a variety of skills, strengthening their academic, personal, communication, and social development, as well as their awareness and understanding of social issues (Eyler & Giles, 1999; Harris, et al. 2000; Moely, McFarland, Miron, Mercer & Ilustre, 2002). The present study investigated the extent to which service learning increases students' engagement with the university and community and increases the likelihood of their continuing their studies at the university (retention).

Past studies have shown that *interpersonal engagement* with peers and others at the university is positively affected by participation in service learning. Eyler and Giles (1999) and others have reported that service learning created opportunities for students to interact with their peers and develop friendships and increased students' ability to interact with others in positive ways.

Numerous studies have shown that service learning enhances a student's *engagement with the community* outside of the university. Studies have shown that service-learning participants, in comparisons with other students, report greater understanding of community problems (Astin & Sax, 1998), greater knowledge and acceptance of diverse races and cultures (Astin & Sax, 1998; McKenna & Rizzo, 1999), and a greater ability to get along with people of different backgrounds (Astin & Sax, 1998; McKenna & Rizzo, 1999). Students who participated in service learning showed significant increases in the belief that they could make a difference (Eyler & Giles, 1994), valued participation in community service and showed a higher commitment to future volunteer service (Eyler & Giles, 1994; Markus, Howard & King, 1993; McKenna &

Rizzo, 1999), and said they planned to become involved in a helping career (Markus, et al., 1993).

While many studies report positive effects of service learning on community engagement, Eby (1998) suggests that service learning could produce negative outcomes under some conditions. He points out that poorly-planned service learning may individualize social issues, de-emphasizing structural components and causes, and thereby, reinforce students' views that community members are deficient. On the same note, service learning can exaggerate the importance of the volunteer, ignoring resources within the community. Thus, Eby cautions, an inadequately planned and organized experience might actually reinforce students' stereotypic thinking and their perceived distance from the community.

Students' *academic engagement* can be affected by service learning, as well. McKenna and Rizzo (1999) found that students reported a positive impact of service learning on their acquisition and understanding of course concepts. Markus, et al. (1993) found that students randomly assigned to service-learning sections of a political science class received significantly better grades than those in non-service sections. Several studies (Balazadeh, 1996; Sugar & Livosky, 1988) have reported that students who took part in service learning earned higher course grades than those students who did not. Moely, McFarland, et al. (2002) found that students reported higher levels of learning about the field of study of their service-learning course. Eyler and Giles (1999) found that more than 58 percent of service-learning students in their national survey felt that they had learned more in their service-learning classes than in their other classes.

However, several studies have reported no differences between the academic achievement of service learners and non-service learners. Miller (1994) and Kendrick (1996) failed to find an impact of service learning on students' grades in courses in Psychology and Sociology. Since most studies of academic outcomes of service learning have involved small numbers of students in specific courses, inconsistent findings may reflect particular course characteristics. The present study obtained reports from students enrolled in a range of courses in the liberal arts and sciences, thus allowing an overall test of the extent to which service-learning courses provide intellectual challenges and promote academic engagement.

Tinto (1993) proposed a model of *institutional retention and departure* to explain why college students persist in their studies or leave the university before obtaining their degrees. According to this model, persistence is affected by the extent to which students become integrated into both social and academic aspects of the college or university. Summarizing his own and others' research, Tinto concluded that students who are more academically and socially engaged in their colleges and communities are more likely to continue study until graduation. Braxton, Sullivan, & Johnson (1997) note that service learning offers the conditions identified in Tinto's theory as most likely to facilitate the development of the meaningful connections between students, faculty, and community that will result in retention.

To date, there have been only a few studies investigating the impact of service learning on student retention. Astin and Sax (1998), in a study of 42 institutions involved in service learning, found that participating in service activities during college was positively associated with the student's satisfaction with the college. Such satisfaction

may result in the higher likelihood of students continuing at the institution. Muthiah, Hatcher, and Bringle (2001) reported data from a large study currently underway on nine college/university campuses in Indiana. Students in service-learning and non-service-learning classes at nine campuses completed questionnaires assessing academic learning, interpersonal interactions, civic responsibilities, and retention. Retention was measured with questions asking about whether the particular course had an impact on students' plans to complete their college degree at their institution and whether or not the course affected the students' likelihood of continuing at the college. Students in service-learning courses attributed significantly more importance to "this class" on their likelihood of persistence at their campus than did non-service-learning students.

The present study examined the effects of service learning on college student engagement and retention by asking students their views of their courses at the end of a semester. A questionnaire was developed to measure the students' views of their service-learning or comparable control courses. Students indicated how much the course had influenced their engagement with the university and community and their plans to continue at the university. In addition, the academic challenge posed by the course was assessed. It was hypothesized, on the basis of research reviewed above, that 1) students in service-learning courses would score higher on interpersonal, community, and academic engagement; 2) they would rate their classes as more academically challenging than non-service-learning participants did; 3) service-learning students would indicate that their courses influenced their plans to continue at the university to a greater extent than would non-service-learning students; and 4) following Tinto's (1993) model, it was proposed

that students' academic and interpersonal engagement would mediate the relationship between service learning and retention.

## Method

### Participants

College students from a private research university in a Southern city completed a questionnaire that asked about one of their academic courses. Data were gathered from 333 students at the end of a semester. Approximately half of the students had been engaged in service learning through the academic course for which they completed the questionnaire. The remaining students answered the questions with regard to an academic course they were taking that did not include service learning. The service-learning students came from 17 courses representing 12 academic disciplines in the liberal arts and sciences. Twenty students' data were dropped because they were completing service learning for a course different from the one in which they completed the questionnaire. The final sample, then, included 142 students who participated in service learning and 171 students who did not participate in service learning.

As seen in Table 1, service-learning and non-service-learning students are similar in most characteristics assessed. Many of the students identified themselves as white and female. The average age was 20 years. Distribution across year in college was fairly equal. College grade point averages (GPAs) were in the "B+" range. Students reported engaging in paid employment average of 7.08 hours per week, and volunteering for community service (not associated with an academic course) for about one hour each week. Students reported that they spent on average 15.2 hours per week studying for all of their classes.

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Insert Table 1 about here

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Students majored in Biological Sciences (Biology, Cell Biology, EEOB, Neuroscience), Arts and Humanities (English, foreign languages, Communication, Architecture), Social Sciences (Anthropology, History, Sociology), Business (Business, Economics, Marketing, Finance), or Psychology. Psychology was treated as a separate category because of the large student numbers in that field. Nearly a third of the sample reported that they had not yet chosen a major, reflecting the substantial number of first- and second-year students in the sample. Most students expected to continue their education beyond the bachelor's degree, a very typical finding for students attending this university. About one third of the sample had done service learning in grades k-12, and 17 % had previously taken a service-learning course at the university.

Chi-square tests and analyses of variance comparing service-learning and non-service-learning students showed only one difference in the characteristics described in Table 1: Students not carrying out service learning were employed more hours each week than those who were doing service learning,  $F(1,313)=3.85, p<.05$ . This variable was controlled statistically in comparisons of the service-learning and non-service-learning groups, reported below.

#### Measures

A questionnaire was developed to assess students' views of how their courses had influenced their engagement with other university students, with the community, and with academic material; their views of the academic challenge of their courses; and their

plans to continue at the university. New items were created for this survey and combined with items adapted from questionnaires developed by Muthriah, et al. (2001), Eyler and Giles (1999) and Moely, Mercer, Ilustre, Miron, and McFarland (2002). Five scales were derived from the questionnaire.

Items measuring students' engagement with aspects of the university and community were grouped into three scales on the basis of a Principal Component Analysis with Varimax rotation. This analysis yielded a three-factor solution that accounted for 48.4% of the variance in the scores. The three engagement scales, shown in Table 2, are described as follows:

1. *Community engagement* (Factor 1, accounting for 31% of the variance in scores). Respondents evaluated the extent to which their attitudes changed as a result of course participation. Items concerned attitudes toward people of different backgrounds, understanding of the problems facing the community, and feelings of connection to the community. (Cronbach's coefficient  $\alpha = .89$ )
  2. *Academic engagement* (Factor 2, 10% of variance accounted for). Respondents described their satisfaction with the academic course and the university and their connectedness to their studies and field of interest. (Cronbach's coefficient  $\alpha = .88$ )
  1. *Interpersonal Relationships/Engagement* (Factor 3, 7% of variance accounted for). Respondents evaluated the influence of the course on their ability to work with others effectively, communicate with other students and make friends. (Cronbach's coefficient  $\alpha = .85$ )
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Insert Table 2 about here

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Two additional scales included in the questionnaire and described in Table 3, were the following:

2. *Academic Challenge*. Respondents assessed the course's qualities, such as intellectual challenge, extent of learning, and difficulty. (Cronbach's coefficient  $\alpha = .82$ )
3. *Retention*. Respondents evaluated the course's impact on their continuing study at the university. (Cronbach's coefficient  $\alpha = .74$ )

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Insert Table 3 about here

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In the same questionnaire, students were asked to indicate their gender, age, race, year in school, GPA, and previous community service experiences. Current service learners described aspects of their service-learning experience, including their participation in orientation and training sessions, course requirements, and community site characteristics.

#### Procedure

Questionnaires were administered to students in their college classes at the end of the semester, usually during the last class meeting. Students did not give their names on the questionnaires and their participation in the research was voluntary. Participants were

invited to register for a drawing in which several gift certificates for local restaurants and retail establishments were awarded.

Students who completed service learning indicated whether or not they took advantage of various opportunities available through the university's Office of Service Learning. This office facilitates the students' success in the program through on-site orientations, training sessions, and opportunities for oral and written reflection, all of which involve discussions of issues involved when working in a diverse community. Student responses indicated that most service learners (89% of respondents) attended on-site orientation sessions. Most (82%) reported that they attended "rap" sessions (discussion sessions about their service-learning experiences). Many (59%) reported completing a reflective journal for their course. About half took part in training sessions for diversity and skill development that were organized and carried out by community members working together with university representatives.

Service-learning students were asked various questions regarding how they spent their time while carrying out service learning. The average number of hours per semester required in a class was  $M = 31.8$  ( $SD = 8.9$ ). Students reported that they actually carried out more hours than required,  $M = 32.4$  ( $SD = 10.4$ ). Students reported that they spent  $M = 3.67$  hours ( $SD = 1.69$ ) during a typical week completing community service activities for their course and  $M = 1.42$  hours ( $SD = 1.63$ ) completing assigned reflection activities. More than 70% of the students indicated that over half of their service time was spent in direct contact with people who benefited from their service.

Service learning at this university is either incorporated into a 3-credit academic course or one add-on course credit can be offered for a more intensive service-learning

experience. To earn the fourth credit, the student is required to spend at least 40 hours in a community setting during the semester, complete a reflection component (journal or a diary), discuss his/her service-learning experiences with the instructor, and complete a project or product by the end of the semester. The majority (68%,  $N = 97$ ) of the service-learning students in this study took the optional fourth credit for service learning.

## Results

### Service Learning and Non-Service Learning Comparisons

Service-learning students evaluated their courses more positively than did non-service learners. A multivariate analysis of variance was performed on scores for engagement, academic challenge, and retention, comparing service-learning and non-service-learning students. Hours spent working in a job was held constant in the analysis since service-learning and non-service-learning groups differed on that measure. The analysis indicated a significant overall effect of service-learning participation, Multivariate  $F(3, 311) = 43.50, p < .001$ . Follow-up univariate analyses of variance of each score showed significant differences between the service-learning participation group and those not doing service learning, as indicated in Table 4. Specifically, service-learning students scored significantly higher on all five of the scales than did non-service-learning participants: For the community engagement scale,  $F(1, 307) = 120.24, p < .001$ ; for the academic engagement  $F(1, 307) = 19.73, p < .001$ ; for interpersonal engagement,  $F(1, 307) = 49.72, p < .001$ ; for the academic challenge scale,  $F(1, 307) = 25.89, p < .001$ ; and for retention,  $F(1, 307) = 23.38, p < .001$ . A separate analysis of covariance showed that service-learning students spent more hours studying for the

course they evaluated than did the non-service-learning students,  $F(1, 307) = 4.12, p < .05$ .

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Insert Table 4 about here

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### Testing a Mediation Model

To further investigate the relationship between service learning and retention, a mediation model was used to test a hypothesis derived from Tinto's model that service learning (A) would predict student retention (C) through the mediating effects of academic and interpersonal engagement (B), that is,  $A \rightarrow B \rightarrow C$ . According to Baron and Kenny (1986), four conditions must be met in order to establish a variable as a mediator: 1) the relation between the independent variable or predictor, A, (in this case, service learning) and the mediator, B (interpersonal, community, and academic engagement, and academic challenge) must be significant, 2) the relation between the mediator, B, and the dependent variable or outcome C (retention) must be significant, 3) the relation between the predictor variable, A, and the outcome variable, C, must be significant, and 4) the relation between the predictor variable, A, and the outcome variable, C, must be significantly diminished when the mediating variable, B, is entered into the regression equation. Full mediation is demonstrated if prediction of the A  $\rightarrow$  C relationship is reduced to zero when B variables are included as additional predictors of C.

Conditions 1 and 3 have already been demonstrated above, in analyses of covariance showing that service learning, A, predicted each of the mediating variables, B

(interpersonal, community, and academic engagement, and academic rigor) and also predicted the outcome variable, C (retention).

Tests of conditions 2 and 4 were made using a 2-step hierarchical regression analysis predicting retention, C. The predictor variable, A (service-learning participation) was entered into the regression in Step 1. The potential mediating variables, B (interpersonal, community, and academic engagement, and academic challenge) were added to the regression equation in Step 2. Condition 2 was partially satisfied by the results of this analysis, in that two of the mediating variables, B (academic engagement and academic challenge) significantly predicted the outcome variable, C (retention). Condition 4 was satisfied in this regression because the relation between the predictor, A, and the outcome variable, C, decreased substantially from Step 1 to Step 2. The standardized regression coefficient ( $\beta$ ) for service learning as a predictor of retention in Step 1 was significant ( $\beta = -.272, p < .001$ ); the regression coefficient for service learning as a predictor was reduced to a non-significant level in Step 2 ( $\beta = .086$ ), as shown in Table 5.

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Insert Table 5 about here

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In summary, results indicated that service-learning courses are viewed as promoting interpersonal, community, and academic engagement, and academic challenge ( $A \rightarrow B$ ), as well as retention ( $A \rightarrow C$ ). Academic engagement and academic challenge predicted retention ( $B \rightarrow C$ ). The relationship between service learning and retention ( $A \rightarrow C$ ) was reduced in Step 2, as it should be when mediation occurs. It is concluded,

then, that academic engagement and academic challenge were aspects of service-learning courses that most influenced students' plans to continue study at the university.

### Discussion

In this study, we contribute new information about the relationship between service learning and retention. This is one of the first studies to use a mediation model to demonstrate that participation in service-learning courses affects students' plans for continued study and that the academic aspects of the service-learning course are most important in accounting for this effect. Inclusion of students from a number of different courses, involving a variety of community placements, allowed a test of the mediation model and also, assured the generalizability of findings beyond that possible if only a few courses or community sites had been considered.

The positive influence that service learning had on student retention is consistent with Muthiah, et al (2001), who found that students who participated in service learning felt that their class had an influence on their persistence to continue at college. The debate about whether or not service learning should be included as part of the college curriculum has primarily focused on how it affects a student's personal and attitudinal development (Eyler & Giles, 1999; Moely, McFarland, et al. in press), and not how it might influence continuation at the institution. Student retention is an issue of great concern to colleges and universities (Braxton, et al, 1997; Tinto, 1993); findings about influences on retention will help determine policies and programmatic emphases in the future.

Although service-learning students were more positive in general about their courses than were a comparable group of students who did not participate in service learning, it was the academic aspects of the service-learning courses that were most

important in predicting the influence of service learning on retention. Involvement in academic course content and the challenge posed by the course were the aspects of service learning that predicted retention. Those in service learning had opportunities to apply concepts that they learned in their courses to their service, reflect on the concepts they were learning and develop a deeper understanding of course material. Although service-learning and non-service-learning students did not differ in total study time they reported for all of their courses, service-learning students reported significantly more study time for the service-learning class compared to non-service-learning students, and viewed their courses as more academically challenging. A well-planned service-learning course, in which the service activity is coordinated with course concepts, will challenge students and develop their interest and motivation in the content of the course.

Students who evaluated their service-learning courses indicated that the course enhanced their interpersonal and community engagement, findings again consistent with previous studies (Eyler & Giles 1999; Muthiah et al, 2001). Students participating in service learning may have shown such increases because of special opportunities offered through service learning. Reflection sessions, participation in orientations and training, and travel together to service sites all provided opportunities for peer interaction. The service experience provided students with opportunities to leave the campus for the “real world,” where they worked with people quite different from themselves in race, social class, and other characteristics. They were required to show initiative, understanding, and flexibility in interacting with new situations and individuals with different backgrounds from themselves, providing opportunities for them to become engaged with the community.

Although the results of the study are encouraging, limitations should be acknowledged. First, the study was solely based on an end-of-semester assessment. There was no pre-test measuring the students at the beginning of service learning to see if there were initial group differences. Eyer, Giles, and Braxton (1997) found that students who chose to participate in service learning were different from those who did not take part, showing more positive citizenship values and views of social justice, as well as higher self-assessments regarding skills and personal efficacy. Similarly, the service-learning students may have been more enthusiastic about their studies and experiences even before they chose to take part in service learning.

As in most studies of service learning, students were not randomly assigned to participate in service learning. Some argue that students should be randomly assigned to conditions so that some are required to participate in service, in order to evaluate service learning outcomes appropriately (Keith, 1994). However, it has been shown that requiring students to engage in community service to do so may produce negative outcomes. Stukas, Snyder & Clary (1999) found that “mandatory volunteerism” actually can reduce interest in service activities by altering individuals’ perceptions of why they help. If students perceive that they engage in service only when they are required to do so, any positive effects of service learning might well be compromised. Thus, it seems that random assignment with required participation in service learning may actually be counterintuitive to the goals of service learning and an inappropriate procedure for evaluative research.

A better alternative to random assignment is to use statistical tests to control for differences between service-learning and non-service-learning groups. Deliberate efforts

were made in the present study to select classes in which both service-learning and non-service-learning students were involved and to find comparable control classes.

Consequently, individuals participating in service learning and not participating in service learning did not differ in characteristics such as age, race, sex, year in school, GPA and total time spent studying. The one difference identified, number of hours worked per week, was controlled statistically in analyses of service-learning effects.

Overall, the findings of this study support the value of service learning for enhancement of college students' interpersonal, community, and academic engagement, as well as the students' perceptions of their courses as more challenging, and most importantly, the likelihood that they would continue their studies to graduation.

Additional work should aim to identify the core characteristics that make service learning worthwhile, so that the benefits can be maximized. Comparisons of programs at different campuses, serving varied college populations, are needed in order to replicate and elaborate on the findings of the present study.

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Table 1

*Characteristics of Research Participants*

	ALL	Service Learning	Non-Service Learning
Number of Respondents	313	142 (44%)	171
(56%)			
% Female	70%	72%	67%
Ethnicity			
African American	8%	8%	7%
Asian American	4%	4%	4%
Hispanic	4%	5%	4%
White	79%	78%	81%
Other or No Response	5%	5%	4%
Age: Mean Years, (SD)	20.01 (1.84)	20.01 (1.67)	20.10
(1.94)			
Year in College			
First	23%	24%	
24%			
Second	28%	23%	
30%			
Third	21%	23%	19%

Fourth	28%	30%	
27%			
Mean Grade Point (SD)	3.33 (.48)	3.36 (.48)	3.29
(.48)			

Table 1 (continued)

	ALL	Service Learning	Non-
Service Major			
Learning			
Biological Sciences	13%	17%	
10%			
Humanities and Arts	19%	15%	
21%			
Social Sciences	11%	5%	
18%			
Business	8%	7%	
7%			
Psychology	19%	23%	
16%			
Other or Undecided	30%	33%	
28%			
Hours Working per wk (SD)	7.08 (10.6)	5.83 (10.4)	
8.2 (10.7)			
Hours of Community Service per wk	1.38 (3.8)	1.10 (2.8)	
1.68 (4.8)			
Total Hours Studying per wk (all Classes)	15.2 (9.0)	15.6 (8.2)	
14.9 (9.6)			
Planned Highest Degree			

Bachelor's	14%	11%
16%		
Master's	39%	32%
45%		
Ph.D.	16%	20%
13%		
Professional	31%	37%
26%		
Service Learning Done in K-12	36%	38%
35%		
Previous Service Learning College	17%	18%
15%		

Table 2

*Items and Factor Loadings for Three Aspects of Engagement*

FACTOR 1- COMMUNITY ENGAGEMENT (*alpha* =.89, *N* = 333)

Factor 1

Through this course:

Loadings\*

I increased my awareness of problems facing the (city name) community.\*\*

.81

I became more aware of the community of which I am part.

.81

I learned about the community.

.74

My interest in knowing and working with people from diverse backgrounds was increased. .70

I have come to feel more connected to the (city name) community.

.67

I gained a new perspective on the lives of people from different backgrounds.

.67

I learned to appreciate different cultures.

.63

I learned about the complex problems faced by the people with whom I work.

.62

I learned to see social problems in a new way.

.58

I became more interested in a career in community work.

.53

FACTOR 2 - ACADEMIC ENGAGEMENT (*alpha* =.88, N = 333)

Factor 2

Through this course:

Loadings

I would highly recommend that other students take this course.\*\*

.76

I look forward to attending class.

.72

I was satisfied with the quality of learning experiences in this class.

.71

I became more interested in the field represented by this course.

.70

I feel more positive about the quality of instruction at (university name).

.69

I gained a deeper understanding of things I learned about in this course.

.61

Table 2 (continued)

FACTOR 2 - ACADEMIC ENGAGEMENT (continued)

Through this course:

I feel more positive about the course offerings at (university name).

.57

I became more satisfied with (university name).

.53

I have come to feel more connected to my studies/major.

.52

I have come to feel more connected to (university name).

.51

I better understand the role of a professional in this field.

.51

I learned to apply concepts from my course to real situations.

.50

FACTOR 3- INTERPERSONAL ENGAGEMENT (*alpha* =.86, N = 333)

Factor 3

Through this course:

Loadings

I have developed friendships with other students.\*\*

.82

I have developed a friendship with at least one other student in the class.

.79

I had frequent conversations with classmates outside of the designated class time.

.75

I benefited a great deal from the interactions I had with other students in this class.

.68

I became acquainted with college students from very different backgrounds than mine.

.59

I learned how to work with others effectively.

.53

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\_\_\_\_\_

\*Values are factor loadings for each item on the factor on which it loaded most strongly.

\*\* Students responded to each item using a 5-point scale, where 1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither Disagree nor Agree, 4 = Somewhat Agree, and 5 = Strongly Agree

Table 3

*Questionnaire Items Measuring Academic Challenge and Retention*

ACADEMIC CHALLENGE ( $\alpha = .82$ ,  $N = 333$ )

Compared to my other courses:

I learned \_\_\_ in this course.\*

I found myself \_\_\_ motivated to work in this class.

I found this course to be \_\_\_ intellectually challenging.

I found myself devoting \_\_\_ time to this course.

I found lectures and discussions to be \_\_\_ intellectually challenging in this course.

I found interactions with other students in this course to be \_\_\_ intellectually  
challenging.

I found myself reflecting \_\_\_ on the concepts I have been learning in this course.

I expect to receive a grade (5=much higher, 1=much lower)

RETENTION ( $\alpha = .74$ ,  $N = 333$ )

As a result of my participation in this course:

I am \_\_\_ positive about being at this university.\*

I am \_\_\_ likely to continue as a student at this university.

I am \_\_\_ likely to stay at this university until I graduate

---

\* Students responded to each item using a 5-point scale, where 1 = Much Less, 2 = Less, 3 = the Same, 4 = More, and 5 = Much More

Table 4

*Means and Standard Deviations for Service-learning and Non-Service-learning Students on each Measure*

	Non- Service Learning	Service Learning
Engagement		
Community Engagement***	3.86 (.59)	3.06 (.65)
Academic Engagement***	3.86 (.56)	3.53 (.71)
Interpersonal Engagement***	3.78 (.75)	3.11 (.93)
Academic Challenge***	3.68 (.52)	3.33 (.63)
Hours Studied for this Course (per wk) ***	3.7 (3.2)	3.1 (2.7)
Retention***	3.55 (.57)	3.23 (.47)

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*Note.* To obtain scale scores, students' scores on items given in Tables 2 and 3 were summed and averaged. Scale scores could range from 1 to 5 points.

\*\*\* Differences between service-learning and non-service-learning students' mean scores were significant according to multivariate and univariate analyses of co-variance, at  $p < .001$ .

Table 5

*Predicting Retention from Service Learning: Regression Analysis*

Predictor	<i>B</i>	<i>SE B</i>	<i>Standardized Beta Weights (<math>\beta</math>)</i>
Step 1			
S.L. Participation			-.287
Hours Spent Working			-.002
<i>R</i>			.277
Adjusted <i>R</i> <sup>2</sup>			.071
<i>F</i> (2, 307)			
Step 2			
S.L. Participation			-.093
Hours Spent Working			-.002
Academic Engagement			.222
Academic Challenge			.213
Interpersonal Engagement	.006		.035
Community Engagement			.055
<i>R</i>			.553
<i>R</i> <sup>2</sup> Change (Step 1 to Step 2)			.230
<i>F</i> (4, 303) Change (Step 1 to Step 2)	25.08***		
Total Adjusted <i>R</i> <sup>2</sup>			.292
Total <i>F</i> (6, 303)			

\*\*\*  $p < .001$