

The Effects of Service-Learning on Retention

A Report to the Northern New England Campus Compact

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Introduction

This study was a replication and extension of research by Gallini and Moely (2003) that focused on retention, academic challenge, community engagement, and academic engagement in students who did and did not participate in service-learning. Gallini and Moely tested 333 college students from a single university in the a southern city with a questionnaire that they designed to tap different forms of engagement as well as the extent to which students felt academically challenged and likely to stay at their college or university. Students who participated in service-learning courses scored significantly higher on all measures; they reported higher community engagement, academic engagement, interpersonal engagement, academic challenge, and likelihood to remain at the university (retention) than students in courses that did not include service-learning. In addition, a mediation model showed that academic challenge and academic engagement were the elements of service-learning courses that most influenced students' decision to stay at the university (retention).

The present study extended Gallini and Moely's (2003) work by testing students from a broad range of colleges and universities in northern New England who were enrolled in courses that involved either a low, medium, and high amount of service-learning. Key differences between this study and Gallini and Moely (2003) thus included a larger sample size that incorporated both undergraduate and graduate students and a different operationalization of service-learning. In the latter case, rather than comparing students in a service-learning course to students not in such a course, this study looked at students in service-learning courses that had either 0-1 hour of service-learning per week, 2-3 hours of service-learning per week, or 4 or more hours of service-learning per week. Like Gallini and Moely, we also tested a mediational model to see if the effect of service-learning on retention was due to its effect on other variables, such as academic challenge, community engagement, and academic engagement.

Method

Participants

Participants were 401 undergraduate and graduate students from northern New England colleges and universities who completed a web-based questionnaire. Invitations to participate came from state Campus Compact offices in Maine, New Hampshire, and Vermont. As shown in Table 1, the respondents had a mean age of 22.39 years; the majority of participants were female and white. Most participants (89.4%) were in their first four years of college, and 83.7% expected to achieve either a bachelor's or master's degree. Only 32.3% of the sample had service-learning experience prior to college, but 74.0% indicated future service-learning plans.

Table 1 also shows the sample divided according to the amount of service-learning called for in the course for which they answered the questionnaire. If respondents indicated 0-1 hours of service-learning per week, they fell into the "low-frequency" category; if 2-3 hours, "medium-frequency," and if 4 or more hours a week, "high-frequency." The table shows that most students completed 2-3 hours of service-learning per week. Gender and ethnicity percentages was roughly constant in these three groups, but the low-frequency group showed a higher percentage of first-year college students as well as a lower rate of service-learning prior to college.

Measures

The questionnaire used in this research was based on one used by Gallini and Moely (2003) to measure students' views of how service-learning affected their overall academic experience. In the present study, after answering a series of background questions, students indicated how helpful specific components of their service-learning course were in understanding the course content. They answered these questions on a 5-point scale, with 1 = no help and 5 = very much help. Then, they answered questions about how their service-learning experiences in the course affected retention, academic challenge, community engagement, and academic engagement. The items measuring retention, academic challenge, community engagement, and academic engagement were grouped into four scales based on Gallini and Moely's (2003) factor solution and conceptual alignment.

The retention scale consisted of four items evaluating whether the participants thought service-learning had an impact on their continuing study at the same institution (Cronbach's coefficient $\alpha = .818$). Participants answered three of the questions on a 5-point scale, with 1 = much less and 5 = much more; a fourth item was answered on a different 5-point scale, with 1 = strongly agree and 5 = strongly disagree.

The academic challenge scale consisted of seven items evaluating the course's perceived intellectual challenge and difficulty (Cronbach's coefficient $\alpha = .801$). Participants answered six questions on a 5-point scale, with 1 = much less and 5 = much more; a single item asked about expected grade compared to other course grades, with 1 = much higher and 5 = much lower.

The community engagement scale consisted of ten items that asked participants to evaluate their attitudes toward the community as a result of taking the service-learning course; items focused on views toward people from varying backgrounds and awareness of community problems (Cronbach's coefficient $\alpha = .907$). Participants answered on a 5-point scale, with 1 = strongly agree and 5 = strongly disagree.

The academic engagement scale consisted of thirteen items that asked participants to indicate their overall satisfaction with the service-learning course they took and how well they felt connected to their major and college or university after this experience (Cronbach's coefficient $\alpha = .931$). Participants answered on a 5-point scale, with 1 = strongly agree and 5 = strongly disagree.

Procedure

Faculty members in academic departments that had received Engaged Department grants from state Campus Compact offices in Maine, New Hampshire, and Vermont were asked to invite their students to complete the questionnaire on-line at the end of each semester during the 2008-09 academic year. In addition, other faculty members who taught service-learning courses at these institutions were asked to invite their students to participate.

Results and Discussion

The results are presented below. Descriptive statistics are followed by inferential statistics where appropriate.

Table 2 shows the mean ratings of helpfulness of eight different components of service-learning courses. As the table shows, students rated real world issues ($M = 3.90$, $SD = 1.07$) as most helpful and completing a journal ($M = 2.82$, $SD = 1.40$) as least helpful components in understanding the content of the course.

Table 3 shows the means scores for the four scales of retention, academic challenge, community engagement, and academic engagement according to whether the service-learning was of low, medium, or high frequency. As the table indicates, students who engaged in medium- or high-frequency service-learning scored higher on all four scales than students who engaged in low-frequency service-learning. To see whether the differences in Table 3 were statistically significant, four one-way analyses of variance were run. All the results were statistically significant: $F(2, 393) = 4.05$, $p = .018$ for retention; $F(2, 394) = 21.92$, $p = .000$ for academic challenge; $F(2, 368) = 16.72$, $p = .000$ for community engagement; and $F(2, 353) = 13.02$, $p = .000$ for academic engagement.

A mediation model, similar to Gallini and Moely's (2003), was used to further investigate the relationship between service-learning and retention. The model is based on the prediction that service-learning (predictor) predicts student retention (dependent variable) through the mediating effects of academic challenge, community engagement, and academic engagement. A two-step hierarchal regression analysis predicting retention was used. The first step tested the relation between frequency of service-learning participation (predictor) and retention (dependent variable). The second step tested whether the inclusion of the mediators as additional predictors of retention significantly diminished the relation between it and the original predictor variable (frequency of service-learning participation). As Table 4 indicates, the predictor variable was entered into the regression in Step 1; the potential mediating variables were added to the regression equation in Step 2. The results showed that when two of the mediating variables, academic challenge and academic engagement, were entered into the regression, the regression coefficient for service-learning's effect on retention went from significant to nonsignificant. In other words, just as Gallini and Moely (2003) showed, we found that the prediction of retention from service-learning was reduced when the mediating variables of academic challenge and academic engagement were added to the regression equation.

Table 5 shows the mean scores for the four scales of retention, academic challenge, community engagement, and academic engagement according to frequency of service-learning for students who have completed different numbers of years of higher education. As the table shows, the pattern of results for the sample as a whole obtains at most levels of higher education completed, although it appears to be strongest for students who have completed one year of college.

Table 6 shows the mean scores for the four scales of retention, academic challenge, community engagement, and academic engagement according to frequency of service-learning for women and men. As the table shows, the pattern of results for the sample as a whole holds for both women and men.

Table 1

Characteristics of Research Participants

	<u>All</u>	<u>Low Freq S-L Students</u>	<u>Med Freq S-L Students</u>	<u>High Freq S-L Students</u>
Number of Respondents	401	132	179	89
% Female	70.7%	68.2%	68.7%	78.4%
Years in College				
One	27.1%	36.4%	24.7%	17.9%
Two	16.2%	11.6%	20.7%	14.3%
Three	30.7%	27.1%	30.5%	35.7%
Four	15.5%	11.6%	17.2%	17.9%
More	10.6%	13.2%	6.9%	14.3%
Ethnicity				
African American	2.3%	3.0%	1.1%	3.4%
Asian American	2.8%	6.1%	.6%	2.3%
Hispanic	2.0%	0%	1.7%	5.7%
White	89.5%	87.1%	93.3%	85.2%
Other	3.6%	3.8%	3.3%	3.4%
Planned Highest Degree				
Associate's	1.0%	0%	1.7%	1.1%
Bachelor's	36.1%	40.8%	34.3%	33.3%
Master's	47.6%	36.9%	53.1%	51.7%
Doctorate	9.4%	14.6%	7.4%	5.7%
Professional (MD/Law)	5.9%	7.7%	3.4%	8.0%
S-L before College	32.3%	25.4%	36.2%	35.2%
Future S-L Plans	74.0%	67.7%	77.6%	75.9%
Mean Age in Years	22.39	22.53	22.01	22.68

Note. Low frequency service-learning = 0-1 hours per week, medium frequency service-learning = 2-3 hours per week, high frequency service-learning = 4 or more hours per week.

Table 2

Means and Standard Deviations for All Students on each Measure

<u>Help From Each Component</u>	<u>M</u>	<u>SD</u>	<u>n</u>
Real World Issues	3.90	1.07	392
Working w/ Community Partner	3.70	1.22	385
Group Work	3.73	1.17	377
Lectures	3.73	1.12	392
Class Discussions	3.67	1.14	384
Reading Textbook	3.01	1.28	318
Completing Journal	2.82	1.40	245
Completing Writing Assignments	3.39	1.07	371

Table 3

Means and Standard Deviations for Low, Medium, and High Frequency Service-Learning Students on each Scaled Measure

	<u>Low (M, SD, n)</u>	<u>Medium (M, SD, n)</u>	<u>High (M, SD, n)</u>
Retention	3.29 (.69) 131	3.52 (.64) 178	3.49 (.85) 87
Academic Challenge	3.06 (.67) 131	3.50 (.53) 178	3.50 (.72) 88
Community Engagement	3.41 (.82) 123	3.82 (.67) 167	3.95 (.68) 81
Academic Engagement	3.49 (.84) 119	3.90 (.62) 162	3.87 (.28) 75

Note. Low frequency service-learning = 0-1 hours per week, medium frequency service-learning = 2-3 hours per week, high frequency service-learning = 4 or more hours per week.

Table 4

Predicting Retention from Service-Learning: Regression Analysis

<u>Predictor</u>	<u>B</u>	<u>SE B</u>	<u>β</u>
Step 1			
Frequency of S-L Participation	.145	.050	.157**
Step 2			
Frequency of S-L Participation	-.004	.040	-.005
Academic Challenge	.128	.061	.119*
Community Engagement	.090	.063	.103
Academic Engagement	.459	.073	.503**

Note. Adjusted $R^2 = .022$ for Step 1; $\Delta R^2 = .430$ for Step 2 ($ps < .05$).

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

Table 5

Means and Standard Deviations for Low, Medium, and High Frequency Service-Learning Students by Years of College Completed

	<u>Low Freq S-L Students</u>	<u>Med Freq S-L Students</u>	<u>High Freq S-L Students</u>
1 Year in College			
Retention	3.30 (.73) 47	3.73 (.64) 43	3.92 (.86) 15
Academic Challenge	2.90 (.64) 47	3.56 (.62) 43	3.68 (.50) 15
Community Engagement	3.35 (.74) 41	3.95 (.80) 41	4.22 (.64) 14
Academic Engagement	3.43 (.79) 43	3.98 (.74) 42	4.17 (.67) 13
2 Years in College			
Retention	3.35 (.65) 15	3.51 (.71) 35	3.70 (.63) 12
Academic Challenge	3.10 (.84) 15	3.29 (.59) 35	3.45 (.57) 12
Community Engagement	3.50 (.67) 14	3.78 (.65) 32	4.07 (.57) 11
Academic Engagement	3.45 (.83) 14	3.79 (.69) 28	3.89 (.76) 11
3 Years in College			
Retention	3.37 (.84) 35	3.49 (.55) 53	3.38 (.95) 29
Academic Challenge	3.24 (.67) 25	3.64 (.37) 53	3.50 (.74) 29
Community Engagement	3.68 (.89) 34	3.88 (.52) 48	3.95 (.64) 26
Academic Engagement	3.69 (.96) 31	3.97 (.46) 48	3.83 (.58) 24
4 Years in College			
Retention	3.30 (.42) 15	3.38 (.70) 30	3.55 (.70) 14
Academic Challenge	3.28 (.51) 15	3.58 (.52) 30	3.68 (.66) 15
Community Engagement	3.43 (.70) 14	3.69 (.72) 29	3.95 (.75) 13
Academic Engagement	3.66 (.65) 13	3.94 (.60) 28	3.85 (.81) 12
More than 4 Years in College			
Retention	3.09 (.47) 16	3.25 (.50) 12	3.14 (.52) 12
Academic Challenge	2.78 (.64) 16	3.31 (.55) 12	3.26 (.58) 12
Community Engagement	2.94 (.80) 17	3.60 (.75) 12	3.43 (.73) 12
Academic Engagement	3.13 (.85) 15	3.61 (.59) 11	3.60 (.72) 12

Note. Low frequency service-learning = 0-1 hours per week, medium frequency service-learning = 2-3 hours per week, high frequency service-learning = 4 or more hours per week.

Table 6

Means and Standard Deviations for Low, Medium, and High Frequency Service-Learning Students by Gender

	<u>Low Freq S-L Students</u>	<u>Med Freq S-L Students</u>	<u>High Freq S-L Students</u>
Women			
Retention	3.26 (.61) 90	3.52 (.64) 123	3.54 (.83) 68
Academic Challenge	3.02 (.70) 89	3.50 (.57) 122	3.48 (.66) 68
Community Engagement	3.43 (.81) 84	3.83 (.69) 114	4.02 (.67) 61
Academic Engagement	3.50 (.82) 81	3.90 (.64) 109	3.93 (.70) 58
Men			
Retention	3.37 (.86) 40	3.51 (.64) 55	3.43 (.68) 18
Academic Challenge	3.13 (.63) 41	3.51 (.46) 56	3.71 (.54) 19
Community Engagement	3.38 (.85) 38	3.79 (.65) 53	3.74 (.67) 19
Academic Engagement	3.50 (.90) 37	3.91 (.57) 53	3.66 (.57) 17

Note. Low frequency service-learning = 0-1 hours per week, medium frequency service-learning = 2-3 hours per week, high frequency service-learning = 4 or more hours per week.