

Service-Learning as a Catalyst for Attitudinal and Behavioral Changes Leading to Student Success: An Exploratory Study

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ABSTRACT

Service-learning has grown in relevance since its inception more than a century ago to its current status as a recognized asset to educational institutions around the world. By linking students to their communities, service-learning helps institutions promote both social and academic development. This paper documents the collaboration between The Shriver Center at the University of Maryland, Baltimore County (UMBC), and the UMBC Information Systems (IS) Department, on a pilot service-learning course designed to engage academically at-risk undergraduate students. The results of the course have shown positive student attitudinal changes and academic growth. Based upon the merit demonstrated by the first two semesters of the IS collaboration, The Shriver Center has gone on to administer similar projects with additional departments and at-risk student groups.

Keywords: Service-learning, Undergraduate, Retention Rates, Attitudinal Changes, Student Success

INTRUCTION

In 2007, thirty percent (30%) of college/university students attending over 1,100 institutions committed on average five hours of service each week in service to their local communities through their campuses' community service and service-learning programs [1]. This information represents an ever-growing trend of colleges/universities students' engagement as agents of change on their campuses and in their local communities through strategies such as service-learning.

Defining service-learning is important because its meaning is often misunderstood. 'Service-learning' is a method... under which students or participants learn and develop through active participation in thoughtfully organized service... [2]. Research suggests that benefits accrued from service-learning include: enhanced integration of participants into on- and off-campus communities [3], enhance academic development (including persistence in college or retention [4]. This pedagogy is not new. According to Stanton, Giles, and Cruz [5], service-learning developed roots a century prior to modern definitions, which stem from the 1960s. Service-learning differs from other applied learning strategies. For example, internships are motivated by a students desire to gain 'real-world' experience in a work-based setting prior to graduation. Although interns engage in meaningful work that may benefit the larger society, their intent is not to provide direct service to ameliorate unmet community needs. Likewise, service-learning is not volunteer or charity work because service-learning provides students with a scholastic output to reflect upon professional and

intercultural/personal concerns brought forth at site placements. Finally, the hyphen in "service-learning" is significant since it places equal weight on student community work/interaction and the educational process. In short, service-learning is direct service in the community with academically focused, experiential learning as an intentional, formalized component of the experience.

Few research studies have focused on the relationship between service-learning and college/university student success. Thus, the purpose of this exploratory study was to determine the potential benefits of engaging students in service-learning who are at risk of attrition due to poor academic performance. Students with poor academic performance are defined as students with a GPA of 2.0 to 2.499 on a scale of 4.0. These students are those in most need of support mechanisms to increase their academic and community engagement and their overall success at their college/university. As Tinto [6] points out, "institutions also influence the quality of student effort via their capacity to involve students with other members of the institution" (p. 45).

Service-learning provides an opportunity for students to extend personal interactions and improve student connections to their university and community while promoting academic success. This social maturation complements and supports student academic development [7]. Therefore, program coordinators implemented the service-learning course in order to foster behavioral and social development changes that would benefit overall student success (including retention and personal development).

Researchers hypothesized that service-learning course participants would show increased student success rates as measured by student retention within their program of study and at the university, improved pre/post GPA and graduation rates, and skills development.

LITERATURE REVIEW

Current service-learning research, though limited by the scope and number of participants, shows psychological, cognitive, and academic benefits [4, 8 & 9]. However, "there is very little research that examines the mechanisms by which service-learning has the impact that it does" [7] (p. 11). Therefore, while data show service-learning benefits both social and academic growth, there remain minimal connections directly linking service to learning. Therefore, researchers argue that student attitudinal and behavioral changes, which are correlated

with service-learning, directly impact student integration, personal development and skills development which foster academic success.

At the heart of the issue is student involvement, which Astin [10] states “refers to the amount of physical and psychological energy that the student devotes to the academic experience” (p. 297). Further, Astin [10] asserts that active participation in programs such as campus residency, honors and academic programs, student-faculty interaction, athletics, and student government promotes student social and scholastic development.

As cited by Moore’s [11] analysis of Schlossberg, Lynch, and Chickering’s (1989) *Mattering/Marginality Theory*, “students must believe that they matter and that others (peers, faculty, staff, and family) care about them” (p. 12). The question is: how do administrators develop the students’ sense of self worth and belonging, which will in turn influence student persistence at a given institution?

Precollege background is the variable in most academic contention when discussing the significance of student persistence. Hernandez & Lopez [12] and Mallette & Cabrera [13] contend that precollege academics do not necessarily lead to college success. Tinto [6] also argues that undergraduate students enter college with a clean slate; what happens there is what matters. He emphasizes the importance of students developing social networks with peers and faculty, which lead to increased likelihood of student persistence; social networks do not guarantee success, but the lack of them increases the likelihood of departure. Therefore, the more students integrate into communities, the higher their levels of retention, which in turn reduces isolation and improves persistence to graduation or graduation rates.

Outside of precollege factors, what effects do faculty and peer groups have upon student social and academic maturation? Quality of exposure related to interactions with students and faculty is quintessential. As Astin [14] states, “satisfaction is enhanced by frequent interaction both with faculty and with fellow students” (p 311). Further, in their research into the benefits of service-learning, Gallini and Moely (2003) found that students who participated in a service-learning program self reported their intention to remain at their university at higher rates than non service-learning students did. Though this is beneficial for institutions of higher education, there remains the question of how service-learning benefits student participants. The answer is that service-learning improves community, academic, and interpersonal engagement [15]. Therefore, student involvement is linked to satisfaction, which positively contributes to students’ retention rates and persistence. In short, students who participate in service-learning are more satisfied with their institutions and more likely to remain in school.

One of the underlying objectives in education is to promote student engagement [16]. Hedin [17] states “community service is particularly effective in helping motivate the learner” (p. 203) by involving “tasks that challenge and strengthen the students’ thinking—cognitively and ethically” (p. 205). Therefore, service-learning can challenge learners, which leads to an individual’s academic growth, and in turn to behavioral changes.

These developments positively impact a student’s potential for college success.

Research shows that service-learning is beneficial to a number of academic indicators including student GPA, life skills development, and civic engagement [4 & 18]. However, researchers have conducted few studies on the effects of service-learning on retention rates [15]. Of the studies that positively correlate service-learning with improved retention rates, most rely upon student self-assessment.

METHODOLOGY

To reflect a growing body of evidence on campus that students at academic risk are retained at much lower rates than students with stronger academic records, program coordinators invited undergraduate sophomore and junior Information Systems (IS) students with a cumulative GPA lower than 2.50 to participate in a service-learning course. Eight students participated in the fall, 2007 offering of the class; 13 students were in the spring, 2008 cohort. Students who elected not to participate in the course were randomly selected as members of the comparison group at a ratio of 2:1 comparison students to participants.

The service-learning course had two main components: A class that met weekly and a service-learning placement. Both the class and placement components had distinct characteristics. It was the intention of program coordinators that the focus of the classroom assignments would provide students with personal, professional and academic skills development (e.g., resume preparation, mock interviewing, public speaking, interpersonal skills, writing) to help them in their field of study as well as professional guidelines, which would help them in their service-learning placements. Consequently, participants had the opportunity to implement classroom strategies to real-world applications.

The instructor separated the coursework into seven different graded components. The class was the graded element for the course—not the service-learning placement. Further, since the class was designated as pass/fail, the course grade did not factor into the student’s GPA. Therefore, the course was not a self-perpetuating factor in program results.

For the service-learning component, students worked within a school or a non-profit agency, in an information technology capacity, in order to gain skills and fill a need within the community. Each student was assigned to complete a minimum of 30 hours of service for the semester. Specific service activities included working to develop webpages and databases, and adult and youth technology-based, education programs. The course instructor had weekly contact with students to monitor their progress. Students also kept weekly blogs where they posted questions and concerns stemming from both their service-learning placement and classroom content.

The scope of coursework provided students with an opportunity to reflect upon their personal and professional development. Assignments contributed to students’ growth through participation in discussions, presentations, resume and cover letter preparation, and assistance in interviewing skills. The practicality of these assignments promoted student engagement. To accent this point, one student stated in her final paper,

“Without the in-class guests, real-life examples, weekly readings, and discussions during the semester I cannot say I would feel as accomplished as I do.”

As Vogelgesang & Astin [19] point out, one of the greatest limitations to service-learning studies such as this one is factoring in the quality of student service and classroom experience. Student attitudinal and behavioral changes can be affected by any number of external variables which can never be either accounted for, or eliminated in entirety. On the other hand, though it is impossible to gauge the influence of such things as student supervision, site related obstacles, and individual motivation, these uncertainties are precisely what lead to student academic and professional development.

Additionally, this study is limited by duration; it remains too early to assess participant graduation rates because coordinators targeted sophomores and juniors for the course. These results will develop as researchers track student academics longitudinally. However, as of the writing of this report, 100% of program participants remain IS majors.

Finally, the cohort size was relatively small (n=21). A limited sampling presents one of two possibilities: Either the results are not statistically viable, or student outcomes are very significant when contrasted with larger samplings.

QUALITATIVE ANALYSIS

Researchers often narrowly define retention as simply the absence of “departure from higher education” [6] (p. 13). However, for this course, coordinators emphasized attitudinal and behavioral changes which lead to direct impact upon overall student success. The concept of holistic student success expands the definition of success beyond retention to include positive attitudinal and behavioral changes.

The authors argue that student success is contingent upon integration into or within communities, which leads to increased retention rates and persistence to graduation. In other words, student academic success follows from an individual’s community and institutional ties. Therefore, the assessed qualitative development of student engagement precedes quantitative outcomes.

Assessment of the class had several qualitative components, which included feedback in the form of site supervisor comments as well as students’ comments and suggestions from blog entries, reflection essays, and final papers.

At the beginning of the semester, the instructor presented students with a questionnaire based upon the National Survey of Student Engagement (NSSE). Students also completed the same survey at the conclusion of the course. Researchers compiled responses that showed improvement from pre to post assessment not only when analyzing the cumulative results (i.e. a combination of both fall and spring cohorts), but also showed improvement between fall pre to post and spring pre to post figures.

Students completed assessments both at the beginning and at the conclusion of the semester. *Figure 1*, which lists raw data from the course, provides a sampling of 12 questions and their

responses. All selected questions were chosen because participant responses showed improvement from pre to post assessment not only when analyzing the cumulative results (i.e. a combination of both fall and spring cohorts), but also showed improvement between fall pre to post and spring pre to post data.

Figure 1

<i>Presently, how often are/were you involved in the following activities?</i>		
<i>1= Not at all involved 4= Very involved</i>		
One-time community service activity	Pre: 1.70	Post: 2.74 Improvement: 38%
Ongoing community service activity	Pre: 2.25	Post: 3.21 Improvement: 30%
<i>During interactions with other students outside of class, how often have you done each of the following during the current school year?</i>		
<i>1= Never 2= A few times a semester</i>		
<i>3= A few times a month 4= Once or more a week</i>		
Held discussions with students whose personal values were very different from your own	Pre: 3.10	Post: 3.47 Improvement: 11%
Studied in Groups	Pre: 1.65	Post: 2.05 Improvement: 20%
<i>About how often have you done each of the following during the current school year?</i>		
<i>1= Never 2= A few times a semester</i>		
<i>3= A few times a month 4= Once or more a week</i>		
Communicate with your instructor using e-mail	Pre: 2.15	Post: 2.53 Improvement: 15%
<i>Now that you have been in college for a while, how confident do you feel in the following areas?</i>		
<i>1= Not at all confident 2= Somewhat confident</i>		
<i>3= Confident 4= Very confident</i>		
Leading in a new situation	Pre: 1.95	Post: 2.11 Improvement: 8%
Leading in a cross cultural situation	Pre: 1.70	Post: 2.06 Improvement: 17%
Writing ability	Pre: 2.70	Post: 3.11 Improvement: 13%
<i>Please indicate your agreement or disagreement with the following items.</i>		
<i>1= Strongly Agree 2= Disagree</i>		
<i>3= Neutral 4= Agree</i>		
I give time to make a difference for someone else	Pre: 2.40	Post: 3.11 Improvement: 23%

Upon completion of the course, assessment showed a number of positive cognitive developments. Specifically, students showed a 17 and 8 percent cumulative improvement when self-assessing their ability to lead in both cross-cultural and new situations (respectively). Students also indicated an increased likelihood to study in groups. Their overall increase in self confidence and improved social capacity directly affected the successful outcome of the program.

Additional anecdotal evidence as to the course’s success comes from site supervisor comments (e.g. one service-learner, “displayed knowledge suitable for a career in computer technology” while another “was great. He had a positive

attitude and helped in every way that was asked...The partnership was great.”) and student assignments (student, feedback included, “This class should be a requirement for IS majors and anybody else that wants to join;” “The experience has left me with a positive view of service-oriented learning;” and, “I never believed in a million years that volunteering my time would be so rewarding”).

Figure 3

All Students	Fall 2007 Cohort	Spring 2008 Cohort	Combined
Pre Service-learning GPA	2.3	2.3	2.3
Fall 2007 GPA	2.59	NA	NA
Spring 2008 GPA	2.6	2.47	2.53
Spring 2008 GPA over Pre Service-Learning GPA	0.30	0.17	0.23
Spring 2008 % Change Following Service-Learning	13%	7%	10%
Difference, GPA: Pre Class Compared with all Post GPA	0.29	0.17	0.11
Difference, Service-Learning Semester and Cumulative GPA	0.12	0.05	0.06
Difference, Class & Cumulative (%)	5%	2%	4%
Cumulative: Service-Learning & Post Class GPA	2.61	2.47	2.54
Cumulative Difference, Pre Service-Learning	0.29	0.17	0.23
Cumulative Difference between Pre Service-Learning (%)	13%	7%	10%
Cumulative at UMBC	2.47	2.40	2.41

Figure 3

Transfers	Fall 2007 Cohort	Spring 2008 Cohort	Combined
Pre Service-learning GPA	2.31	2.29	2.3
Fall 2007 GPA	2.6	NA	NA
Spring 2008 GPA	2.52	2.62	2.57
Spring 2008 GPA over Pre Service-Learning GPA	0.21	0.33	0.27
Spring 2008 Percent Change Following Service-Learning	9%	14%	12%
Difference, GPA: Pre Class compared with all Post GPA	0.25	0.33	0.29
Difference Service-Learning Semester & Cumulative GPA	0.19	0.26	0.23
Difference, Class & Cumulative (%)	8%	11%	9%
Cumulative: Service-Learning, Pre/Post GPA	2.59	2.62	2.61
Cumulative Difference, Pre Service-Learning	0.25	0.33	0.29
Cumulative Difference, Pre Service-Learning (%)	11%	14%	12%
UMBC Cumulative	2.41	2.36	2.38

QUANTITATIVE ANALYSIS

Preliminary assessment suggests some encouraging quantitative results. Overall GPAs rose for the first cohort from their pre service-learning numbers both in the fall (when students took the class) and in the following spring semester. Spring participant GPAs also improved. Spring cohort GPAs rose and

Fall cohort GPAs also continued to improve. Pre service-learning GPAs showed a 10% cumulative increase during and following service. The cumulative difference between pre service-learning GPAs and students' cumulative GPA is 4% (for a categorized breakdown of fall and spring cohort, non-transfer student GPAs, please see *Figure 2*).

The benefits of the course for transfer students also were evident. *Figure 3* provides further data comparing transfer student GPAs (14 total spring and fall transfer students). Notably, there was a 9% improvement between the service-learning class GPA and the students' cumulative GPA at the university.

DISCUSSION

Just as Markus, Howard, & King [20] found justification to expand their service-learning program from the successful results of their initial pilot program, positive preliminary results of this study have led administrators to offer the service-learning course within two additional programs (Computer Science/Electrical Engineering and Biology). This new offering shifts the focus from a population based on GPAs to one based

upon transfer student status. Transfer students comprise half of the population of the campus. Institutional data suggest that transfer status is a major risk factor for attrition. The adaptation of the Information Systems Service-Learning course to address the needs of transfer students in Computer Science and Biology, therefore, represents a significant demonstration of support for a service-learning framework for fostering student success. Researchers believe that further implementation and analysis will lead to sustained academic development for students in at-risk populations.

CONCLUSION

There are a number of indicators that show benefits for student success through service-learning. Specifically, students showed both attitudinal and behavioral development as gauged by pre/post assessments. This social maturation promoted student engagement, which in turn affected students' GPAs. Therefore, it is the researchers' contention that service-learning creates an environment in which, all other factors being equal, students are more likely to be academically successful and show increased retention rates over non service-learning students.

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