Service Learning Enhances Retention Rates of WSU Undergraduates, Especially Students of Color

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ABSTRACT

Service learning can help students connect with peers and the community at large and influence academic success and retention. BIOL 102 consists of 150 students annually, mostly first-year students, thus providing opportunity for a controlled study of the effects of service learning on academic success and retention. The Center for Civic Engagement (CCE) partnered with Biology 102 at WSU and two-thirds of the lab sections incorporated service learning experiences - structured community-based projects organized by the CCE, including orientation and reflection - while the other half proceeded with the traditional curricular. Statistical analysis comparing overall grade earned in BIOL 102, overall GPA, and retention to the subsequent academic year was the randomly assigned control and CCE groups deemed a single-service-learning experience improved both grades and retention. Comparisons were performed separately for each of four cohorts: Fall 2017 (N=287), Spring 2018 (N=218), Fall 2018 (N=703), Spring 2019 (N=444). Service-learning students had significantly higher grades for BIOL 102 among three of the four cohorts compared to control students (p < 0.05). The service-learning group also had significantly higher overall GPA during the semester they took the class among three of the four cohorts (p<0.05). Additionally, higher retention rates of students who completed service-learning projects was seen for the Fall 2017 (83% vs. 73%, respectively) and Spring 2019 (95% vs. 86%, respectively) cohorts. These differences were especially pronounced among vulnerable sub-populations of First-Gen and students of color. Following these students longitudinally to graduation would provide insight into longer-term benefits of service learning.

BACKGROUND

Success in college requires substantial commitments of emotion, time, and money. That higher education can do better in encouraging both emotional security and intellectual effort is evidenced by disappointing six-year graduation rates for first-time, full-time students both nationally (60%) and at WSU (67%). At least in part, this stems from failure to retain first-year students, resulting in a lower completion transition to the sophomore year (Stewart et al. 2015). A WSU approximate eight out of every 10 first-year students to begin college drop out. We clearly need to implement additional, evidence-based strategies to enhance rates of both retention and graduation.

Engagement in diverse aspects of college life can increase that first-year students are retained (Kuh et al. 2008), and service learning (SL) is one form of engagement (Bridge et al. 2010). SL aims to connect students to their academic interests, and provide opportunities to connect with peers and the community at large (in our study, both WSU specifically and the Palouse more generally). Together with structured reflection, SL also aims to provide opportunities for students to further develop organizational and interpersonal skills (Bridge et al. 2010). National data show that connectedness can enhance retention rates, as well as increase resilience and social agency (Crosnoe 2012). Here we provide the first evidence that a single SL experience can enhance academic performance and first-year retention rates for WSU students, especially those belonging to the vulnerable sub-populations of students of color.

METHODS

Design. We conducted a semi-randomized blind controlled study of the impact of SL on retention rates of a diverse population of first-year students, enrolled in BIOLOGY 102, a large, UCORE-BSCI course offered both Fall and Spring semesters. Students were tracked in four cohorts based on lab section, one half of which were randomly assigned to the experimental group and one half to the control group. Students who completed the SL component (i.e., “non-compliers”) were excluded in these analyses. All analyses are reported separately for each of the four cohorts.

Analyses

Data were extracted from course records, and databases maintained by the CCE and Institutional Research. Analyses were conducted first for all first-year students, then for a subsample of students per cohort and their repeated by including only first-year students. In each case (full sample, first-year students only), we also reproducible analyses by restricting the sample to include only those experimental groups who students had completed the SL component (i.e., “compliers”). Students assigned to the experimental group who did not complete the SL component (i.e., “non-compliers”) were excluded in these analyses. All analyses are reported separately for each of the four cohorts. We used tests of independent sample means to compare within-service-learning academic performance outcomes. Logistic regression models were used to examine retention outcomes.

RESULTS

Academic Performance

Students who completed SL earned significantly higher end-of-semester class grades in three of the four cohorts (Table 1; p<0.05). In addition, students earned significantly higher overall GPA during the semester they took the class among three of the four cohorts (p<0.05). The service-learning group also had significantly higher overall GPA during the semester they took the class among three of the four cohorts (p<0.05). Additionally, higher retention rates of students who completed service-learning projects was seen for the Fall 2017 (83% vs. 73%, respectively) and Spring 2019 (95% vs. 86%, respectively) cohorts. These differences were especially pronounced among vulnerable sub-populations of First-Gen and students of color. Following these students longitudinally to graduation would provide insight into longer-term benefits of service learning.

DISCUSSION

The results support the value of providing first-year students with even just one SL experience. Relates to students who completed a SL project achieved higher academic performance, with all of semester class grade 9.7% higher and a 9.9% boost in end-of-semester GPA. In addition, fall-to-fall retention was 9.3% higher for SL than for control students. Of course, retention is necessary for an increased likelihood of timely graduation, academic deficiencies notwithstanding (e.g., a 4.0 cumulative GPA before 2.0). It would be most instructive to follow our students longitudinally into the future for tracking long-term benefits of SL.

Some sub-populations of first-year students may be more vulnerable to attrition, especially if their families/community have little or no tradition of college attendance (e.g., Petty 2014). We partitioned our total data set in order to compare control and experimental students who identified as students of color, largely Latinx. We note that many of these students are also first generation. For the Fall 2017 cohort, students of color in the SL group showed first-to-second year retention rates that were 13% above those of poor students of color in the control group. We find this to be a remarkably strong effect for such a small and simple intervention, and it provides strong support for the inclusion of SL opportunities into existing First Year programs, or as components of early and near-university classes such as ENGLISH 101 and HIST 101. Doing so will require allocation of resources to support the infrastructure required for offering SL on a large scale. Nevertheless, our data indicate that such investment can benefit the academic performance and retention of all first-year students, including students of color, who are the most vulnerable to attrition.

ACKNOWLEDGMENTS

Approval for our study was granted by WSU’s Institutional Review Board, and funding was provided via the Provost’s Student Success Grant Program and the CCE and Institutional Research for sharing data, and our BIO 102 Teaching Assistants for keeping track of student participation. And of course, we thank the WSU 102 students.

LITERATURE CITED


With-in Academic Year Retention

Retention rates from Fall to spring semester were examined for Fall 2017 and Fall 2018 cohorts. There were no statistically significant differences in retention rates between the experimental and control groups, regardless of sample used (full sample, first-year students only, and compliers only).

Between-Academic Year Retention

First-Year First Semester To Second-Year First Semester

For Cohort 4 (Spring 2019), significantly higher retention rates to Fall 2019 were found when comparing all first-year students and first-year SL compliers to the control group. Among first-year students, 93% of SL students were enrolled at the beginning of the Fall 2019 semester, compared to 81% of students assigned to the control group.

First-Year Second Semester To Second-Year Second Semester

For Cohort 4 (Spring 2019), significantly higher retention rates to Fall 2019 were found when comparing all first-year students and first-year SL compliers to the control group. Among first-year students, 93% of SL students were enrolled at the beginning of the Fall 2019 semester, compared to 81% of students assigned to the control group (p < 0.05). An identical difference in retention rates was found for first-year SL compliers and students in the control group (90% vs. 84% respectively; p < 0.05). There were no significant differences among any of the groups in Cohort 3 (Spring 2018) when comparing retention rates to Fall 2018.

TABLE 1. End-of-semester grades (out of a maximum of 100%) for control and SL students in each of the four cohorts.

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Fall 2017</th>
<th>Spring 2018</th>
<th>Fall 2018</th>
<th>Spring 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL</td>
<td>78.41</td>
<td>75.46</td>
<td>83.44</td>
<td>79.48</td>
</tr>
<tr>
<td>Control</td>
<td>80.61</td>
<td>74.61</td>
<td>84.11</td>
<td>79.61</td>
</tr>
</tbody>
</table>

TABLE 2. End-of-semester GPAs (out of a maximum of 4) for control and SL students in each of the four cohorts.

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Fall 2017</th>
<th>Spring 2018</th>
<th>Fall 2018</th>
<th>Spring 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL</td>
<td>2.87</td>
<td>2.70</td>
<td>2.70</td>
<td>2.66</td>
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<tr>
<td>Control</td>
<td>2.60</td>
<td>2.60</td>
<td>2.60</td>
<td>2.60</td>
</tr>
</tbody>
</table>

FIGURE 1. Retention rates for control students and SL compliers from Fall 2017 to Fall 2018. As reported in the text, retention was significantly higher in SL compliers than students in the control group for students of color (p < 0.05).