

# Preliminary Technical Report for Service Learning Assessment of Colleges 1, 2, 3, & 4, end of Year 3

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## *Study Goals and Rationale*

During the 2015-16 academic year, Colleges 1-4 graciously agreed to an assessment of their service learning courses. This assessment was funded by the US Department of Education (the First in the World grant mechanism) and happened alongside similar assessments conducted at four other universities: University of Illinois at Chicago, University of Minnesota, City University of New York, University of Memphis, and University of Georgia.

In January 2017, you received a technical report describing the results for the survey conducted on our campus. This report is a follow-up to that one and describes the results from propensity score matching analysis and the linking of university-collected data with the survey data we collected. Propensity score matching is a technique used, primarily in economics, to match someone in a “treatment” group with someone in a “comparison” group, in order to account for differences in groups when there are differences in the groups. There are often differences in groups when people are not randomly assigned into the two different groups. We also give an update on our institutional goal of garnering more support for community engagement on our campus.

## *UCSC Methodology for Year 3*

At the end of October/beginning of November of 2015, all first year students at College 1 were invited to complete the survey. One hundred eighteen students filled out the survey and produced usable data (meaning they filled out at least 50% of the questions). This constituted the comparison group, as these students had not yet taken any services learning classes at UCSC. The intervention group included 132 students from College 1 (N=24), College 2 (N=31), College 3 (N=34), and College 4 (N=43). These colleges were chosen due to their robust service learning programming, and because they have a critical mass of students of Color and/or first generation college students. Moreover, the service learning offerings are quite diverse at these four colleges, which enables comparisons across types of service learning modalities.

This year, we re-analyzed the survey data using a technique called “propensity score matching,” which enables us to control for possible differences between groups<sup>1</sup>. Moreover, with the help of institutional research, we linked survey data to student GPA and persistence data. Also, for those who had filled out the UCUES survey (a UC-wide survey given every other year that assesses school climate, among other constructs), we examined how their results compared to other students who had not taken a service learning class. These analyses were performed by Anna Sher, Shirley Troung, and Lisa O’Conner in Institutional Research.

## *Preliminary Results for Students*

*Propensity Score Matching (PSM)*. Overall, the results reported to you in January did not change substantially when we conducted the analysis using PSM, so the conclusions remain the same. In conducting the PSM analysis, we learned that there were differences between those who did and did not take service learning classes based on the following categories: if they were

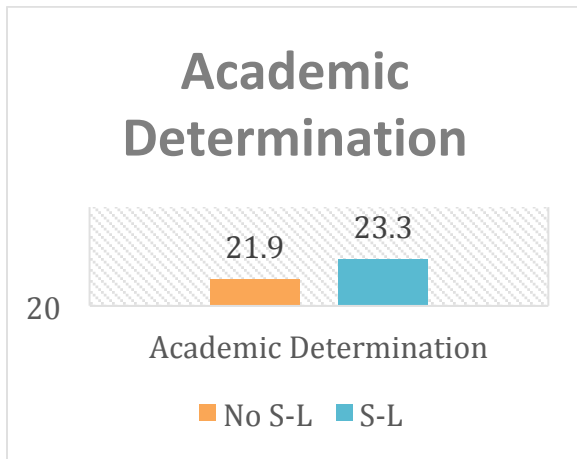
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<sup>1</sup> Please note that this method is somewhat controversial among statisticians, but is required by the grant funders since we did not run an experiment, which would have required randomly selecting students to participate in your community engagement offerings.

Asian/Asian American or not, their high school GPA, and their gender. Our analysis therefore took these differences into consideration because we used a technique called Analysis of Covariance (ANCOVA) and we co-varied if they were Asian/Asian American or not, their high school GPA, and their gender<sup>2</sup>. We also included weights for their PSM match. Once we did all of this, we learned that students who participated in service learning showed higher levels of academic determination ( $F_{1,187} = 4.30, p = .039, \text{partial } \eta^2 = .02$ ), and diverse citizenship ( $F_{1,184} = 18.17, p < .001, \text{partial } \eta^2 = .09$ ). Therefore, there were still differences in two of the five subscales that assess thriving, with students who have engaged in service learning showing higher levels of thriving. Students who are thriving are not only passing their classes, but they are also taking advantage of what the campus has to offer and engaging in their learning and social development (Schreiner, 2013). Each of these results is taken in turn.

Academic determination is similar to grit, or passion and perseverance toward a goal, but academic determination predicts outcomes better than does grit (Weisskirch, 2016)<sup>3</sup>. Both academic determination and grit are associated with academic persistence in the psychological literature.

Figure 1. Academic Determination



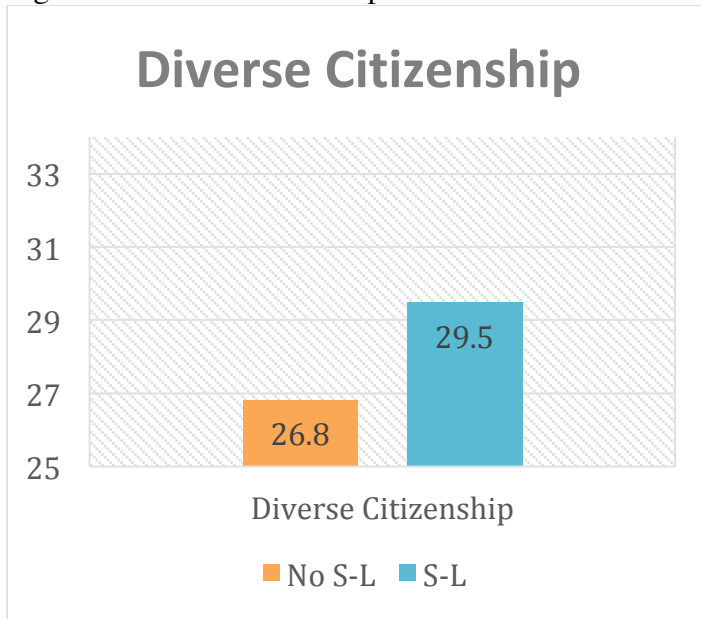
Diverse citizenship is similar to appreciation of and openness to diverse perspectives, and is at times discussed in the literature in this way (Schreiner, 2010)<sup>4</sup>. This construct is related to a student’s ability to take charge of their learning, or to be an active learner (Schreiner, 2010).

<sup>2</sup> Please note that co-varying as a statistical technique is controversial for categories where there are differences between groups. Yet, the granting organization required this analysis. We can take comfort in the fact that the results are the same when we use PSM and co-vary out differences, compared to when we do not use PSM and do no co-varying (see the first technical report you received for these results).

<sup>3</sup> Academic determination questions included: I am confident I will reach my educational goals; Even if assignments are not interesting to me, I find a way to keep working at them until they are done well; I know how to apply my strengths to achieve academic success; I am good at juggling all the demands of college life; and Other people would say I’m a hard worker.

<sup>4</sup> Diverse citizenship questions included: I spend time making a difference in other people’s lives; I know I can make a difference in my community; It’s important for me to make a contribution to my community; I value interacting with people whose viewpoints are different from my own; My knowledge or opinions have been influenced or changed by becoming more aware of the perspectives of individuals from different backgrounds; and It is important to become aware of the perspectives of individuals from different backgrounds.

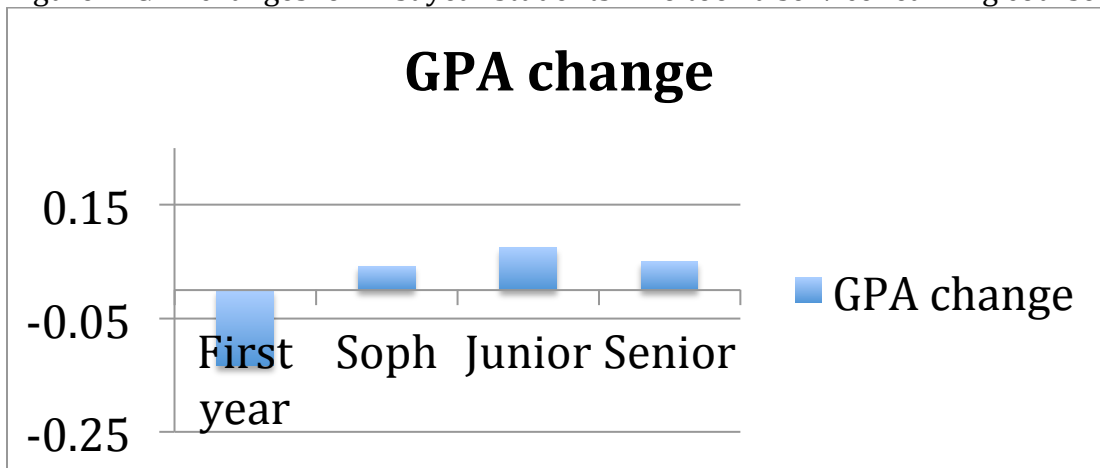
Figure 2. Diverse Citizenship



*Linking with Institutional Research: Examining “Conventional” Academic Success Outcomes (i.e., GPA, credits earned, & time to degree).*

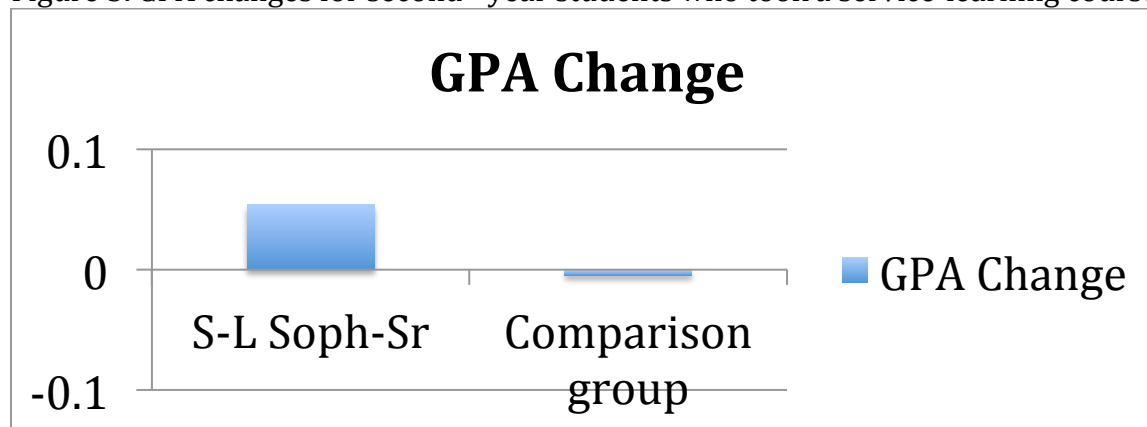
With respect to GPA, there were no differences in GPA pre- and post-class ( $F_{(3,106)}=0.695$ ,  $p=.56$ ). Yet, when looking by year, there were differences. Students who took a service learning course in their first year subsequently had a lower GPA than did all other students ( $F_{(3,106)}=5.219$ ,  $p<.002$ ).

Figure 4. GPA changes for first year students who took a service-learning course



On the other hand, students who took a service learning class in their second year or later had higher subsequent GPAs than students in the comparison group (t test p value = .011).

Figure 5. GPA changes for second+ year students who took a service-learning course



We therefore recommend students consider waiting until their second years to take a service learning course.

When examining changes in credits earned for those who did and did not take a service learning course, there were no significant statistical differences<sup>5</sup> between groups (t-test  $p < .60$ ).

Finally, when considering time to degree, it is too soon to tell. In a few years, we can more adequately run this analysis. Yet, of all students who enrolled in a service learning class, 93% have graduated or been retained. Moreover, of the 113 service learning students who started UCSC as first year students, 48% have graduated (as of Spring 2017). All who graduated ( $n=54$ ) did so within 6 years. Of these graduates, 72% graduated within 4 years. Of the 20 service learning students who started as transfers, 70% graduated (as of Spring 2017). All who graduated ( $n=14$ ) did so within 4 years. Of these graduates, 79% graduated within 2 years. These results are quite promising when considering our campus' overall statistics regarding graduation and persistence rates.

*Examining UCUES Data.* Of the students who had taken a service learning course, 60 of them had also completed the UCUES survey. We determined that, rather than match these with other students who had completed the survey we gave, it made more sense to match these 60 students with a random sample of 60 other students (social sciences and humanities majors) who had not taken a service learning course. These students were more comparable to our students, especially given differences in social climate results based on major and year in school.

The factors examined were:

- Satisfaction with educational experience
- Engagement with studies
- Development with scholarship
- Current self-assessed skills
- Gains in self-assessed skills
- Disengagement

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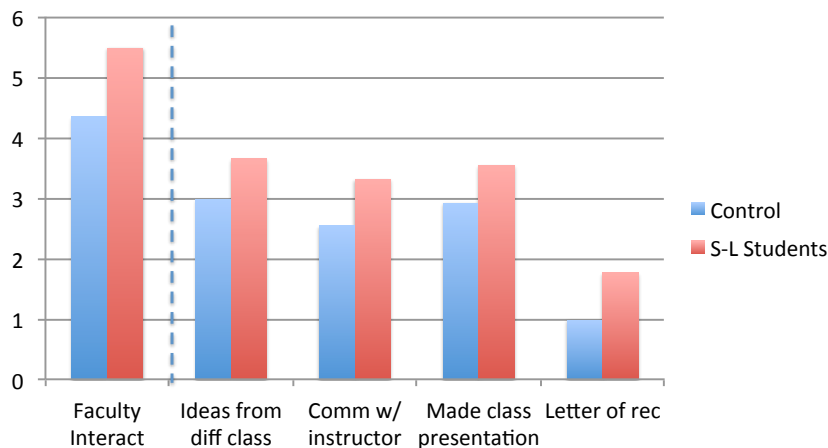
<sup>5</sup> When using inferential statistics in the social sciences, the convention is that if the probability that there is a difference is at .05 or below (so, we are 95% sure or more that there is a difference), then we say that the difference is significant. Significance is influenced by the size of the sample, or in this case, the number of people who filled out the survey. "Significance" is not always synonymous with "important" or "meaningful."

Satisfaction with educational experience included sense of belonging. There were no significant differences between the two groups, which is consistent with our survey results.

There were differences when examining students' engagement with their studies. In this case, the difference was in interaction with faculty in that upper division service learning students were more likely to have interacted with faculty compared to their upper division peers ( $p < .05$ ). In terms of specific items, service learning students more frequently: (a) brought up ideas or concepts from different courses during class discussions ( $p < .05$ ), (b) communicated with the instructor outside of class about issues & concepts ( $p < .05$ ), (c) made a class presentation ( $p < .05$ ), and (d) knew more professors well enough to ask for a letter of recommendation ( $p < .01$ ).

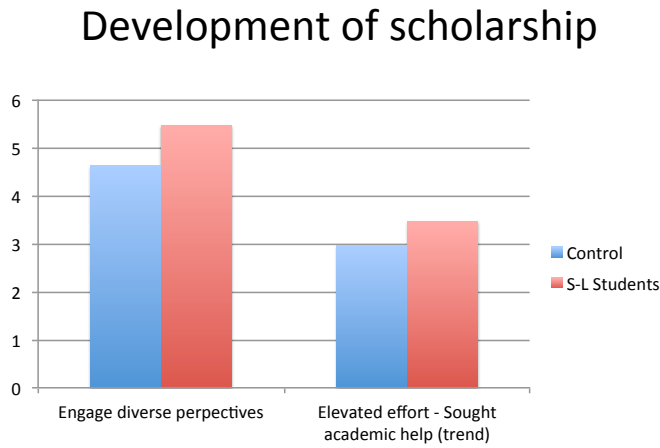
Figure 6. Engagement with studies

## Engagement with studies



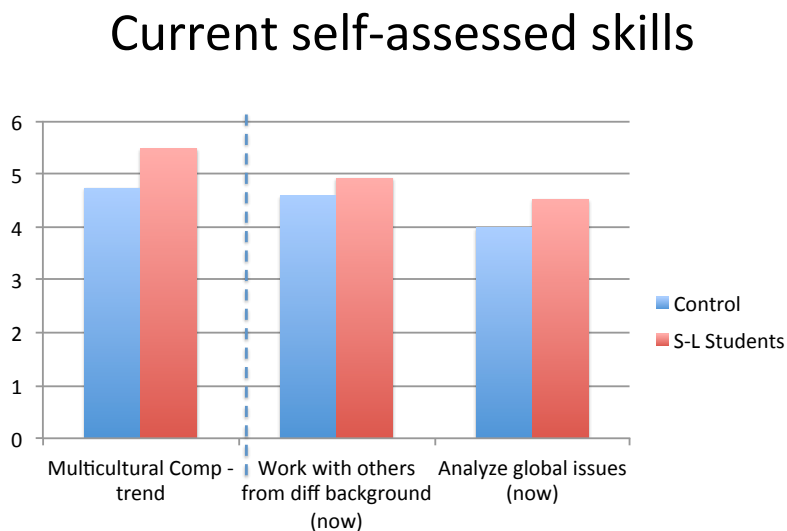
Development of scholarship had 3 subfactors: engaging diverse perspectives, elevated effort, and collaborative work. Upper division service learning students were more likely to report engaging with diverse perspectives more frequently compared to their upper division peers ( $p < .05$ ). With respect to elevated effort, there was not a difference in the scale, yet there was a trend such that service learning students may be more likely to seek out academic help from instructors or tutors ( $p = .07$ ).

Figure 7. Development of Scholarship



The current self-assessed skills factor had two subscales: self-assessed core competencies, and multicultural competencies. There were no differences in self-assessed core competencies, yet there was a trend such that service learning students were slightly more likely to rate their multicultural competencies higher ( $p = .07$ ). Considering specific items, service learning students were more likely to rate their current ability to work with people from other cultures or backgrounds higher than the control group ( $p \leq .05$ ). Service learning students were also more likely to rate their current ability to analyze or discuss global issues higher than the control group ( $p < .01$ ).

Figure 8. Current self-assessed skills



Current self-assessed skills are different from *gains* in self-assessed skills. The factor of gains in self-assessed skills had two subfactors: gains in core competencies and gains in

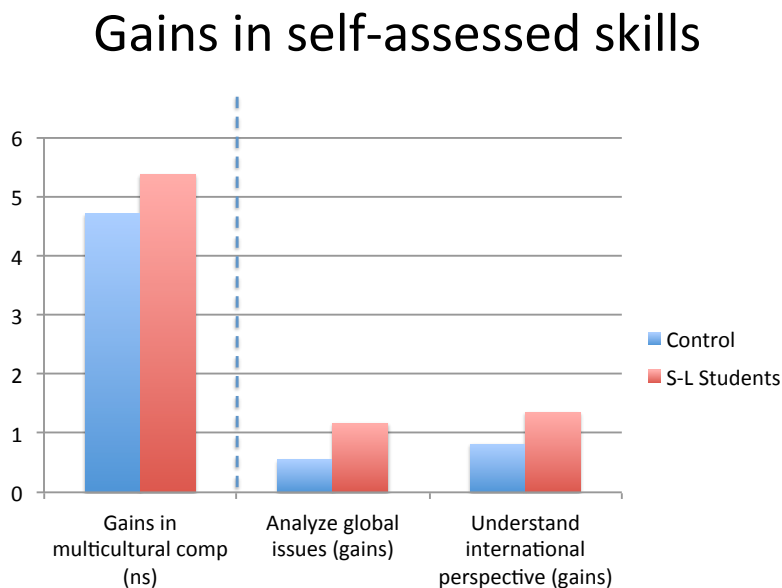
multicultural competencies. Figure 9 includes core competencies differences, whereas Figure 10 includes gains in multicultural differences. Considering core competencies, upper division service learning students were more likely to report higher gains in core competencies compared to their upper division peers ( $p < .05$ ). Specific items they reported gains in included: (a) analytical and critical thinking skills ( $p < .01$ ), (b) ability to design, conduct, and evaluate research ( $p < .01$ ), (c) ability to engage in research or work on creative projects specific to their field of study ( $p < .05$ ), and (d) ability to conduct library and online research skills ( $p \leq .05$ ).

Figure 9. Gains in self-assessed skills: Core competencies



The second subfactor was gains in multicultural competencies. Although this scale was not significant, service learning students were more likely to have gains in multicultural competencies, specifically in their ability to analyze or discuss global issues ( $p < .01$ ) and to understand international perspectives ( $p < .05$ ).

Figure 10. Gains in self-assessed skills: Multicultural competency



#### *Preliminary results for institutional change*

In the past year, we have formed a Community Engagement Collaborative (CEC) on our campus, housed in the Student Success Division. The collaborative includes faculty (ladder rank and lectures) from across the colleges and departments. We have written a vision statement and agreed to an institutional audit, conducted by Professor Andy Furco's graduate class at the University of Minnesota. With the audit, we hope to gain a better sense of our next steps in garnering more institutional support for community engagement on our campus. We have provided Andy with our goals and a list of possible people to interview.

#### *Next Steps*

There are several next steps. One is to run multivariate analyses (i.e., running an analysis with more than one scale at a time) to examine how the measured constructs relate to one another. For example, it may be that specific constructs mediate certain outcomes. For example, taking a service learning course is associated with higher levels of diverse citizenship, which might then be associated with higher levels of Borderlands, or the ability to straddle worlds for social justice reasons. So, although there is no direct association between service learning and Borderlands, for example, there may be an indirect effect.

A second next step is to collect one more round of data from each of the colleges. This will enable us to run the analyses with more power (that is, a greater sample size helps with determining outcomes more clearly) and to therefore be more sure about the conclusions.

A third is to continue to develop the Community Engagement Collaborative and to develop a strategy to increase collaboration on our campus, as well as institutional support for community engagement.



## References

- Schreiner, L.A. (2010). Thriving in the classroom. *About Campus*, 1-10. Downloaded from [http://wacenter.evergreen.edu/institute13/2013institute/nsilc2013docs/sessions2/iif\\_thriving\\_classrm2.pdf](http://wacenter.evergreen.edu/institute13/2013institute/nsilc2013docs/sessions2/iif_thriving_classrm2.pdf).
- Weisskirch, R.S. (2016). Grit, self-esteem, learning strategies and attitudes and estimated and achieved course grades among college students. *Current psychology: A journal for diverse perspectives on diverse psychological issues*. doi: 10.1007/s12144-016-9485-4