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2016

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# **The Impact of Academic Service Learning on Community College Students**

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## **Abstract**

Although research clearly indicates that academic service-learning provides multiple benefits to college students in baccalaureate institutions, there is less known about its impact on community college students; a population who may benefit the most from this pedagogy. Four faculty members from four different community colleges within the City University of New York incorporated service-learning into their classrooms while also maintaining control classes. Quantitative survey data on student civic engagement and college skills were collected and survey responses from those students that did, and did not, participate in service-learning were compared. The data demonstrated meaningful differences between the non-service-learners and service-learning students, particularly in the area of civic engagement. Service-learners were also more comfortable than controls in certain college skills, including public speaking, writing, group projects and interacting with their professor.

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## Introduction

Many institutions of higher education throughout the United States incorporate civic engagement (CE) into their mission statements as fundamental goals for their students (Leigh & Gill, 2007). Colleges and universities, including urban and rural as well as two- and four-year institutions, consistently recognize CE as a basic indicator of student success. Further, a significant number of American universities have adopted a particular pedagogy, *academic service-learning* (SL), as an important method for meeting both of these goals (Eyler & Giles, 1999; Vogelgesang & Astin, 2000; Kuh, 2008).

A recent series of meta-analyses that included hundreds of studies yielded results that clearly demonstrate numerous positive outcomes of SL on academic achievement, personal development and CE. For example, SL was found to impact positively on students' learning of course material (Warren, 2012), students' increased personal insight, cognitive and social development (Yorio and Ye, 2012), as well as attitudes toward self, attitudes toward school and learning, CE and academic achievement (Celio, 2011).

With an abundance of evidence pointing to multiple benefits of SL, this study attempts to assess whether this pedagogy will have a similar impact on a specific population of students, those attending City University of New York (CUNY) community colleges.

Clearly, such investigation is warranted. As noted above, the existing research has shown that SL pedagogy has positive effects on many indicators of student success. However, while the research on SL in American higher education clearly documents the positive effects of the pedagogy for student success, and while this research is extremely well established since it has been conducted over a span of many years, to date, this research has been primarily carried-out within the context of baccalaureate-granting institutions.

For example, a recent review of empirical research identified only 17 studies that addressed SL within the community college context over the last two decades. (Taggart & Crisp, 2011) While limited in number, the outcomes of these studies, nevertheless, support the value of SL for community college students. Most of the studies correlated SL activities with positive gains in CE. In some

studies, higher grades were found among community college service-learners than in non-service-learners (Berson & Younkin, 1998; Hollis, 2002), although though that was not a consistent result. For example, SL developmental students in Prentice's study (2009) did not have higher course grades but did exhibit higher retention rates, another indicator of academic success. More recent studies also demonstrate that SL increases retention rates for community college students in developmental courses (Rochford, 2014) as well as in other programs (Ellerton et al, 2014; 2015). Traver et al (2014) also demonstrated in community college classes that the type of SL project can impact student empathy and cultural competence. Additional evidence supporting the beneficial role of SL for community college students comes from results of several large national studies through the American Association of Community Colleges, which were recently reviewed by Prentice and Robinson (2014). Survey and focus group analysis indicates self-reported positive gains for community college students in terms of increased capacity for civic responsibility, critical thinking, academic development, career development and the ability to collaborate with others, as well as a positive relationship to retention and persistence. Their "takeaway about service-learning" is that "multiple simultaneous benefits accrued to students". Similar results were found with community college students at one CUNY campus, who self-reported an increased confidence in course content knowledge, general education knowledge, workplace skills and an interest in civic engagement (Ellerton et al., 2015).

The well-established benefits of SL for students at baccalaureate institutions, along with the positive results of SL documented by a more limited number of studies at the community college level, clearly call for further, well-controlled investigations of SL within the community college context. Further, the existing research of SL at baccalaureate institutions indicates that CUNY community colleges are exceptionally well positioned to assess the effectiveness of this SL pedagogy. For example, New York City has a rich and diverse pool of potential community partners, and SL pedagogy is currently employed at several CUNY community college campuses.

Further, and perhaps most significantly, the student bodies at CUNY community colleges reflect important characteristics that have been identified by studies at baccalaureate institutions as most likely to benefit from SL pedagogy. Specifically, students from historically underserved populations, non-traditional

students, students of color, students from lower economic backgrounds and students that entered college with lower academic scores have all been identified as benefiting from SL at higher rates than other groups of students (Kuh, 2008; Finley & McNair, 2013) and, importantly, student bodies at virtually all CUNY community colleges reflect these specific characteristics.

To be sure, CUNY community colleges present a significant opportunity to assess the impact of SL pedagogy for community college students and, as such, the following question comes into focus: Can the outcomes that show the positive impact of SL pedagogy for student success at baccalaureate-granting institutions be replicated at the community college level? Clearly, this is a cogent question and, as noted above, provides the focus of this study.

### **Key Terms and Constructs**

**Academic SL:** model of civic engagement that promotes student learning and development through active participation in organized service experiences, structured time for critical reflection so that students connect their service to academics, and the intentional development of civic responsibility for all participants. (National and Community Service Act, 1990). SL pedagogy is reciprocal so that students providing the service and the communities receiving the service both benefit. This reciprocity distinguishes SL from other models of civic engagement (Furco, 1996).

**C<sup>3</sup>IRG:** Community College Collaborative Incentive Research Grants (C<sup>3</sup>IRG) Program supports the collaborative research efforts of faculty at CUNY Community Colleges

**C<sup>3</sup>IRG co-PIs:** co-PIs from the four CUNY community colleges that participated in the study, functioned to lead the development, implementation and assessment of the study

**C<sup>3</sup>IRG faculty:** comprised of the twelve faculty members recruited to participate in the study (three from each campus), and who implemented a SL project into their respective courses

**C<sup>3</sup>IRG advisory board:** formed of individual advisory boards assembled at each of the four campuses that included academic deans, administrators, faculty, technology experts and students



## **Methods**

### **Overall Institutional Context**

Since this paper attempts to systematically investigate SL at CUNY community colleges, it is important to acknowledge the inconsistent state of SL as it currently manifests on our campuses. Although SL pedagogy is employed at most CUNY community college campuses, with faculty actively incorporating SL in their classrooms, there are many differences in the way this pedagogy is supported and implemented at each campus. For example, financial and administrative support for SL varies widely from campuses that have fully funded administrative offices and staff dedicated to SL, to campuses with virtually no official institutional support - financial, administrative or otherwise - and where SL involves little more than small, informal groups of faculty and staff. In addition, SL professional development varies from formal faculty SL cohorts to campuses with little more than voluntary lunchtime talks among faculty and staff. Further, SL varies among campuses in its implementation, with SL occurring both as curriculum-based projects as well as co-curricular and extra-curricular initiatives.

### **Developing the Study and Research Teams**

From this background, and supported by a C<sup>3</sup>IRG grant, four faculty co-principle investigators (C<sup>3</sup>IRG co-PIs), one from each participating institution, joined forces in the fall of 2012 to lead the investigation into the impact of SL on CUNY community college students. All were experienced in SL and established leaders at their campuses promoting SL pedagogy. This consortium represented the four boroughs of New York City that have community colleges: Queensborough CC in Queens, Hostos CC in The Bronx, Borough of Manhattan CC in Manhattan and Kingsborough CC in Brooklyn. Additionally, an advisory board comprised of academic deans, senior administrators, senior faculty, technology experts and students were assembled at each campus to help guide the project and assembled to form the cross-campus C<sup>3</sup>IRG advisory board. Research assistants recruited at each campus assisted with the implementation of the study.

The C<sup>3</sup>IRG co-PIs met often to develop the project utilizing face-to-face meetings and subsequent electronic meetings to accommodate differing schedules and locations. Electronic meetings included telephone conference calls as well as video-conferencing that brought together the C<sup>3</sup>IRG co-PIs and the C<sup>3</sup>IRG advisory boards. These productive collaborations enabled the C<sup>3</sup>IRG co-

PIs and advisory boards to address issues specific to each campus or cross-campus, and create a supportive environment for developing and implementing the project.

The C<sup>3</sup>IRG co-PIs collaborated to find common ground appropriate for all four campuses and finalized the format and protocols for the project. Three interdisciplinary faculty at each campus (totaling 12 faculty for the project) who were already teaching at least two sections of the same course were recruited to be the C<sup>3</sup>IRG faculty that participated in the project. Each faculty member agreed to participate in SL professional development provided by the C<sup>3</sup>IRG co-PIs.

The C<sup>3</sup>IRG faculty also agreed to develop and implement a SL project appropriate to their specific course into one section while not including SL in a second section of the same course to function as a control during the Spring 2013 semester. Additionally, each member of the C<sup>3</sup>IRG faculty collaborated with a community partner on their particular SL project.

All C<sup>3</sup>IRG co-PIs and faculty, as well as each research assistant, were already, or became, certified in the Responsible Conduct of Research (RCR) and in Human Subject Research (HSR) protocols. Pre- and Post-survey research instruments and protocol were developed by the C<sup>3</sup>IRG co-PIs and submitted to the CUNY IRB for review, receiving IRB approval with “exempt” status.

### **Support of SL Faculty**

**Professional development.** Professional development materials including instructional videos were created by the C<sup>3</sup>IRG co-PIs and made available to the C<sup>3</sup>IRG faculty and other project participants. Individual campuses had existing resources relevant to SL that were also made available to all project participants. Further, each campus held at least two meetings with their teams during the course of the grant for progress reports and mentoring purposes.

**Support for Implementing SL.** During the implementation of the SL projects, each of the C<sup>3</sup>IRG faculty received both logistical and pedagogical support from the C<sup>3</sup>IRG co-PIs and research assistants. The research assistant at each campus administered both the pre- and post- surveys, helped gather data and entered the accumulated data into SPSS for analysis. The C<sup>3</sup>IRG co-PIs served as mentors to the project’s participants throughout the term of the grant.



Additionally, funds were made available to participants through the grant allocations office at each campus for classroom materials related to the SL projects and other incidentals.

### **Data Sources and Procedures**

**Quantitative data collection.** Quantitative data were collected through surveys where students were asked to self-evaluate their civic involvement and attainment of academic skills and general education knowledge. Surveys were administered pre- and post-service to all classes, those that participated in SL (research group) and those that did not (control group). The actual days of administration varied by college, and the class instructor was not present at the time of administration. Students were not mandated to participate in the survey; participation was optional. Students were identified only by the last four digits of their social security number, and the questionnaires were stored in locked cabinets until the semester was over and final grades submitted. Inclusion criteria was all students in the classroom on the days the questionnaire was administered; only students under age 18 were excluded.

These surveys consisted of the identical 24 questions with graded responses on a 5 point Likert-scale. In addition, the pre-service survey included questions on demographics and prior involvement in community service. The post-service survey for the research group also included a question asking students to describe their project and 8 additional Likert-style questions asking students to evaluate the impact of the SL experience on several factors including connection to the college, skills and learning. These questions were not on the control post-service survey.

**Qualitative data collection.** Qualitative data were collected as open-ended responses from the student surveys described above. Both pre- and post-service surveys included 6 questions that permitted free response. On the post-service survey for the research group the additional Likert-style questions also provided opportunity for short answers to better explain each response. Reflections from the C<sup>3</sup>IRG faculty were also collected at the end of the semester. These reflections asked the faculty to comment on the SL experience, its impact on students, and differences noted between the research and control classes.

## **Study Participants**

During the 2013 spring semester 155 service-learners (research/experimental group) and 88 non-service-learners students (control group) completed both pre- and post-surveys for a total student sample of 243. The age variable was set with specific age categories, the youngest of which was 18 or younger. This category represented 13.6 percent of the total participants. After the study, the researchers realized this category may include students under age 18; therefore, the category was removed to comply with IRB requirements. Only a small portion of the students in the control group were represented in the age categories 31 – 34 (1.9 percent) and 35 and older (0.0 percent), so those categories were also removed. This resulted in the sample total of 243.

Disciplines represented in this study included: education, art, student development, English, dental hygiene, gerontology, biology, speech, psychology, sociology, media arts and technology, and cooperative education. Community partners included: K-12 schools, college programs, a farmers market, community dental health clinic, nursing home, outpatient community home, domestic violence prevention organization, public city parks, and agencies providing clothing for low income clients who had secured employment interviews.

## **Research Questions**

The goals of this paper are to determine if there are differences a) between the colleges on the initial pre-survey and/or on the post-survey outcomes, b) between the service-learners and the non-service-learners on the initial pre-survey and/or on the post-survey outcomes, and c) among the service-learners from the pre- to the post-survey.

## **Results**

### **Demographics Characteristics of Respondents by College**

The sample included 155 service-learners (research/experimental group) and 88 non-service-learner students (control group), for a total sample of 243. Chi-squares were used to obtain general demographic characteristics of the sample and to test for statistically significant variables (see table 1). For the general demographics, the research and control groups are combined for each college. Several of the variables were statistically significant. When combining the four colleges, nearly 64 percent of the students were female, but there were statistically significant differences between the colleges. Eighty-four percent of

HCC's students were female, while only 50 percent of KCC's students were female ( $p < .01$ ). Age was also a significant variable. For all four colleges, the majority of the students were in the 19 - 22 age group; however, nearly 79 percent of BMCC's students were in that age category, while only 48 percent of HCC's students were aged 19 - 22 ( $p < .001$ ).

Also significant were students' identified race/ethnicity ( $p < .001$ ). Among all four colleges, more students were Hispanic/Latino (47.2 percent) than any other group, followed by Black/African American students at 22.6 percent. This is quite different among the individual colleges. BMCC follows the general trend of the total, as did HCC's students, although with slightly higher percentages: 64.6 percent Hispanic/Latino and 29.2 percent Black/African American. KCC's and QCC's students were significantly different as well; KCC's students were mainly Black/African American (28.6 percent), followed by Asian/Pacific Islander (23.8 percent) and Hispanic/Latino (14.3 percent). QCC's students were mainly Hispanic/Latino (34.6 percent), followed by Asian/Pacific Islander (25 percent) and White (15.4 percent). In terms of gender, age, and race/ethnicity, all four colleges exhibited significant diversity among their students.

At all four colleges, more of the participating students were sophomores as compared to freshmen, which means they had already earned at least 30 credits and may have been more comfortable with college in general. Credits earned was statistically significant ( $p < .05$ ), but this is suspect. In looking at actual numbers, fewer students said they were freshmen than marked 0 - 15 and 16 - 30 credits earned (74 vs. 109) and more students said they were sophomores than marked 31 - 45 and 46 or more credits earned (162 vs. 121). It would seem to indicate that students may not be aware the link between credits earned and class standing. However, although not statistically significant, when asked the highest level of education they intended to pursue, most students were quite positive and optimistic. Most students at all four colleges indicated that they planned to pursue either a bachelor's or master's level degree, and many indicated they hoped to pursue a doctorate.

Although not statistically significant, there was a notable difference between colleges in terms of student transfers. Fifty-nine percent of KCC's students had transferred to that school from another college; 43.7 percent of

QCC's students had transferred in, 18.9 percent of HCC's students had, and only 5.9 percent of BMCC's students had transferred in from other colleges. All of the colleges had similar mean GPA scores among their students, all centered around 3.0.

Previous community service experience among the students also varied widely and was statistically significant ( $p < .001$ ). None of KCC's students had previous experience, and only 4.2 percent of BMCC's had previous experience. In contrast, 13.2 percent of QCC's students had previous experience, and 32.7 percent of HCC's students had previous community experience. While students in some colleges (KCC, Hostos) were aware that they were enrolling in a course with a service-learning component and may have self-selected service-learning, students at other colleges (BMCC, QCC) had no advance knowledge of the course service-learning component.

Overall, among all four colleges, the general student participant was female, age 19 - 22, Hispanic/Latino, and a sophomore with a goal of a bachelor's or master's degree. The general BMCC or HCC student would be similar: female, age 19 - 22, Hispanic/Latino or Black/African American, a sophomore, with higher education goals. In general, a KCC student would be female, 19 - 22, Black/African American or Asian/Pacific Islander, a sophomore, looking forward to pursuing a bachelor's degree, and a QCC student would be female, 19 - 22, Hispanic/Latino or Asian/Pacific Islander, a sophomore, looking forward to pursuing a bachelor's or master's degree.

### **Demographics of Control and Experimental Groups**

The researchers first determined whether there were statistically significant differences between service-learners and non-service-learners by demographics (table 2). Chi-squares were used to obtain general demographic characteristics of the sample and to test for statistically significant variables. In general, the service-learners and non-service-learners were similar on most variables. The majority of both groups were female, aged 19 -22, Hispanic/Latino sophomores with a GPA around 3.0. None of these variables were statistically significant.

However, there were statistically significant differences between the service-learners and non-service-learners in terms of transfer status and previous

community service. The service-learners were more likely to have transferred to their current school from another college ( $p=.04$ ), and they were more likely to have previous community service experience ( $p=.011$ ).

### **Quantitative Studies**

In response to the first goal, to determine if there were differences between the colleges on the initial pre-survey and/or on the post-survey outcomes, one-way ANOVAs were conducted to look for differences in pre- and post-survey mean scores of the items among the four colleges. The differences between the means of the four colleges were examined on nineteen items related to community engagement and academics, which included general education skills and knowledge.

Among the pre-survey scores of the four colleges, in general, the means of all the items were fairly consistent, but only one of the fifteen pre-survey items was statistically significant. Students were asked how likely they would be to volunteer at some point in the next twelve months. The ANOVA revealed a statistically significant difference in the means of the four colleges,  $F(3,205)=4.30$ ,  $p < .01$ . Tukey HSD post hoc tests showed that HCC students were significantly more likely to volunteer in the next twelve months as compared to BMCC students at the .05 level of confidence (data not shown).

There were fewer responses among the service-learners and non-service-learners for the post-test. This could be due to a combination of factors such as students being absent the day the instrument was administered, or students dropping the course. Again, the means of all the items remained fairly consistent, but not significant, except for two items (data not shown). The ANOVA revealed a statistically significant difference in the means of the colleges for the item in which students indicated that they are confident that they will be able to apply what they have learned in their classes to solve real problems in society,  $F(3,135)=2.67$ ,  $p=.05$ . Tukey HSD post hoc tests showed that HCC students were more likely to state that they felt confident in course application to real world problems than BMCC students. The second item was again the likelihood of volunteering in the next 12 months,  $F(3,131)=3.54$ ,  $p=.017$ , with HCC students stating that they are more likely to volunteer than BMCC students. One item that was slightly significant was students' perception that they arrive on time to class,  $F(3,133)=2.59$ ,  $p=.055$ . Tukey HSD post hoc tests indicated that BMCC students

were more likely than QCC students to say that they arrive on time for class. As mentioned earlier, all four of the colleges were diverse, urban community colleges, so significant differences would not necessarily be expected.

### **Comparison of Pre and Post Responses of Service-Learners and Non-Service-Learner**

To answer the second research question, whether there were significant mean differences between the service-learners and the non-service-learners on the initial pre-survey and/or on the post-survey outcomes, one-way MANOVAs were conducted. The researchers expected the means of the two groups to be similar on the pre-tests if the service-learner and non-service-learner groups were comparable. However, if the service-learning project had a significant impact on the service-learners, the researchers expected differences between the means of the two groups on the post-test items.

First, the community engagement variables from the pre-survey were entered as a group. There were no significant multivariate main effects revealed for the two groups in the first MANOVA,  $Wilks' \lambda=0.982$ ,  $F(9,143)=0.286$ ,  $p=0.978$ ,  $partial \eta^2=0.018$ . There was no statistically significant difference between the mean scores of the service-learners and non-service-learners on the community engagement pre-survey items. The academic and general education skills variables from the pre-survey were then entered as a group for the second MANOVA. Again, no significant multivariate main effects were revealed for the two groups,  $Wilks' \lambda=0.932$ ,  $F(9,221)=1.632$ ,  $p=0.101$ ,  $partial \eta^2=0.068$ . There was no statistically significant difference between the mean scores of the service-learners and non-service-learners on the academic and general education skills pre-survey items. This is not surprising, as we would not expect differences between the means of the two groups on the pre-surveys.

The third and fourth MANOVAs were conducted to determine if there were significant differences between the means of the post-survey scores of the service-learners and non-service-learners. Again, post-survey community engagement variables were entered as a group. In general, post-survey means were higher among the service-learners as compared to non-service-learners. Service-learners indicated that their sense of self included a commitment to others; they were more aware of opportunities for civic engagement and understood its importance and were more likely to volunteer in the future. The MANOVA revealed significant multivariate main effect for the two groups,

*Wilks'  $\lambda=0.847$ ,  $F(9,122)=2.454$ ,  $p=0.013$ ,  $partial\ eta^2=0.153$*  (data not shown). There was a statistically significant difference between the mean scores of the service-learners and non-service-learners on the community engagement post-survey items. Given the significance of the overall test, univariate main effects were examined. However, the only significant univariate main effect was for the item "How likely are you to volunteer in your community in the next twelve months?"  *$F(1,130)=17.145$ ,  $p<.001$ ,  $partial\ eta^2=0.117$* . The service-learners were significantly more likely than the non-service-learners to state that they would volunteer in the next twelve months.

The academic and general education skills variables for the post-survey were entered into the fourth and final MANOVA, and again the post-survey means of the service-learners were higher than those of the non-service-learners. Service-learners indicated they were more comfortable speaking or asking questions in class and communicating with their professor; they also indicated that they were more likely to interact with people who were different both in school and outside the academic setting. However, the MANOVA revealed no significant multivariate main effect for the two groups,  *$Wilks' \lambda=0.975$ ,  $F(10,124)=0.315$ ,  $p=0.976$ ,  $partial\ eta^2=0.025$* . There was no statistically significant difference between the mean scores of the service-learners and non-service-learners on the academic post-survey items (see table 3). While we would expect no statistically significant differences between the mean scores of the service-learners and non-service-learners in the pre-test items, we would hope to see some significant differences in the post-test scores.

### **Comparison of Pre- and Post-Survey Responses of Service-Learners**

In response to the third research question, were there differences among the service-learners from the pre-survey to the post-survey, paired samples T-tests were conducted on the community engagement and academic/general education skills variables to determine if there were significant differences in the means of the service-learners only between the pre-survey and the post-survey scores. Among the community engagement variables, the means of several post-survey items were higher than pre-survey items. Service-learners were more likely to state that their community was enriched through diversity, that they enjoyed volunteer work and were more likely to volunteer in the future, and that they were aware of opportunities to serve their community. The item "I am aware of opportunities to become involved in the community" was the only item

that was statistically significant  $t(93)=-3.245, p=.002$ , suggesting that service-learners were more aware of volunteer opportunities after the service-learning experience.

Among the academic items, service-learners were more likely to say that they were more comfortable speaking in class and writing essays, were more likely to follow directions, and were more likely to interact with people who are diverse both on and off campus, after their service-learning experience. Two of those academic items were statistically significant. The item "How comfortable is it for you to make a presentation in front of a class or speak in public?" was significant,  $t(94)=3.208, p=.002$ . Students indicated that they felt significantly more comfortable making presentations and/or speaking in public after the service-learning experience. The item "At your college, how often do you interact with people from different a culture, race, ethnicity, religion, or sexual identity than your own?" was significant,  $t(93)=-2.709, p=.008$ . The service-learners were more likely, post-service-learning experience, to say that they interacted with someone who was diversely different (see table 4). We would have expected to see more significant differences between the pre- and post-test mean scores of the service-learners.

Several items addressing participants' feelings about the service-learning experience were asked in the post-test of the service-learners only. Frequencies were run on the responses of the service-learners to those questions. In general, the students responded positively to the service-learning experience. Over 64 percent of the service-learners found the course to be relevant in their lives, and more than 78 percent applied what they learned in the course to problems outside of class at least sometimes. Over 63 percent felt that the service-learning experience helped them to learn the course material at least somewhat, and 46.8 percent found their interest in the course was deepened because of the service-learning project. Nearly 85 percent rated their experience from good to excellent. Finally, 62.5% of the service-learners reported that their experience helped them feel more than a slight connection to their college.

### **Qualitative Studies**

Students reflected on their SL experience in the form of free-write responses to question in the surveys and other reflective writings.



Student responses about their SL experiences were positive. Many indicated that it deepened their understanding with comments that SL "...helped me understand the subject better", and the SL "...helps me to develop a deeper understanding". Some students pointed out that the SL experience improved skills that were objectives of that course, such as a speech student indicating that the project "...helps on speech skills".

Others pointed out that SL was grounded in an experience learned in an authentic environment. One student wrote that SL "...helps you see the reality more. It is more important and it will help you gain experience," and another stated "... hands on approach works better than books". A psychology student contrasted book learning to the actual experience stating "...it is one thing to review a lesson, it is a completely new experience to help a person with that disorder".

Student comments also touched on learned skills important to student success both within higher education and in the workplace. Some students expressed increased confidence in their coursework, as a result of SL and others pointed out that SL helps them "...interact with others". Additionally students commented on the collaborative aspect of the experience, with one stating "...it could help develop the skills you need to work with people for a shared cause or goals".

One student sent a note to her professor at the completion of an English course that looked at healthy eating habits, eloquently summing up her service-learning experience stating:

"Some students learn better hands on then in a classroom setting and I am one of ...I got a tremendous sense of pride in helping my community and learned a wealth of information... Stepping out of the classroom and being able to inform them of healthier ways of eating and how what they consume today harms them tomorrow made me feel very empowered. ... Learning in the classroom is beneficial as well but having the hands on experience heightened my level of learning... I strongly believe that this method of teaching is an excellent way to keep us informed and engaged with school."

Several faculty reflected on student learning of course materials. An education faculty member reflected on the concrete way students learned through SL:

“... students were able to connect academic material to the SL experience by identifying age linked developmental sequences as described in their academic materials to their observations of children at the field site and this seemed to make them more interested in their course work”.

A biology faculty reflected on service-learners teaching high school students “...because they had to teach the protocol to someone else, they made sure they knew all the details.”

A faculty member teaching a speech course that included a tabled presentation at a health fair reflected: “We are a speech class and they did research, prepared presentations and used persuasion to attract attendees to our table and participate in an experiment.”

Several faculty commented on the connections students developed with the community as a result of their SL projects. An art professor teamed with a community organization dedicated to addressing the issue of domestic violence. The faculty member reflected:

“The students reported that collaborating with the community partner members enabled them to reflect on issues related to domestic violence on a more “personal level,” and helped them “put a face” on domestic violence. The students artwork addressed the topic of domestic violence and was exhibited at the community college and later presented to the community partner.”

A professor in an abnormal psychology course collaborated with a psychiatric facility so that students could experience human conditions described in class. The professor reflected “...there were many 'aha' moments which students shared with me, or with the whole class, ...There is a powerful personal and emotional component to their understanding.”

## Discussion

This study attempts to demonstrate differences between CUNY community college student service-learners versus non-service-learners, as well as changes in the service-learners pre- and post-service. Two different categories of student outcomes were analyzed independently; community engagement and academic/general education skills. The multivariate analysis of the nine outcomes related to community engagement revealed that SL students had a statistically significant greater change in scores than the non-service-learning students. When testing each individual outcome, many demonstrated increased scores. Post-experience, service-learners were more likely to indicate that they enjoyed volunteer work, were more aware of service opportunities, and were more likely to volunteer in the future. The only individual item that reached significance was the willingness to volunteer in the next 12 months.

The multivariate analysis of the ten outcomes related to academics and general education skills revealed that SL students had a mean that was greater than that of the non-service-learning students, but this analysis did not reach the level of significance. When service-learner responses were compared pre- and post-SL experience, two individual outcomes did reach statistical significance. One outcome was that students felt more comfortable presenting in class or publicly after the SL experience. The second statistically significant outcome was that students felt more comfortable interacting with those others who are different from themselves. Service-learners were also more comfortable with other academic/general education skills post-experience, including writing and teamwork.

Although there were a limited number of individual outcomes that reached statistical significance, this study employed mixed methodologies to support and help confirm these findings. After the SL experience, service-learners reported positive feelings about the experience indicating it helped them learn course content, deepened their interest in the course, and that their overall experience was positive. Further, student reflective statements were uniformly positive, touching on many benefits received as a result of service-learning projects. Similarly, faculty observations of student deep learning and skill development strengthen the contention that community college students receive many benefits from participation in service-learning.

Although few measures reached the level of statistical significance, this data still shows clear correlations between SL experiences and student benefits, particularly with regard to civic engagement. It should be noted that many of the published studies on SL do not provide data with statistical information, but, rather, present percentages of positive responses to outcome questions. Many of the more definitive articles with significant student outcomes come from meta-analysis of many other studies, or from studies with very large numbers of students. In this study, the original sample size was 243, with only 1/3 of the sample being part of the control group. The small control sample resulted when several faculty had difficulty identifying courses to serve as the control study.

Response rates were another factor that limited sample size since, when administering the survey, not all students in the research and control groups completed both pre- and post-surveys. Perhaps a larger sample size would have resulted in measurable significant differences among groups.

Additional limitations must be considered when interpreting these results, including the organizational structure within the participating colleges as well as the heterogeneity in the delivery of the service-learning pedagogy within different courses and disciplines. As Steinberg, Bringle and McGuire (2013) have pointed out, assessment of service-learning is difficult since it is implemented in so many different ways, and these differences complicate research and assessment of this pedagogy.

This is certainly true at CUNY community colleges since there are many inconsistencies in the way SL is supported and implemented. As noted earlier, there are many differences in the way this pedagogy manifests at each campus. One inconsistency is the way students were informed about SL courses and assignments. At some colleges SL courses are designated in course catalogs and schedules of classes to alert students that they are selecting a course with a service-learning component. At other colleges students learn the course includes SL once the semester begins. In some courses, individual C<sup>3</sup>IRG faculty members required students to participate in the service-learning project, while in others it was an option. These inconsistencies may have impacted the manner in which individual students participated in the course and responded to the survey items. It should be noted that although the different community colleges had differing levels of support for service-learning within each institution, this study

did use systematic methods to, at least somewhat, level the playing field. The C<sup>3</sup>IRG co-PIs worked together to establish essential consistencies across all four campuses by developing quality, well-designed SL experiences, providing faculty professional development, and utilizing the same operational methodologies (for example, utilizing the same definitions of curricular academic SL, standardizing the number of required hours of service, reflection requirements, etc). Further, when analyzing differences across the four colleges involved in this study, very few significant differences were found in student responses despite apparent demographic differences. This supports the feasibility of a system-wide approach to SL research and assessment within the CUNY community colleges.

Other demographic variables may have provided meaningful information, such as student responsibilities outside the classroom. This may prove to be an important issue for future investigations as many community college students have jobs and/or be responsible for the care of a family member such as a parent or a child under age 18 in addition to academic responsibilities.

Constraints on faculty time may have also limited this study. Implementation of SL is a time-consuming process, and the C<sup>3</sup>IRG faculty did not receive release time. Time constraints are particularly relevant for CUNY community college faculty who carry a heavy course load of 27 hours yearly; a load significantly higher than is carried by faculty at four-year institutions.

## **Conclusions**

The data, though only reaching statistical significance on a few measures, still clearly supports the contention that CUNY community college students benefit from academic SL, with gains in community involvement and academic/general education skills. This data demonstrates higher mean post responses for service-learners versus non-service-learners, increases in mean responses of SL students pre- to post-service, service-learners' positive self-assessment of their experience, and student and faculty positive qualitative responses. The limitations of this study must be addressed when conducting this research in the future. It is important to continue these efforts so that we learn how to maximize the benefits of SL pedagogy for all students and especially for groups of students that have been identified as benefiting most from this pedagogy.

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**Table 1****Demographic Characteristics of Respondents by Group (%) (N=243)**

	<b>Group</b>		
	<b>Research</b>	<b>Control</b>	<b>Total</b>
<b>Gender</b>			
Female	66.0	60.2	63.9
Male	34.0	39.8	36.1
<b>Age</b>			
19-22	65.2	72.7	67.9
23-26	23.9	18.2	21.8
27-30	11.0	9.1	10.3
<b>Race/ethnicity</b>			
White	9.3	8.7	8.9
Black/African American	20.9	23.5	22.6
Hispanic/Latino	51.2	45.0	47.2
Asian/Pacific Islander	11.6	10.1	10.6
Other	5.8	9.4	8.1
<b>Level</b>			
Freshman	31.5	31.0	31.4
Sophomore	68.5	69.0	68.6
<b>Credits earned</b>			
0-15	26.0	28.6	27.0
16-30	20.5	20.2	20.4
31-45	26.0	26.2	26.1
46 or more	27.4	25.0	26.5
<b>Transferred from another school</b>	23.4*	12.5*	19.4*
<b>Previous community service experience</b>	15.6*	4.6*	11.6*
<b>GPA (mean)</b>	3.07	3.01	3.04

\*significant at  $p < 0.5$

**Table 2**  
**Post-Score Means By Group (n=138, 95% CI)**

	Research		Control		t	df
	Mean	SD	Mean	SD		
<b>Community Involvement</b>						
Aware of opportunities for community involvement	3.84	1.10	3.78	1.20	0.29	137
Use knowledge and skills from class to address community issues	3.77	1.02	3.74	1.04	0.17	136
Important of voting and be political involvement	3.99	1.10	3.96	1.15	0.18	136
Community enrichment from cultural or ethnic diversity	4.60	3.27	4.25	1.01	0.67	134
Like to do volunteer work addressing community issues	3.76	1.14	3.64	1.10	0.58	137
Respond to others with empathy, regardless of their backgrounds	4.45	0.82	4.17	1.06	1.74	137
Confident applying course knowledge to solve problems in society	4.33	0.84	4.07	0.97	1.59	137
Sense of self includes desire to be of service to others	4.25	0.89	3.90	1.14	1.93	135
Likely to volunteer in my community in the next 12 months	3.51	0.99	2.79	1.00	3.78***	133

**College Skills**

Comfort with presentations in class or public speaking	2.68	1.50	2.62	1.21	0.22	136
Comfort with writing essays	2.24	1.02	2.02	1.05	1.13	136
Comfort as team member in group projects	1.95	1.00	2.05	1.01	0.54	136
Meet deadlines or due dates	4.50	4.28	4.20	1.12	0.45	135
Follow directions completely	4.45	0.66	4.45	0.71	0.36	136
Comfort asking questions in class	2.25	1.17	2.26	1.08	0.56	136
Comfort speaking with instructor outside of class	2.28	2.37	2.10	1.05	0.49	136
Arrive to class on time	4.82	4.20	4.36	0.69	0.71	136
Interaction with differences in college	4.73	4.27	4.24	0.98	0.74	136
Interaction with differences outside of college	4.18	0.97	4.27	0.81	0.53	135

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\*\*\*significant at  $p < .001$

NB: school items 1, 2, 3, 6, and 7 are reverse coded

**Table 3**  
**Pre- and Post-test Means of Research Group (95% CI)**

	<u>Pre-test</u>		<u>Post-test</u>		<b>n</b>	<b>t</b>	<b>df</b>
	<b>Mean</b>	<b>SD</b>	<b>Mean</b>	<b>SD</b>			
<b>Community Involvement</b>							
Aware of opportunities for community involvement	3.32	1.28	3.82	1.05	94	3.25**	93
Use knowledge and skills from class to address community issues	3.80	1.10	3.76	1.02	95	0.35	94
Important of voting and be political involvement	3.99	1.25	3.98	1.10	95	0.09	94
Community enrichment from cultural or ethnic diversity	4.33	0.94	4.61	3.28	95	0.81	94
Like to do volunteer work addressing community issues	3.45	1.16	3.74	1.11	76	1.91	75
Respond to others with empathy, regardless of their backgrounds	4.56	0.76	4.48	0.74	94	1.05	93
Confident applying course knowledge to solve problems in society	4.40	0.87	4.32	0.84	95	0.85	94
Sense of self includes desire to be of service to others	4.20	0.97	4.24	0.89	92	0.41	91
Likely to volunteer in my community in the next 12 months	3.26	1.14	3.51	0.94	81	1.90	80

**College Skills**

Comfort with presentations in class or public speaking	2.89	1.15	2.68	1.50	96	1.44	95
Comfort with writing essays	2.35	1.02	2.24	1.02	96	1.09	95
Comfort as team member in group projects	1.90	0.79	1.95	1.00	96	0.46	95
Meet deadlines or due dates	4.13	0.95	4.51	4.30	95	0.89	94
Follow directions completely	4.34	0.65	4.45	0.66	95	1.42	94
Comfort asking questions in class	2.46	1.15	2.26	1.19	94	1.30	93
Comfort speaking with instructor outside of class	2.16	1.08	2.28	2.38	95	0.48	94
Arrive to class on time	4.44	0.63	4.85	4.24	94	0.94	93
Interaction with differences in college	4.02	1.03	4.75	4.28	95	1.64	94
Interaction with differences outside of college	4.11	1.07	4.19	0.97	95	0.86	94

\*\*significant at  $p < .01$

NB: school items 1, 2, 3, 6, and 7 are reverse coded

**Table 4**  
**Post-test means of service-learners on service-learning project questions (%)**

	Not at All Connected	Slightly Connected	Somewhat Connected	More Connected	Extremely Connected	n
I feel more connected to my college after having done a service-learning project.	21.5	16.1	32.3	21.5	8.6	93
	Not Relevant	Slightly Relevant	Neutral	Very Relevant	Extremely Relevant	n
What I learned in class is relevant to my life and others' lives.	3.2	5.3	27.4	34.7	29.5	95
	Never	Rarely	Sometimes	Often	Very Often	n
I have applied what I learned in this course to help solve problems outside of class.	9.3	12.4	39.2	16.5	22.7	97
	Didn't Help at All	Barely Helped	Neutral	Somewhat Helped	Helped a Lot	n
My service-learning experience in this class helped me to learn the material in this course.	5.4	2.2	28.0	24.7	38.7	93
	Did Not Deepen	Somewhat Deepened	Not Sure	Moderately Deepened	Definitely Deepened	n
My service-learning project deepened my interest in the content of this course.	12.8	18.1	22.3	23.4	23.4	94
	Poor	Fair	Good	Very Good	Excellent	n
I would rate the overall experience I had in the service-learning project.	2.2	11.8	31.2	24.7	29.0	93

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**Acknowledgments**

The authors thank the CUNY C<sup>3</sup>IRG research grant program for funding this study. The authors would also like to thank Josephine Pantaleo, Director of Academic SL at CUNY QCC, Mandy Fraley at CUNY KBCC and Kristen Hackett, research assistant.