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Outcomes of an Academic Service-Learning Project on Four Urban Community Colleges

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Abstract

Service-learning has a rich history in higher education, with a multitude of studies indicating positive learning, community engagement, and moral development outcomes of student participants. The majority of the research findings, however, have represented four-year colleges. And while there are limited outcome studies of service-learning in community colleges, those studies generally report on community colleges as a whole, rather than distinguishing outcomes based on rural, suburban, and urban status. Not all community colleges are created equal, however, in terms of student body, geographic location, and funding; results for an urban community college, for example, may be very different than for a rural community college. Four diverse, urban community colleges in New York City received a collaborative seed grant through the City University of New York to develop a research tool and provide support to faculty for service-learning projects in the 2012-13 academic year. The project identified community engagement and academic outcomes to be measured through a quantitative and qualitative questionnaire. The researchers found several positive outcomes, although very few were statistically significant, in this small, exploratory study.

Keywords: service-learning, urban community college, student outcomes, community engagement, academic

1. Introduction

1.1 Service-learning

Academic service-learning is a form of experiential education that links students with their immediate community. It is distinguished from "volunteer work" by its reciprocity in meeting needs both within the community and the institution of learning (Taggart & Crisp, 2011; Stanton & Erasmus, 2013). The National Service-Learning Clearinghouse defines it as "a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities" (Taggart & Crisp, p. 25). While the format of service-learning can vary widely, in general, service-learning – both the service activity and the reflection – is integrated into the curriculum of a particular credit-bearing course (Taggart & Crisp, 2011).

Service-learning was first pioneered in higher education in the 1960s and 1970s as an effort to address concerns regarding a) how education serves society, b) what the purpose of education is in a democracy, and c) is there a relationship between service and social change. It was initially espoused and developed by activists, and often driven by a perceived need for social justice and social change. As the movement began to take root in higher education, consortia were created that developed, among other guidance, principles for best practice. Eventually, curriculum development was encouraged by service-learning advocates, and the idea of civic engagement and social responsibility among college graduates became a focus of service-learning as well (Stanton & Erasmus, 2013). Service-learning has been embraced by the American Association of Community Colleges (AACC) as an experiential tool to improve student learning outcomes (Prentice & Robinson, 2010). And service-learning has become incorporated into a six-component effort often termed High Impact Practices (HIPs), championed by Kuh and the Association of American Colleges and Universities (AACU) as being especially impactful for underserved college students (Finley & McNair, 2013). Service-learning as an experiential model is supported by specific developmental theories such as Kohlberg's Theory of Moral Development (Bernacki & Jaeger, 2008; Taggart & Crisp, 2011).

Much effort has been put into researching the specific outcomes of service-learning in various settings. Depending upon the level of integration between the service and the learning, and the type of higher education institution, service-learning can have a positive effect on personal (moral, spiritual, personal identity) and interpersonal (leadership,

communication skills) aspects of a student's development. It can facilitate cultural and racial understanding and ameliorate stereotypes, and it can positively affect students' commitment to service and their sense of social responsibility. Students who have experienced service-learning may be more likely to engage in subsequent community service. Service-learning can also positively impact students' academic learning and encourage application of course content to the real world (theory to practice). It may have a positive effect on grades/GPA and may increase student retention and graduation rates as well (Astin & Sax, 1998; Eyler & Giles, 1998; Eyler et al, 2001; Bernacki & Jaeger, 2008; Brandes & Randall, 2011; Warren, 2012; Finley & McNair, 2013).

1.2 Community Colleges

Despite the fact that almost half of students in higher education in the U.S. are in community colleges, much of the research regarding the effects of service-learning on students has occurred at the four-year level. Yet demographically, students enrolled in community colleges tend to be significantly different than students attending four-year colleges (Prentice & Robinson, 2010; Prentice, 2011). For example, roughly 60 percent of the community college population is enrolled part-time, and the median age of students is 24 (AACC, 2014). However, there is little research available about community colleges in terms of connecting service-learning with the potential learning outcomes discussed earlier (Prentice & Robinson, 2010; Prentice, 2011).

Furthermore, even among community colleges, there are vast differences in the types of colleges, as well as the students enrolled. Community colleges can be rural, suburban, or urban. The average enrollment for urban campuses is significantly higher than the other types, and the student population is much more diverse (Hardy & Katsinas, 2007). Some of the urban colleges in New York City are much more diverse than the AACC average data would suggest. For example, their full-time/part-time ratios are the inverse of AACC data, and the race/ethnicity of students is vastly different (IPEDS). Urban community colleges also tend to have less revenue than suburban community colleges (Dowd, 2004), which may affect the institutionalization of programs such as service-learning. Each of these types of colleges has unique characteristics that may play a role in the success, and positive outcomes, of service-learning. Aggregating service-learning data from a mix of these types of schools – as most of the limited community college studies have done – may not provide a clear picture of the learning outcomes of service-learning among urban community colleges. The four urban community colleges discussed in this paper are much more diverse than the overall cumulative data for all community colleges in the U.S.

2. Method

2.1 City University New York and the Community College Collaborative Incentive Research Grant

The City University of New York (CUNY) is an integrated system that includes eleven senior colleges and seven community colleges, with 24 campuses serving over a quarter million degree-bearing students and another nearly quarter million non-degree-credit students (CUNY). CUNY supports collaborative research among its community college faculty through an internal grant called the Community College Collaborative Incentive Research Grant (C3IRG). In 2012, four of CUNY's seven urban community colleges received a C3IRG grant for an exploratory study to assess the impact of service-learning on community college students: Borough of Manhattan Community College in Manhattan (BMCC), Hostos Community College in the Bronx (HCC), Kingsborough Community College in Brooklyn (KBB), and Queensborough Community College in Queens (QCC). These four urban community colleges represent some of the most diverse community colleges in the U.S. (see table 1).

Table 1. Enrollment Data of Four NYC Urban Community Colleges (% unless otherwise noted)

	College				
	BMCC	HCC	KCC	QCC	AACC
Enrollment					
Total N	24,537	6,455	18,934	15,711	12.8M
Full-time	66	53	57	60	40
Part-time	34	48	43	40	60
Gender					
Female	58	67	55	54	57
Male	41	33	48	46	43
Age					
Average	na	26	na	23	28
Median	21	na	na	na	24
24 and under	74	65	78	80	*
25 and over	26	35	22	20	*
Race/ethnicity					
Non-resident Alien	7	5	2	6	1
Race/Ethnicity Unknown	0	0	0	0	5
Two or More Races	1	0	0	0	2
White	10	3	34	20	51
Native Hawaiian or other Pacific Islander	0	0	0	1	*
Hispanic	42	60	18	29	19
Black or African American	28	28	31	22	14
Asian	12	3	14	22	6*
American Indian or Alaska Native	0	0	0	1	1
Number of countries of birth (approx)	166	38+	na	143	na
Number of native languages (approx)	121	na	73	84	na

Source: IPEDS Data Center, college websites, AACC website.

NB: Data is fall 2012. AACC data is national CC data for comparison.

*AACC data combines Asian/Pacific Islander and categorizes age differently than IPEDS.

At the time of the grant application, each of these colleges was at a different point in the development of service-learning for their campus – for example, service-learning at QCC is integrated into the curriculum and service-learning courses are designated as such in the course schedule, while BMCC is currently in the beginning stages of attempting to formalize how academic service-learning would be reflected on their campus. As a part of this small seed grant, each college identified a principal investigator (PI) for their campus. Each PI facilitated faculty workshops in the fall, identified three faculty who would develop and teach a service-learning course in the spring, and supported faculty efforts in course development.

The PIs also worked to develop an instrument to measure various learning outcomes, based on prevailing literature and the goals of each campus. They finalized an instrument to measure pre- and post-service-learning attitudes and experiences for the students in the participating faculty courses, and control courses, on all four campuses. The instrument was approved by the CUNY Institutional Review Board (IRB) and administered by staff who had completed the Collaborative Institutional Training Initiative (CITI) modules in their disciplines. The PIs also created a loose definition of what constituted a service-learning course for the purposes of this project – for example, in terms of a minimum number of hours committed to the service component – so the instrument would measure somewhat similar efforts. Each faculty participant was also asked to identify a second section of their course, or a similar course, that would constitute a control group.

2.2 Sample and Data Collection

With three faculty on four campuses, and the same number of control courses, a total of 24 courses were involved in the research plan, which included a final sample of 243 students. The courses represented a wide sample of disciplines: Education, Art, Student Development, English, Dental Hygiene, Gerontology, Biology, Speech, Biotechnology, 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, city parks, and an agency providing interview clothing to the low-income.

The instrument was administered to the students in each research and control group classroom, once at the beginning of the semester and once at the end of the semester (actual days of administration varied by college). The class instructor was not present. 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.

2.3 Research Questions

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

3. Results

3.1 Descriptive Data

The sample included 155 service-learners (research/experimental group) and 88 non-service-learner students (control group), for a total sample of 243.

The age variable was originally set with specific age categories on the instrument. The youngest age category was phrased as '18 or younger' and may have included some students under age 18. Unfortunately, after administering the surveys, the PIs discovered that the IRB approval was only for students 18 and older. They consequently had to remove the entire category from the age variable to comply with IRB requirements. This category represented 13.6 percent of the total participants. The PIs also found that 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 from the age variable. This resulted in the sample total of 243.

Chi-squares were used to obtain general demographic characteristics of the sample and to test for statistically significant variables (see table 2). 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 percent0, 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.

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.

Table 2. Demographic Characteristics of Respondents by College (%) (N=243)

	College				
	BMCC	HCC	KCC	QCC	TOTAL
N	118	50	22	53	243
Gender					
Female	57.3	84.0	50.0	65.4	63.9**
Male	42.7	16.0	50.0	34.6	36.1**
Age					
19-22	78.8	48.0	68.2	62.3	67.9***
23-26	13.6	26.0	31.8	32.1	21.8***
27-30	7.6	26.0	0.0	5.7	10.3***
Race/ethnicity					
White	6.1	4.2	19.0	15.4	8.9***
Black/African American	22.8	29.2	28.6	13.5	22.6***
Hispanic/Latino	51.8	64.6	14.3	34.6	47.2***
Asian/Pacific Islander	5.3	2.1	23.8	25.0	10.6***
Other	8.8	0.0	14.3	11.5	8.1***
Mixed	5.3	0.0	0.0	0.0	2.6***
Level					
Freshman	31.6	25.5	35.0	34.6	31.4
Sophomore	68.4	74.5	65.0	65.4	68.6
Credits earned					
0-15	21.4	22.2	31.6	42.9	27.0*
16-30	20.5	15.6	36.8	18.4	20.4*
31-45	32.5	20.0	21.1	18.4	26.1*
46 or more	25.6	42.2	10.5	20.4	26.5*
Highest level of education plan to pursue					
AA/AAS	7.0	16.0	4.8	7.8	8.9
BA/BS	33.3	34.0	47.6	33.3	34.7
MA/MS	38.6	36.0	38.1	31.4	36.4
PH.D./Ed.D	20.2	14.0	9.5	25.5	19.1
No plan to obtain further degree	0.9	0.0	0.0	2.0	0.8
Transferred from another school	5.9	18.9	59.1	34.7	19.4
Previous community service experience	4.2	32.7	0.0	13.2	11.6***
GPA (mean)	3.04	3.19	2.78	2.97	3.04

***significant at p=<.001

**significant at p=<.01

*significant at p=<.05

One-way ANOVAs, MANOVAs, and paired T-tests were utilized to conduct various analyses of differences between mean scores of selected items. For the items measured in this paper, the responses to each item were measured on a Likert scale from one to five, five being the most positive (except for the reverse scored items noted in the tables).

3.2 Question One

In response to the first goal, to determine if there were differences between the colleges on the initial pre-test and/or on the post-test outcomes, one-way ANOVAs were conducted to look for differences in pre- and post-test mean scores of the items among the four colleges (see tables 3 and 4). The differences between the means of the four colleges were examined on fifteen items related to community engagement and academics.

Among the pre-test scores of the four colleges, in general, the means of all the items were fairly consistent among the four colleges, but only one of the fifteen pre-test 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 (see table 3).

Table 3. Pre Score Means of All Students By College (N=243, 95% CI)

	College					
	BMCC	HCC	KCC	QCC		
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	(df)F	p
Community Engagement						
Aware of opportunities for community involvement	3.26(1.22)	3.32(1.17)	3.14(1.42)	3.22(1.17)	(3,232)=.121	0.945
Use knowledge/skills from class to address community issues	3.50(1.30)	3.96(1.14)	3.41(1.10)	3.80(1.17)	(3,231)=2.15	0.095
Important of voting and be political involvement	3.83(1.22)	4.06(1.31)	3.86(0.91)	3.82(1.11)	(3,232)=0.48	0.690
Community enrichment from cultural or ethnic diversity	4.19(1.08)	4.51(0.86)	4.24(0.70)	4.14(1.01)	(3,230)=1.42	0.230
Like to do volunteer work addressing community issues	3.18(1.25)	3.26(1.24)	3.53(1.27)	3.14(1.13)	(2,182)=1.48	0.230
Respond to others w/empathy, regardless of their backgrounds	4.54(0.77)	4.71(0.65)	4.43(0.68)	4.45(0.89)	(3,227)=1.15	0.330
Confident apply course knowledge to solve problems in society	4.32(0.96)	4.42(0.96)	4.19(1.21)	4.38(0.88)	(3,229)=0.30	0.820
Sense of self includes desire to be of service to others	4.13(1.01)	4.28(1.04)	3.86(0.91)	4.02(1.09)	(3,225)=0.97	0.410
Likely to volunteer in my community in the next 12 months	3.05(1.05)	3.66(1.06)	2.95(0.89)	3.37(1.02)	(3,205)=4.30	0.006**
Academic						
Comfort with presentations in class or public speaking	2.87(1.14)	3.08(1.19)	2.86(1.13)	3.08(1.24)	(3,237)=0.62	0.602
Comfort with writing essays	2.30(0.96)	2.28(1.01)	2.27(0.88)	2.26(1.11)	(3,236)=0.01	0.998
Comfort as team member in group projects	2.16(1.01)	1.86(0.95)	1.95(0.78)	1.89(0.78)	(3,236)=1.71	0.167
Meet deadlines or due dates	4.04(1.02)	4.17(0.93)	3.86(0.94	4.04(0.95)	(3,233)=0.50	0.686
Follow directions completely	4.30(0.76)	4.43(0.74)	4.36(0.58)	4.38(0.63)	(3,234)=0.40	0.757
Comfort asking questions in class	2.50(1.17)	2.18(0.93)	2.60(0.85)	2.70(1.25)	(3,233)=1.86	0.137
Comfort speaking with instructor outside of class	2.22(1.20)	2.20(1.00)	2.45(1.18)	2.35(1.10)	(3,234)=0.41	0.749
Arrive to class on time	4.37(0.75)	4.44(0.54)	4.50(0.60)	4.48(0.61)	(3,233)=0.51	0.675
Interaction with differences in college	4.08(1.01)	4.12(0.99)	3.86(1.15)	4.02(0.99)	(3,234)=0.38	0.767
Interaction with differences outside of college	4.17(1.01)	4.06(1.11)	4.00(0.89)	4.19(1.02)	(3,234)=0.29	0.833

**significant at p=<.01

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

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. 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 (see table 4). As mentioned earlier, all four of the colleges were diverse, urban community colleges, so significant differences would not necessarily be expected.

Table 4. Post Score Means of All Students By College (n=138, 95% CI)

	College					
	BMCC	HCC	KCC	QCC		
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	(df)F	p
Community Engagement						
Aware of opportunities for community involvement	3.81(1.07)	3.78(1.18)	4.38(0.92)	3.78(1.15)	(3,135)=0.69	0.56
Use knowledge/skills from class to address community issues	3.66(1.02)	4.03(1.06)	3.38(1.41)	3.75(0.87)	(3,134)=1.42	0.24
Important of voting and be political involvement	3.95(1.08)	4.19(1.14)	4.13(0.99)	3.78(1.15)	(3,134)=0.91	0.44
Community enrichment from cultural or ethnic diversity	4.25(0.91)	4.39(1.05)	4.38(0.92)	4.18(0.90)	(3,131)=0.34	0.79
Like to do volunteer work addressing community issues	3.60(1.12)	3.97(1.12)	3.88(0.83)	3.64(1.20)	(3,135)=0.94)	0.43
Respond to others w/empathy, regardless of their backgrounds	4.33(0.94)	4.43(0.99)	4.38(0.92)	4.36(0.76)	(3,135)=0.10	0.96
Confident apply course knowledge to solve problems in society	4.12(0.97)	4.59(0.76)	4.25(0.71)	4.11(0.82)	(3,135)=2.67	0.05*
Sense of self includes desire to be of service to others	4.09(1.01)	4.42(0.91)	4.25(0.89)	3.94(1.00)	(3,133)=1.53	0.21
Likely to volunteer in my community in the next 12 months	3.11(1.03)	3.76(0.86)	3.38(0.74)	3.12(1.19)	(3,131)=3.54	0.02*
Academic						
Comfort with presentations in class or public speaking	2.41(0.97)	2.59(1.17)	2.13(1.13)	2.97(1.38)	(3,133)=2.21	0.09
Comfort with writing essays	2.30(1.05)	2.11(0.99)	1.88(1.13)	2.11(1.04)	(3,134)=0.59	0.62
Comfort as team member in group projects	2.11(1.11)	2.00(1.11)	1.5(0.53)	1.86(0.72)	(3,134)=1.09	0.36
Meet deadlines or due dates	4.16(1.09)	4.22(0.82)	3.75(1.04)	4.00(1.03)	(3,132)=0.67	0.57
Follow directions completely	4.44(0.71)	4.54(0.61)	4.75(0.46)	4.31(0.71)	(3,134)=1.32	0.27
Comfort asking questions in class	2.40(1.13)	2.11(1.17)	1.86(0.99)	2.25(1.16)	(3,134)=0.82	0.49
Comfort speaking with instructor outside of class	2.09(1.12)	2.19(1.20)	1.75(0.71)	2.00(0.72)	(3,133)=0.48	0.70
Arrive to class on time	4.55(0.57)	4.38(0.68)	4.25(0.71)	4.17(0.77)	(3,133)=2.59	0.06
Interaction with differences in college	4.38(0.89)	4.43(0.93)	4.25(0.71)	4.00(1.17)	(3,133)=1.48	0.22
Interaction with differences outside of college	4.16(0.97)	4.32(0.88)	4.00(0.53)	4.19(0.98)	(3,133)=0.38	0.77

*significant at p=<.05

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

There were six post-test items asked only of the service-learners. The differences in the means between the four colleges were statistically significant on two items. For the item regarding relevance of the class to students' lives, F(3,92)=3.36, p=.022, Tukey post hoc tests indicated that students at BMCC were less likely to say that they felt connected to their college post-service-learning than HCC students. And when asked if they had applied what they had learned in class to solve problems outside of class, F(3,94)=3.29, p=.024, post hoc tests showed that HCC students were more likely than BMCC students to indicate that they had applied what they learned outside of class (see table 5). For all the items, the mean scores were moderately high. The first item mean for feeling connected to the college ranged from 2.53 to 3.04, or 'slightly' to 'somewhat' more connected. For item two, relevance of what was learned to students' lives, the mean range was higher, from 3.61 to 4.02, from 'somewhat' to 'very' relevant. Service-learners' responses to item three, application of the course to solve problems outside of class, ranged from 3.06 to 3.55, falling between 'sometimes' and 'often.' Item four asked the service-learners if the experience helped them learn the course material better; mean scores ranged from 1.83 to 2.83, with two being 'neutral' and three being 'somewhat helped.' Responses for whether the service-learning project deepened students' interest in the course content ranged from 2.98 to 3.53, or 'somewhat' to 'moderately' deepened. The last item asked the service-learners to rate their overall experience with the project; the mean range from 3.47 to 3.93 represented a range from 'good' to 'very good.'

Table 5. Post Score Means of Service-Learners Only by College (N=97, 95% CI)

	College					
	BMCC	HCC	KCC	QCC		
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	(df)F	p
I feel more connected to my college after having done a service-learning project	2.52(1.33	3.06(1.28)	2.50(0.93)	2.89(1.08)	(3,90)=1.27	0.29
What I learned in this class is relevant to my life and the lives of others	3.58(1.17)	4.22(0.72)	3.63(0.74)	3.53(1.12)	(3,92)=3.36	0.02*
I have applied what I learned in this course to help solve problems outside of class	2.91(1.19)	3.76(1.23)	3.00(0.76)	3.26(1.15	(3,94)=3.29	0.02*
My service-learning experience in this class helped me learn the material in this course	3.09(3.82)	1.71(0.99)	2.13(0.99)	2.26(1.10)	(3,90)=1.89	0.14
My service-learning project deepened my interest in the content of this course	3.36(1.39)	3.19(1.39)	3.63(1.60)	3.00(1.08)	(3,91)=0.51	0.68
I would rate the overall experience I had in the service-learning project as:	3.48(1.29)	4.06(0.98)	3.43(1.13)	3.47(0.90)	(3,89)=2.09	0.11

*significant at p=<.05

3.3 Question Two

To answer the second goal, determining if there were differences between the service-learners and the

non-service-learners on the initial pre-test and/or on the post-test outcomes, one-way MANOVAs were conducted to determine if there were significant mean differences between service-learners and non-service-learners on the same items. First, the community engagement variables from the pre-test were entered as a group. The first MANOVA revealed no significant multivariate main effect for the two groups, Wilks' λ=0.982, F(9,143)=0.286, p=0.978, partial eta2=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-test items. The academic variables from the pre-test were then entered as a group for the second MANOVA, Again, though, the second MANOVA revealed no significant multivariate main effect for the two groups, Wilks' λ=0.932, F(9,221)=1.632, p=0.101, partial eta2=0.068. There was no statistically significant difference between the mean scores of the service-learners and non-service-learners on the academic pre-test items (see table 6). This is not surprising, as we would not expect differences between the means of the two groups on the pre-tests.

Table 6. Pre and Post Score Means of Service-Learners (research) and Non Service-Learners (control), All Colleges (N=243, 95% CI)

	Pre-test		Post-test	
	Service-Learners	Non Service-Learners	Service-Learners	Non Service-Learners
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Community Engagement				
Aware of opportunities for community involvement	3.29(1.23)	3.26(1.32)	3.86(1.08)	3.71(1.21)
Use knowledge/skills from class to address community issues	3.56(1.14)	3.65(1.39)	3.79(1.03)	3.66(1.05)
Important of voting and political involvement	3.86(1.25)	3.93(1.14)	4.00(1.11)	3.87(1.17)
Community enrichment from cultural or ethnic diversity	4.30(0.93)	4.26(1.04)	4.62(3.30)	4.26(1.00)
Like to do volunteer work addressing community issues	3.23(1.12)	3.22(1.47)	3.77(1.15)	3.58(1.11)
Respond to others w/empathy, regardless of their backgrounds	4.52(0.77)	4.67(0.63)	4.45(0.82)	4.13(1.09)
Confident apply course knowledge to solve problems in society	4.24(1.04)	4.46(0.91)	4.34(0.84)	4.03(0.97)
Sense of self includes desire to be of service to others	4.08(1.06)	4.24(0.85)	4.26(0.89)	3.87(1.17)
Likely to volunteer in my community in the next 12 months	3.21(1.10)	3.15(0.97)	3.51(0.98)***	2.74(0.95)***
Academic				
Comfort with presentations in class or public speaking	2.97(1.14)	2.92(1.21)	2.58(1.15)	2.63(1.23)
Comfort with writing essays	2.39(0.99)	2.12(1.00)	2.23(1.03)	2.08(1.05)
Comfort as team member in group projects	1.96(0.86)	2.13(1.02)	1.96(1.00)	2.08(1.02)
Meet deadlines or due dates	4.04(0.95)	4.02(1.05)	4.07(0.95)	4.18(1.13)
Follow directions completely	4.36(0.62)	4.33(0.86)	4.45(0.66)	4.43(0.71)
Comfort asking questions in class	2.40(1.05)	2.67(1.23)	2.26(1.17)	2.25(1.06)
Comfort speaking with instructor outside of class	2.17(1.07)	2.48(1.24)	2.06(1.02)	2.13(1.07)
Arrive to class on time	4.38(0.07)	4.47(0.70)	4.40(0.67)	4.35(0.70)
Interaction with differences in college	3.98(1.03)	4.17(0.99)	4.31(0.98)	4.20(0.99)
Interaction with differences outside of college	4.07(1.05)	4.22(0.99)	4.18(0.98)	4.25(0.81)

***significant at p=<.001

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

The third and fourth MANOVAs were conducted to determine if there were significant differences between the means of the post-test scores of the service-learners and non-service-learners. Again, the community engagement variables were entered as a group, this time for the post-test items. In general, post-test means were higher among the service-learners as compared to non-service-learners. Service-learners were more aware of opportunities for civic engagement and understood its importance, were more likely to volunteer in the future, and indicated that their sense of self included a commitment to others. The MANOVA revealed significant multivariate main effect for the two groups, Wilks' λ=0.847, F(9,122)=2.454, p=0.013, partial eta2=0.153. There was a statistically significant difference between the mean scores of the service-learners and non-service-learners on the community engagement post-test 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 eta2=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 variables for the post-test were entered into the fourth and final MANOVA, and again the post-test 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' λ=0.975, F(10,124)=0.315, p=0.976, partial eta2=0.025. There was no statistically significant difference between the mean scores of the service-learners and non-service-learners on the academic post-test items (see table 6). 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.

3.4 Question Three

In response to the third goal, were there differences among the service-learners from the pre-test to the post-test, paired samples T-tests were conducted on the community engagement and academic variables to determine if there were significant differences in the means of the service-learners only between the pre-test and the post-test scores. Among the community engagement variables, the means of several post-test items were higher than pre-test 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 to 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 7). We would have expected to see more significant differences between the pre- and post-test mean scores of the service-learners.

Table 7. Pre- and Post-Score Means of Service-Learners (research) Only, All Colleges (95% CI)

	Pre-test		Post-test					
	Mean	SD	Mean	SD	n	t	df	p
Community Engagement								
Aware of opportunities for community involvement	3.32	1.28	3.82	1.08	94	3.25	93	0.002**
Use knowledge and skills from class to address community issues	3.80	1.10	3.76	1.02	95	0.35	94	0.728
Important of voting and political involvement	3.99	1.25	3.98	1.10	95	0.09	94	0.932
Community enrichment from cultural or ethnic diversity	4.33	0.94	4.61	3.28	95	0.81	94	0.422
Like to do volunteer work addressing community issues	3.45	1.16	3.74	1.11	76	1.91	75	0.061
Respond to others with empathy, regardless of their backgrounds	4.56	0.76	4.48	0.74	94	1.05	93	0.296
Confident applying course knowledge to solve problems in society	4.40	0.87	4.32	0.84	95	0.85	94	0.397
Sense of self includes desire to be of service to others	4.20	0.97	4.24	0.90	92	0.41	91	0.682
Likely to volunteer in my community in the next 12 months	3.26	1.14	3.51	0.94	81	1.90	80	0.061
Academic								
Comfort with presentations in class or public speaking	2.89	1.15	2.58	1.15	95	3.21	94	0.002**
Comfort with writing essays	2.35	1.02	2.24	1.02	96	1.09	95	0.281
Comfort as team member in group projects	1.90	0.79	1.95	1.00	96	0.46	95	0.643
Meet deadlines or due dates	4.12	0.95	4.08	0.95	94	0.56	93	0.574
Follow directions completely	4.35	0.65	4.45	0.66	95	1.42	94	0.158
Comfort asking questions in class	2.46	1.15	2.26	1.18	94	1.30	93	0.197
Comfort speaking with instructor outside of class	2.16	1.09	2.06	1.02	94	0.67	93	0.504
Arrive to class on time	4.44	0.63	4.42	0.66	93	0.29	92	0.775
Interaction with differences in college	4.02	1.04	4.32	0.98	94	2.71	93	0.008**
Interaction with differences outside of college	4.11	1.07	4.19	0.97	95	0.86	94	0.391

**significant at p=<.01

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

4. Discussion

4.1 Findings

In general, there were no differences in the means of the four colleges on either the pre- or the post-test items. Again, it may not be surprising that there were so few between-college differences, given the similarities of the four diverse, urban community colleges. There were no significant differences between the means scores of service-learners and non-service-learners on the pre-tests for either the community engagement or academic items, which we would expect based on previous studies of service-learning in community colleges. In general, the service-learners had higher post-test mean scores than non-service-learners, which we would also expect. The most troubling finding would be the

few significant differences between the pre and post-test scores of the service-learners specifically.

While few of the findings were significant, there might be several explanations. First, there are limitations to the study, which are discussed below. But more importantly, we could argue that the lack of significant findings actually supports the argument presented earlier – that urban community colleges are vastly different from suburban and rural community colleges, and service-learning approaches should reflect those differences. Perhaps this is an initial indication that we need to conduct more research into all aspects of service-learning in urban community colleges: how faculty are introduced to, and trained for, service-learning: how students are introduced to service-learning; how service-learning is integrated into the curriculum; faculty support; student support; how we measure outcomes; and institutionalization of service-learning. If urban community colleges and their student populations are different, shouldn't we explore how service-learning should be different?

4.2 Limitations

Caution should be used in interpreting the lack of significant findings, as there were challenges to the study. First, as mentioned earlier, the four colleges were at vastly different stages in the development or institutionalization of service-learning on their respective campuses. Second, the courses at the colleges had very different enrollment: for example, at BMCC one course was a required course for a specific major, and it had approximately a dozen students enrolled, while another course was an introductory sociology course with a full roster of 35 students.

There are other issues that may have had an impact on the results as well. For example, the elimination of one age category reduced the sample size, and the lack of sufficient control groups likely impacted the results. There might also be some concern over the reverse ordered questions on the questionnaire, and the instrument was rather lengthy. Not all students completed the both the pre- and post-tests because the tests were administered in class and didn't allow for absent students. Also, the inclusion of other demographic variables such as job and parental status might be helpful.

5. Conclusion

Academic service-learning can be effective in student learning outcomes and community engagement; it can have a positive impact on underserved populations and be successfully implemented at all community colleges. As discussed earlier, there are studies that show positive outcomes of all the above. It is important to recognize the differences in urban community colleges specifically and create service-learning programs that meet the needs of these unique community colleges. This study was conducted with a small seed grant that was intended for an initial exploratory study; the hope would be to find more funding to support a larger research project, using the results (and concerns noted) of this study as a guide. Improving the instrument, recruiting and training faculty on each campus, identifying incentives for faculty with large teaching loads, and continuing efforts to institutionalize service-learning on all participating campuses would likely impact the outcomes noted in this study.

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