ABSTRACT

Service-learning in graduate education is commonly used but has limited studies on its effectiveness. Can service-learning be implemented in graduate education in a way that enhances the experience for the students? Most service-learning research has focused on service-learning at an undergraduate level in nursing, social work, public health, and occupational health (Lu & Lambright, 2010). This study replicates Lu and Lambright's study with Doctor of Physical Therapy program students to expand research on the impact of service-learning experiences on professional skills in graduate students. Our findings suggest *how integrated the project was into the curriculum* and *how much influence students have over how their project progressed* was significant and positively associated with improved professional skills.

Service-Learning Effectiveness at Improving Doctor of Physical Therapy Students' Professional Skills

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Background

Does service-learning (SL) make a difference in graduate education? How can SL be implemented in graduate education in a way that enhances the experience for the students? Lu and Lambright (2010) reported that most service-learning research has focused on undergraduates even though the use of SL has increased in graduate programs throughout the country. They designed a survey to understand the factors influencing the effectiveness of service-learning projects (SLPs) at improving MPA students' professional skills (PS). Lu and Lambright recognized research studies on this topic were focused primarily on undergraduate students and wanted to examine whether the characteristics that make SLPs effective for graduate students are different (2010).

The original study created a professional skills index (PSI), which is an index score using the factor score of the five professional skill outcomes only: (1) ability to work with people more effectively, (2) improved problem solving skills, (3)

improved oral communication skills, (4) improved written communication skills, and (5) development of leadership skills (2010), was used to assess professional skill development. This study used all fourteen skills included in the survey. The scale reliability score for this study is 0.902.

SLPs are used in doctor of physical therapy (DPT) programs across the country to enhance the community impact and leadership skill of graduates so they can meet the mission of the American Physical Therapy Associations Mission of, "Building a community that advances the profession of physical therapy to improve the health of society" (2018). Levkoe et al. (2014) contend that SL is an underutilized pedagogical tool and it helps with the assessment and analysis of the course and contributions to student learning, professional development, and community engagement. Alston et al. (2016) suggested SLPs should be required for future educators earning credentials for the teaching, development, evaluation, and administration of adult learning programs.

Limited research has been performed with SLP experiences regarding its implementation. Menamin et al. (2014) discussed that current published literature appears weak and diverse in nature and has not yielded compelling evidence about the impacts of SL on student learning outcomes. This raises the question about the value DPT students are receiving from their efforts while participating in SL curricular activities.

Research in undergraduate and graduate students have had positive conclusions about the use or SLPs in the curriculum. Undergraduate studies have demonstrated that SL promote social growth, increase self-efficacy, and helps provide culturally congruent care (Amerson, 2012), that students learn by feeling, belonging, placing action in a social perspective, and by sharing experiences with others (Márquez-García et al., 2020). Studies with graduate students have established that SL aided in meeting learning goals and higher overall satisfaction with the SL experience (Maccio, 2011), strengthened student efficacy for teaching, contributed to acquisition of varied teaching strategies and understanding of minority households (Meaney et al., 2012), improved understanding of older adults, lessened fear of working on behalf of older adults, have a better understanding of the older adults consumer desires (Segrist, 2013), SL can impart high-demand skills, transform how students move from knowledge into ideas and ultimately action, and offers opportunities for developing higher-order reasoning and critical thinking (Levkoe et al., 2014). Research about the benefits of SLPs as a curricular requirement in graduate DPT programs and how SL may impact PS may be useful to DPT programs or other graduate programs planning to add SLPs to their curriculum and the data may be valuable to improve current SL curricular effectiveness.

Methods

A replication study using a quantitative survey with graduate DPT students was conducted at a small liberal arts university in Lynchburg, Virginia to answer these questions.

Sample

The survey was administered to 89 DPT students. Two students were participants in a different type of SLP and three students did not complete the entire survey. A total of 84 students completed the survey, for a response rate of 94%. The data were analyzed with SPSS 26.

Service-Learning Projects

In the DPT program studied, SL is embedded throughout the curriculum as a curricular thread, not one specific course. Students choose their SLP from four options: Free PT Clinic, Special Olympics, Wheels on the James, and Girls on the Run. See Table 1.

Table 1

Description of Service-Learning Project

Project	Description of Service-Learning Project
Free PT Clinic	Provides pro bono physical therapy services to uninsured or underinsured individuals
Girls on the Run	Provide positive role models, education on self-esteem and physical fitness to elementary aged girls through running
Special Olympics	Provide year-round sports training and athletic competition in a variety of Olympic-type sports for children and adults with intellectual disabilities
Wheels on the James	Provide AmTryke therapeutic tricycles to individuals who are unable to ride traditional bikes

Research Question

Research questions were: 1) Will DPT student involvement in a SLP focusing on the factors that influence SL effectiveness improve student PSI? 2) If so, which factors were most important for improving the professional skills?

Hypotheses

Based on Lu and Lambright's study, two hypotheses were generated:

Hypothesis 1) Students who spend more than two hours per week outside of class working on SLP will have greater improvement in professional skills than those who spend fewer than two hours per week.

Hypothesis 2) Students who participate in SLPs as members of groups that work very much as teams will have greater improvement of professional skills than those who do not.

Further, based on the primary investigator's experience with DPT students and SLP, three additional hypotheses were generated:

Hypothesis 3) Students who spend a great deal of time discussing their projects in class will have greater improvement of professional skills than those who discuss their projects some time or less.

Hypothesis 4) Students whose SLPs are very well integrated into the course material will have greater improvement of professional skills than students whose projects are less integrated.

Hypothesis 5) Students who have a great deal of influence over how their projects progressed will have greater improvement of professional skills than students who had little influence.

Survey Instrument

The survey instrument in the study was adapted from the Lu and Lambright survey (2010) to be specific to a DPT program. The survey asked each student to identify the SLP in which they participated, followed by 21 questions. The instrument asks students using a 1-5 Likert scale to rate how helpful the SLP was at achieving 14 goals as summarized in Table 2. Several quantitative follow-up questions were asked using free response or scaled answers about how much or how little their SLP helped them master course material, improve problem-solving skills, understand community issues, and other potential goals of SL (2010). It also poses questions about the SLP as it relates to the course, both on a general and on a day-to-day level. Two questions are geared towards student's incorporation of group work and the final series of questions are

demographic in nature, including gender, age, undergraduate major, and previous experience with SL.

Professional skills identified by the survey are used daily by physical therapists and are included in the American Physical Therapy Association definition of a professional and in the Core Values of the Physical Therapist & Physical Therapist Assistant (2019).

Lu and Lambright (2010) found that "providing multiple points of engagement for students in SLP can enhance their professional skills". This would include more hours involved with the project outside of class, more time reflecting in class about the project, and more direct contact with beneficiaries of the project. Regression analysis demonstrated the model explained 37% of the variation in the professional skills index (PSI), see Table 2 for the PSI Score. Their findings suggested that future research focus on effective SL models for graduate students more generally (2010).

Setting specific modifications were made to the survey that Lu and Lambright administered to graduate Master of Public Administration (MPA) students. The word "course" was changed to "program" throughout the survey. Due to the limited number of students in the program who may self-identify as non-White, a demographic question about race was removed to maximize anonymity of the survey.

Data Collection and Analysis

Data were collected from two DPT cohorts after class time during the 11th week of the Fall semester. The DPT programs administrative assistants administered a brief pencil and paper survey about participation in one of the four SLPs to each student enrolled in the program. No instructors were present during the completion of the survey in order to protect the anonymity of the students completing the survey. See Appendix 1 for the Student Survey.

In questions one and three, students were asked to describe their SLP and suggest ways it could be improved. All other questions focused on how effective the SLP was at helping them achieve 14 PSI outcomes. These questions used a 1 to 5 Likert scale, 1 indicating the project was not helpful and 5 indicating the project was extremely helpful, to rate how helpful their chosen SLP was at achieving each outcome. In addition, several close-ended questions about the structure of the SLP were asked including: level of instructor guidance, in-class time for reflection, amount of time spent on the project outside of class, student influence over the direction of the project, and whether the project involved group activities. If students had participated in group activities, they were asked to assess how well their groups had worked as teams. Finally, the students were asked a series of demographic questions including gender, age, volunteer experience, past involvement with service-learning, concurrent involvement in other service-learning projects, work experience, and status as a full-time student.

Lu & Lambright created a PSI from five professional skill outcomes (2010). For a more comprehensive analysis, the researchers included all 14 professional skill outcomes from the survey in the PSI. Cronbach's Alpha for the PSI is 0.902, suggesting the items in the survey have a high internal consistency. Total item statistics demonstrate an overall reliability of the coefficient for the set of variables in the index. All items from the index were kept. Descriptive statistics for the PSI score and its

components are included in Table 2. Survey data were analyzed using both ANOVA and multiple regression. Level of significance is set at p≤.05.

Table 2

Descriptive Statistics for the Professional Skills Index Score and Its Components

Survey Item	Mean	Std. Deviation	N
Master material covered in curriculum	3.0119	1.37529	84
Tie together concepts in the curriculum	3.1310	1.38651	84
apply concepts covered in the curriculum to real situations	3.7381	1.29055	84
developed a deeper understanding of the material covered in the curriculum	3.2024	1.25899	84
developed a deeper understanding of material outside of the curriculum relevant in your graduate program	3.7619	1.07119	84
develop a better understanding of the role of public/nonprofit administration	4.1071	1.15140	84
learn to work with people more effectively	4.2143	.93230	84
improve my problem-solving skills	3.6190	1.22134	84
Improve my oral communication skills	3.9167	1.11083	84
improve my written communication skills	2.8333	1.40424	84
develop my leadership skills	3.7976	1.09522	84
feel more connected to my community	4.2857	.84414	84
develop a deeper understanding of the complex problems facing my community	3.8214	1.14240	84
Become more involved in volunteer activities	4.3810	.87681	84

*Cronbach's Alpha Based on Standardized Items is 0.902, N = 14.
Results

The relative descriptive statistics on the different SLP showed no significant trends in the means or the number of students who participated in SLP (n=84) indicating all groups can be compared to each other. Wheels on the James had the fewest participants (16) and Free PT Clinic the most participants (26).

Table 3 is the ANOVA analysis. Results indicate the chosen SLP, project integration into the curriculum, time spent in class, and student's influence on the project had significant impact on the PSI. As in Lu and Lambright's (2010) study, these investigations findings suggest that providing multiple points of engagement in SLPs is critical for improving students' professional skills. This finding identifies hypothesis 1 and 2 to be not significant and indicates hypotheses 3, 4, and 5 need further investigation.

Table 3

The Impact of Project Characteristics on Professional Skills

Project Characteristics	Professional Skills Effectiveness Index Score					
	Sum of Squares	df	Mean Square	F	Sig.	R Squared
SLP	14.507	4	3.637	8.163	.000	.292
Project Integration	11.782	2	5.891	12.846	.000	.243
Time in Class	3.684	2	1.842	3.250	.044	.074
Project Influence	7.385	2	3.693	7.084	.001	.149

ANOVA results show a small to moderate correlation between the different variables, R =.564 which represents a high degree of correlation R^2 = .318, indicating 31.8% of the DV can be explained by the model (p=0.000). Examination of the F ratio to predict if the model is a good fit for the data and if the independent variable predicts the dependent variable in a statistically significant way, $F(4,78)$ = 9.108, p< .05, which does indicate the model is a good fit for the data. The SLP students participated in, project integration into students learning, time in class, and student influence on the project all had a significant impact on the PSI.

Testing the statistical significance of the independent variables, the following reported to be significant: *service-learning project (t=-.739, p=.046), how integrated was the project into the material covered in the curriculum (t=3.542, p=.001), and how much influence did you have over how this project progressed (t=2.797, p=.006). How much time was spent in class* did not report to be significant at p<.05 level. In reviewing the collinearity of the variables, all reported tolerance values >.01, thus indicating there is not a problem of collinearity with the data set.

The Levene's Statistic reports at .201 value indicating there is Homogeneity of Variances as p>.05.

One-way ANOVA were conducted to determine if *service-learning project (SLP)* had an impact on the development of students' professional skills. SLP was statistically significant $F(2,83)=8.163$, $p=.000$, $R^2=.292$. The SLP were important in improving the PSI.

For hypothesis 3, One-way ANOVA to determine if *time spent in class discussing the project* had an impact on the development of students' professional skills was statistically significant $F(2,83)=3.250$, $p>.05$, $R^2=.044$.

Tukey's post-hoc analysis compared all possible combinations of group differences for *SLP* and the *time spent in class discussing the project*. The p-value for each group (little time, some, a great deal) reported above the $p\leq.05$ level, thus the differences between each group were not statistically significant.

For hypothesis 4, One-way ANOVA to determine *if integration of this project into the material covered in the curriculum* had an impact on the development of students' professional skills was statistically significant $F(2,80)=12.846$, $p=.000$, $R^2=.243$.

Tukey's post-hoc analysis reported the level of integration of the SLP into the curriculum in the categories of not at all integrated, somewhat integrated, very well integrated was statistically significant ($p\geq0.05$) for differences between groups. A majority of the students, 52%, responded that the project was somewhat or very well integrated with the curriculum.

For hypothesis 5, One-way ANOVA to determine if *student influence on the project* had an impact on the development of their professional skills was statistically significant $F(2,81)=7.084$, $p=.001$, $R^2=.149$.

Tukey's post-hoc analysis reported the level of influence students had on the project (a little, some, a great deal), one p-value was above the .05 level (some/a great deal = .445).

Table 4 represents Tukey's post-hoc analysis of the PSI compared to SLP. These results indicate that the Free PT Clinic had a significant and positive impact on the PSI when compared to Girls on the Run, Special Olympics, and Wheels on the James. No other significant relationships were demonstrated among SLPs. The Free PT Clinic has a different organizational and leadership structure compared to the other three SLP groups.

Table 4

Multiple Comparisons of Service-Learning Projects with Tukey HSD

Dependent Variable: Professional Skills Index Score				
(I) SLP	(J) SLP	Mean Difference (I-J)	Std. Error	Sig.
Free PT Clinic	Girls on the Run	1.0916	.20437	.000
	Special Olympics	.7550	.19308	.002
	Wheels on the James	.6377	.21179	.028

Table 5 represents the regression analysis of the data. The model explains 35.8% of the variation in our PSI. This is not consistent with our ANOVA findings. The regression analysis demonstrated two of the four variables, Service-Learning Project and Time in Class are no longer significant. *How integrated was this project into the curriculum* and *how much influence did you have over how this project progressed* continued to be significant and positively associated with improvements of professional skills, with Betas of .394 and .364, respectively. Analysis demonstrated no issues with multicollinearity.

Table 5

Coefficient Regression of Professional Skills Index

Model	Unstd. Coefficients		Std. Coefficients	t	Sig.
	B	Std. Error	Beta		
Service-Learning Project	-.055	.073	-.086	-.758	.451
How integrated was this project to material covered in the curriculum	.435	.135	.394	3.217	.002
How much time in class was spent discussing this project	-.050	.171	-.036	-.290	.772
How much influence did you have over how this project progressed	.394	.146	.364	2.701	.009

Post-hoc test in Table 5 indicated that there is a significant positive impact of the Free PT Clinic on the index compared to the other three SLPs. This impact is not represented in Table 6, therefore, Free PT Clinic was isolated as its own independent variable and examined in the regression. Table 6 highlights the significant positive association the Free PT Clinic had on perceived improvement in professional skills. This model improves our explanation of variance in the PSI to 45.9%.

Table 6

Association of the Free PT Clinic on perceived Improvement in Professional Skills Development

Model	Unstd. Coefficients		Std. Coefficients	t	Sig.
	B	Std. Error	Beta		
Free Clinic	.446	.196	.271	2.270	.027
How integrated was this project of material covered in the curriculum	.331	.140	.299	2.357	.021
How much time in class was spent discussing this project	.025	.162	.018	.152	.879
How much influence did you have over how this project progressed	.387	.137	.358	2.818	.006

Discussion

This study examined the factors that influence the effectiveness of SLP at improving DPT students' professional skills. The specific SLP, how integrated the project was into the curriculum, how much influence the student had over how this project progressed, and how much time in class was spent on discussing this project all had positive impacts on the PSI. In addition, our ANOVA analysis, as in Lu and Lambright's (2010) study, suggested that providing multiple points of engagement in SLPs is critical for improving students' professional skills.

The first two hypotheses derived from the Lu and Lambright study were not significant in this study.

Hypothesis 1) Students who spend more than two hours per week outside of class working on SLP will have greater improvement in professional skills than those who spend fewer than two hours per week – not significant.

Hypothesis 2) Students who participate in SLPs as members of groups that work very much as teams will have greater improvement of professional skills than those who do not – not significant.

The three hypotheses created by the researchers were found to be significant.

Hypothesis 3) Students who spend a great deal of time discussing their projects in class will have greater improvement of professional skills than those who discuss their projects some time or less.

Hypothesis 4) Students whose SLPs are very well integrated into the course material will have greater improvement of professional skills than students whose projects are less integrated.

Hypothesis 5) Students who have a great deal of influence over how their projects progressed will have greater improvement of professional skills than students who had little influence.

The PSI examined the influence of each SLPs impact on students' professional skills and indicate the Free PT Clinic had a significant and positive impact on the PSI when compared to Girls on the Run, Special Olympics, and Wheels on the James. This finding suggests how the instructors designed the Free PT Clinic matters in developing students' professional skills. SLPs can be time and labor intensive for students and faculty members, yet, our findings suggest if SLPs are an important part of a DPT programs curriculum, then students may be inclined to spend time on projects that are designed to develop specific DPT program competencies and professional skills that will enhance student practice.

The regression analysis explained 37% of the variation in our PSI, yet it is not consistent with our ANOVA. ANOVA demonstrates two of the four variables, Service-Learning Project and Time in Class, were no longer as significant. However, how integrated the project was into the curriculum and how much influence students have over how their project progressed continued to be significant, and positively associated with improved professional skills. This suggests that DPT programs/instructors looking to use service-learning as a platform to improve their students' professional skills should be encouraged to find projects that involve a significant amount of meaningful work outside of the classroom, be specifically aligned with curriculum and program goals, and be flexible enough to enable students to gain ownership of their learning.

Our findings suggest how effectively SLPs are designed, student influence on SLPs, and their alignment with program curriculum can improve DPT students' professional skills. Results also suggest that service-learning seems to be an excellent addition to the curriculum for helping DPT students develop professional skills.

For DPT students to benefit from this pedagogical tool, program faculty should consider SLP design that allows students to influence the SLP they in which they choose to participate, how the SLP is to be implemented in the community, and that the projects should align with the curriculum or program requirements. This may enhance a student's perception of value for time spent and prove more beneficial as a teaching model for development of engaged and productive community leaders when they are practicing professionals.

In the DPT program all four SLP are now designed similarly to the Free PT Clinic relative to the findings in this study. Each SLP is student lead with a faculty to mentor the leadership of the SLP, versus the faculty member leading the group. The students have autonomy to organize the SLP governance structure the way that they feel is best. Each group has created leadership roles the focus on a mentoring style of leadership that allows for succession planning and institutional memory to be preserved. The organizations vary in structure, but generally have 2 directors, a secretary, treasurer, marketing, social media, fundraising, and other committee chairs as required for proper functioning of the SLP. The level of success the SLP groups have is strongly controlled by the students. The hours of operation of the Free PT Clinic are determined by the students, the events created by or participated in by the groups is decided by each SLP group and its members.

The role of the faculty member is to mentor the leadership of the SLP on how to manage the group, engage with community partners, design programs, organize and lead event planning and booth creation when participating in community events, and to be a conduit between university and community partners. Improving efficiency of leadership enables the students to focus on helping the community and spend less time breaking down university administrative barriers.

The graduate DPT students truly enjoy the participation in the SLP groups. They see the SLP as a way to leave a legacy for the DPT program and for the community. After graduation many of them continue to engaged with the groups to provide assistance and connections for their SLP groups. Students taking active control of the groups improves salience of the SLP and improves the connections between SLP, curricular content, and professional practice. Seeing their efforts provide real benefits to the community provides value for time spent working in the groups and keeps them engaged and excited to grow the SLP each year.

Given the modest sample size, replicating this study in other settings would be helpful in supporting the accuracy of our findings. This study has implications for future SL research in DPT and other graduate programs. By recognizing the unique context of SLPs in developing professional skills, future research can help instructors capitalize on the effectiveness of this pedagogical tool. The challenges lie with instructors using a SLP effectively to provide students with opportunities for positive outcomes that help them develop their professional skills.

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About the Authors

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Stephen W. Elam is an Associate Professor at the University of Lynchburg in Lynchburg, Virginia. He earned his Bachelors in Biology at the College of St. Scholastica in Duluth, MN in 1994. He then pursued a Master of Physical Therapy at the University of St. Augustine in St. Augustine, Florida and graduated in 1996 and earned a tDPT in 2011. He practiced in physical therapy in a variety of settings until 2011 when he joined the faculty at the University of Lynchburg. After that he earned an ABPTS board certification in Geriatrics in 2012, and in Orthopedics in 2013. In 2016, he completed a Doctor of Education in Educational Leadership. He currently continues to teach at the University of Lynchburg as Associate Professor in the Doctor of Physical Therapy Program. He can be reached at elam.s@lynchburg.edu.

Alexis Ehrhardt

Alexis brings significant experience working with government officials and has served as President and CEO of the Danville Pittsylvania Chamber of Commerce since January 2018. In this role, she has advocated on behalf of more than 500 members on a wide array of policy issues and led the Chamber's Legislative Committee in developing a legislative agenda that they present annually to state officials prior to the General Assembly session. She has served on the Tobacco Region Revitalization Commission and on the Secretary of Commerce and Trade's committee on paid family and medical leave. In her work with the Tobacco Commission, Alexis chaired the strategic planning committee and advocated for specific projects with an eye toward long-term transformational efforts for southern and southwest Virginia.

Alexis also has experience in higher education and secondary education. Prior to leading the Chamber, she served in several roles at Averett University in Danville including as executive director of the Center for Community Engagement and Career Competitiveness, director of academic partnerships, and assistant for academic affairs. She also worked at Danville Community College, the Institute for Advanced Learning and Research in Danville, as an independent college counselor, and in admission and financial aid at Chatham Hall.

After graduating magna cum laude from Emory University, Alexis earned her Master of Education degree from UVA's School of Education and Human Development, focusing on higher education. She earned her Doctor of Education degree from the University of Lynchburg, where she focused on leadership studies.

Patrick Shuler

Patrick is the Administrator for the new Jones and Cabacoy Veteran Care Center in Virginia Beach, Virginia. He has been working in healthcare leadership in the Hampton Roads area for the past 9 years. During that time, he successfully led three high performing Skilled Nursing Facilities in Virginia Beach and Chesapeake. Before transitioning careers, Patrick worked in public education as a teacher, administrator, and coach. He has completed a Master degree in Leadership from Virginia Tech and a Doctor of Education in Educational Leadership at the University of Lynchburg. Although not a veteran himself, Dr. Shuler comes from a vary patriotic family as the grandson of Donald E. Shuler, a decorated Rear Admiral in the Navy, and brother of Andrew D. Shuler who was Combat Controller in the Air Force Special Forces.

James Rinella

Dr. James Rinella serves as a distinguished educator within the Campbell County Schools in Virginia, where he has dedicated his career to fostering an environment of excellence and innovation in education. With a strong background in educational leadership as a graduate of the University of Lynchburg Doctor of Education, and a deep commitment to student success, Dr. Rinella has played a pivotal role in developing and implementing programs that enhance learning outcomes and prepare students for future challenges. His leadership style, characterized by collaborative decision-making and a focus on evidence-based practices, has significantly contributed to the advancement of the school district. Dr. Rinella's contributions extend beyond administrative duties, as he actively engages with the community and stakeholders to ensure that the educational needs of all students are met, making him a respected figure in the field of education within Virginia.

Appendices

Appendix 1

<div align="center">Student Survey – Service-Learning</div>

<u>Service-Learning Project (circle the one in which you participate):</u>

Free PT Clinic

Special Olympics

Wheels on the James

Girls on the Run

<u>Cohort</u>:   A   B   C

1)   Describe the service-learning project for this course in two to three sentences.

2)   On a scale of 1 to 5, please rate how helpful the service-learning project in this course was at achieving the following goals: 1 = project was not helpful 5 = project was extremely helpful

master material covered in the curriculum	1	2	3	4	5
tie together concepts covered in the curriculum	1	2	3	4	5
apply concepts covered the curriculum to real situations	1	2	3	4	5
develop a deeper understanding of the material covered in the curriculum	1	2	3	4	5
develop a deeper understanding of material outside of the curriculum relevant in your graduate program	1	2	3	4	5

develop a better understanding of the role of public/nonprofit administration	1	2	3	4	5
learn to work with people more effectively	1	2	3	4	5
improve my problem-solving skills	1	2	3	4	5
improve my oral communication skills	1	2	3	4	5
improve my written communication skills	1	2	3	4	5
develop my leadership skills	1	2	3	4	5
feel more connected to my community	1	2	3	4	5
develop a deeper understanding of the complex problems facing my community	1	2	3	4	5
become more involved in volunteer activities	1	2	3	4	5

3)   How could this service-learning project be improved? (Free Response)

4)   How much guidance did the instructor provide on this project?

    O a little guidance
    O some guidance
    O a great deal of guidance

5)   How integrated was this project into the material covered in the curriculum?

    O not at all integrated
    O somewhat integrated
    O very well integrated

6)   How much time *in class* was spent discussing this project?

    O a little time
    O some time
    O a great deal of time

7)   On average, how many hours per week did you spend working on this project outside of class?

O less than 2 hours
O 2–5 hours
O more than 5 hours

8)   How much influence did you have over how this project progressed?

O a little influence
O some influence
O a great deal of influence

9)   Are you currently participating in a major service-learning project for another class you are taking this semester?

O yes

O no

10)   If you answered yes to question #9, how much has the work you have done on the service-learning project in this class helped you with the service-learning project?

O not at all
O somewhat
O a great deal

Only answer questions 11 and 12 if you took part in group activities as part of the service-learning project for this course.

11)   How many members were in your group?

12)   How well did your group work as a team?

O not at all like a team
O somewhat like a team
O very much like a team

Background Information

13) Gender: O male O female

14) Age: O 21–29   O 30–39   O 40–49   O 50 or older

15) Race/Ethnicity

16) Are you a domestic or international student?

O domestic   O international

17) What was your undergraduate major?

18) What is your graduate student status?

  O full-time O part-time

19) How many years of public and/or non-profit administration paid work experience do you have?

  O None
  O 3 years or less
  O 4–5 years
  O More than 5 years

20) Prior to this semester, how involved were you in volunteer activities?

  O not at all involved
  O somewhat involved
  O very involved

21) Prior to this semester, how many major service-learning projects had you participated in as an undergraduate and/or graduate school student?

  O 0 O 1 O 2 O 3 O more than 3