

*What Impacts the Learning in Service Learning?
An Examination of Project Structure and Student Characteristics*

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ABSTRACT

This paper examines factors that can influence how effective a service-learning project is at achieving learning objectives. It is based on data collected from seven Master's of Public Administration (MPA) courses taught during one semester at a large state university. We find that the key factors of influence on how effective a service-learning project is at achieving learning objectives are (a) the extent that the project is integrated with class materials, (b) whether or not students work in groups, and (c) whether or not the participating students are full-time.

WHAT IMPACTS THE LEARNING IN SERVICE LEARNING?

Service learning is an important pedagogical tool that is widely used in both graduate and undergraduate classrooms (Anderson & Harris, 2005; Fredericksen, 2000; Gallini & Moely, 2003; Litke, 2002; Strage, 2000; Wells, 2006). It improves understanding of course content (Bringle & Hatcher, 1996; Bushouse & Morrison, 2001; Reinke, 2003), and offers students an opportunity to apply the lessons being learned in the classroom to a real-life setting (Bushouse & Morrison, 2001; Druker, Stefanovic, & Cunningham, 1996; Jelier & Clarke, 1999; Parker-Gwin & Mabry, 1998). Despite its importance as a pedagogical tool, there is no standard definition of service learning (Eyler, 2000). Drawing on Simons and Cleary (2006), a service-learning project for the purposes of this study is defined as a course project that (a) lasts at least a half a semester, (b) allows students to apply course concepts to real-life situations, and (c) benefits both students and community members. Because service learning has been used in a variety of contexts in MPA classrooms (Bushouse & Morrison, 2001; Campbell & Tatro, 1998; Denhardt, 1997; Dicke, Dowden, & Torres, 2004; Druker, et al., 1996; Reinke, 2003), it raises this interesting

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question: What impacts the learning in service learning?

This paper examines the factors that influence how effective a service-learning project is in terms of achieving learning objectives. Its research questions focus on two broad sets of factors that potentially influence educational outcomes. The first focus is the structure of the service-learning project, which addresses this question: Are certain structures used for organizing service-learning projects more effective at achieving learning objectives than other structures? As a second focus, this paper examines the relationship between student characteristics and educational outcomes of service-learning projects, which addresses this question: Do certain groups of students learn more from participating in service-learning projects than other groups of students do? This study is based on data collected from seven MPA courses taught during one semester at a large state university. Students in all of these classes were required to participate in a service-learning project.

There has been little empirical research in higher education to determine which factors influence the effectiveness of service-learning projects in terms of achieving learning objectives. Most of the limited, empirical research tends to focus on a few aspects of either (a) project structure, or (b) students' characteristics on service-learning outcomes. This makes it difficult to develop a complete picture of the variety of factors that may influence educational outcomes for service-learning projects. Another weakness in this body of research is that it focuses almost exclusively on undergraduates.

To fill these gaps, this study examines the wide-ranging impact of both project structure variables and student characteristics on educational outcomes for graduate students. It provides a greater understanding of which student characteristics impact the effectiveness of service-learning projects, and it highlights potential differences in classroom learning experiences for various types of students. This project also suggests ways that educators can structure service-learning projects in order to improve educational outcomes. This information will be particularly useful for public administration programs, as well as other graduate programs that rely on service learning as an important pedagogical tool.

FACTORS INFLUENCING THE EDUCATIONAL OUTCOMES OF SERVICE LEARNING

This section begins by summarizing the findings of past empirical research, which compares the effectiveness of service-learning and non-service-learning experiences in achieving different pedagogical objectives. Next, several factors that are likely to impact the educational outcomes of service learning are identified, and their hypothesized impact on educational outcomes is discussed. Following this are details of the past empirical findings on factors that influence the effectiveness of service-learning projects, in terms of achieving learning objectives. Finally, gaps in this body of literature are highlighted, including the observation that the vast majority of empirical research has focused on

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undergraduate students.

Past empirical research that compares service-learning and non-service-learning experiences indicates that service learning generally has a positive — and at the very least neutral — impact on learning outcomes. Scholars have approached this topic from a variety of angles. Several researchers have used self-reports to evaluate the impact of service learning on academic achievement, and find that service learning positively influences academic achievement (Gallini & Moely, 2003; Hesser, 1995; Kendrick, 1996; Markus, Howard, & King, 1993). Researchers also have assessed the impact of service learning by using more direct measures of classroom outcomes. The conclusions of this body of research have been more mixed than the research based on self-reports, and they indicate that service learning has either a positive or neutral impact on academic achievement (Batchelder & Root, 1994; Eyler & Giles, 1999; Fredericksen, 2000; Kendrick, 1996; Markus, Howard, & King, 1993; Strage, 2000).

While there is a general consensus that service learning has a generally positive — and at the very least neutral — impact, it is less clear which factors influence its educational impact. For example, certain structures for organizing service learning may be more effective than others. Instructors who (a) play active roles in service-learning projects, (b) closely integrate projects with course material, and (c) structure regular reflection about the service-learning experience into class time may enhance educational outcomes. By playing an active role in service-learning projects, instructors may facilitate the process for students to make critical connections, and to apply lessons learned in other classroom contexts. Integration and reflection provide students with the cognitive guidance necessary to generalize the meaning and skill-acquisition of their personal experiences to broader contexts (Conrad & Hedin, 1982; Mabry, 1998), and also encourage them to see service learning as “academic material,” rather than as training or as professional socialization (Mabry, 1998; Parker-Gwin & Mabry, 1998). In addition, regular intervals of structured reflection may be important, because it establishes a routine for students, and because its cognitive components stimulate academic learning where the service component alone might not (Hatcher et al., 2004).

Other aspects of project structure also may influence educational outcomes. Providing more opportunities for students to interact with service beneficiaries and increasing the duration or intensity of the service-learning experience may have a positive impact, by expanding the amount of learning “material” that students are exposed to (Conrad & Hedin, 1982; Mabry, 1998). Another aspect of project structure that may be important is student autonomy. Giving students influence over the direction of a service-learning project may help create a sense of accountability among students, and may motivate them to work harder, thereby improving educational outcomes. On the other hand, making service learning mandatory may negatively impact educational outcomes. Students who

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are required to take a service-learning class may be less enthusiastic about it, and be less motivated to work hard on their service projects, when compared to students who choose to take a service-learning course. As a final aspect of project structure, whether or not students work in groups also may impact educational outcomes. Structuring service learning as a group project may increase student perceptions of accountability (Barron, et al., 1998) and logically could be expected to expose participants to a greater diversity of perspectives. On the other hand, individual projects might be more effective for achieving learning objectives, because students are not distracted by difficult group dynamics, such as problems with free-riders.

In addition to project structure influencing the educational outcomes of service learning, a student's characteristics may impact how much is learned from participating in a service-learning project. For instance, gender and race can impact a variety of interactions in the classroom, and may influence students' experiences with service learning (Warren, 1998). There is some evidence suggesting that females and students with prior volunteer experience are more likely to participate in service-learning projects (Parker-Gwin & Mabry, 1998; Sax & Astin, 1997). Given this, one also might expect that these groups would show more academic gain from participating in service learning. Another student characteristic that may be important is past service-learning experience. Students with more of this experience may be better able to handle the uncertainty associated with service learning (Jelier & Clarke, 1999), and gain more from this pedagogical tool. Alternatively, it is possible that students with considerable service-learning experience may feel "burned-out," due to its labor- and time-intensive nature, and show less academic gain.

Finally — although it is not theorized in literature on service learning — two student characteristics that are particularly relevant to graduate programs also may influence educational outcomes: (a) whether a student has past work experience and (b) whether a student is full-time or part-time. One might expect that students with past work experience would benefit more academically from service learning, because they may be more skilled in linking theory to practice. One also might expect full-time graduate students to gain more from service learning because they tend to have fewer commitments outside of the classroom. It may be more difficult for part-time students to devote enough time to service learning to receive its full benefits.

The remainder of this section summarizes the limited empirical research that examines factors influencing the effectiveness of service learning projects in terms of achieving learning objectives, and it also highlights gaps in this body of literature. Reflection is the one factor that has considerable empirical research to show its positive impact on the educational outcomes of service learning. Hatcher, et al. (2004) find a positive relationship between course quality and the use of reflection activities that are structured, regularly scheduled, and that

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allow for clarification of values. In a survey of undergraduate students, Parker-Gwin and Mabry (1998) report that reflection activities can deepen interest in service-learning course content. In addition, Eyler & Giles (1999) present national survey data — collected primarily from undergraduates — and find a consistent link between academic learning outcomes and the quantity and quality of reflection. Other studies specifically have focused on in-class reflection, and present evidence suggesting that it improves educational outcomes (Batchelder & Root, 1994; Conrad & Hedin, 1982; Mabry, 1998).

More-limited empirical research exists on other potentially important aspects of project structure. A few studies have examined the educational impact of closely integrating a service-learning project with course material, and report a positive relationship. Based on interviews with 57 students from six colleges, Eyler & Giles (1999) found that those who took classes where service learning was well-integrated, also demonstrated a greater ability to understand and apply knowledge — when compared to students who took courses where there was no service learning, or where service learning was not well-integrated. Eyler and Giles' measure of integration is in part based on the frequency of reflection opportunities. According to their study, service learning is well-integrated into a class when the service experience is closely connected to course activities, and when students have frequent opportunities to reflect on the connection between the service experience and course material. Similarly, Hatcher, Bringle, and Muthiah (2004) — in their study of 471 undergraduates from nine colleges — report that the integration of academic content with the service experience is positively related to course quality.

There also is limited empirical evidence that suggests a positive relationship between the amount of time spent on service learning and its educational outcomes. Conrad and Hedin (1982) found that experiential education experiences lasting for at least a semester, plus those that were more time-intensive, were associated with better outcomes in a study of 27 experiential education programs for youths ages 12 to 19. Consistent with this, Mabry (1998) conclude that service hours are positively associated with academic learning — based on survey data collected from 144 undergraduate students.

A handful of studies have examined other aspects of project structure. Mabry (1998) reported that there is a positive relationship between student contact with service beneficiaries and academic learning. Batchelder and Root (1994) create a combined measure of service-learning instructional quality that is based on (a) the level of student autonomy, (b) the extent of in-class reflection on service-learning experiences, and (c) the level of instructor support. They found that service-learning instructional quality is positively related to some measures of cognitive and pro-social cognitive outcomes. Finally, Parker-Gwin and Mabry (1998) conclude that required participation does not have a consistent positive or negative impact on educational outcomes for service learners.

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Empirical research assessing the impact of student characteristics on the educational outcomes of service learning also is limited. A few scholars have examined the impact of gender, but report conflicting findings. Eyler and Giles (1999) report that females are more likely than males to believe that service learning helped them (a) develop an understanding of complex issues, (b) gain knowledge about the work of specific agencies, and (c) see issues in new ways. Ropers-Huilman, Carwile, and Lima (2005) reach similar conclusions, and find that females in an undergraduate biological engineering course are more likely than their male counterparts to report that their service-learning experience positively impacted their learning outcomes. On the other hand, Fredericksen (2000) compares course performance for service and non-service learners, and finds that service learning is associated with higher grades on both the second and final exams of a course for males only. Similarly, Mabry (1998) finds that males are more likely than females to believe they academically benefit from service-learning experiences.

Race is another characteristic that has been considered by researchers as a potential influence on the academic benefits received by participating in service-learning projects. But findings from these studies have been mixed. Ropers-Huilman, et al. (2005) report that non-white students are more likely than white students to say that service learning improved their learning outcomes. Consistent with Ropers-Huilman, et al. (2005), Scales, Roehlkepartain, Neal, Kielsmeier, and Benson (2006) found that principals of high-poverty, urban, and majority non-white middle and high schools were more likely to describe service learning as having a very positive impact on student attendance, engagement and academic achievement. On the other hand, Eyler and Giles (1999) report that white students are more likely than non-white students to believe that service learning helped them understand and apply academic material. Mabry (1998) concludes that there is no difference between reports by whites and non-whites regarding the academic benefits they receive from service learning.

A few studies have examined the impact of yet more student characteristics. Mabry (1998) found that the frequency of past volunteer work does not influence the academic benefits that students say they receive from service learning. Eyler and Giles (1999) reach similar conclusions, and report that involvement in other community service activities does not impact students' perceptions of the academic benefits of service learning. In addition, there is limited evidence that past work experience may influence the educational outcomes of service learning. The sole empirical study in this review that was based on data collected primarily from graduate students (Bushouse & Morrison, 2001) reports that only students with prior professional experience found that service-learning reflection assignments helped them make linkages between course material and practice. (See *Table 1.*)

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Table 1.
Empirical Research on Factors Influencing Service Learning's Educational Impact

	Research Focused on Undergraduate Students	Research Focused on Graduate Students
Project Structure		
Reflection	Batchelder & Root (1994); Conrad & Hedin (1982); Eyler & Giles (1999); Hatcher et al. (2004); Mabry (1998); Parker-Gwin & Mabry (1998)	
Integration	Eyler & Giles (1999); Hatcher et al.(2004)	
Time Spent on Service Learning	Conrad & Hedin (1982); Mabry (1998)	
Contact with Service Beneficiaries	Mabry (1998)	
Instructor Guidance	Batchelder & Root (1994)	
Student Influence	Batchelder & Root (1994)	
Required Service Participation	Parker-Gwin & Mabry (1998)	
Group/Individual Project		
Student Characteristics		
Gender	Eyler & Giles (1999); Fredericksen (2000); Mabry (1998); Ropers-Huilman et al. (2005)	
Race	Eyler & Giles (1999); Mabry (1998); Ropers-Huilman et al. (2005); Scales, et al. (2006)	
Work Experience		Bushouse & Morrison (2001)
Volunteer Experience	Eyler & Giles (1999); Mabry (1998)	
Full-time/Part-time Student		

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As summarized by Table 1, the existing body of research on the different factors that influence the educational outcomes of service learning is fragmented. With the exception of Mabry (1998) and Eyler & Giles (1999), these studies tend to focus on the impact of just a few aspects of how either project structure or students' characteristics affect service-learning outcomes. By contrast, some potentially important aspects of project structure and student characteristics identified by this paper have received no attention in prior empirical research. The subsequent analysis attempts to address this gap in the literature and present a more complete picture of the impact that a variety of factors have on the educational outcomes for service-learning projects.

METHODOLOGY

This study is based on data collected from seven MPA courses taught during the Spring 2007 semester at a large state university. Service-learning projects were conducted as part of each course. Table 2 briefly describes these service-learning projects. (See Table 2.)

At the end of the semester, students who enrolled in each of these seven courses were asked to complete a brief survey about their service-learning project. Some students were enrolled in more than one of these courses. These students were asked to complete a separate survey for each service-learning project in which they had participated. The surveys were completed during

Table 2.
Service Learning Project Description

Course	Service Learning Project Description
Administrative Law	Students researched legal aspects of inter-municipal services arrangements, focusing on New York.
Capstone Seminar	Students researched and analyzed an organization problem and made recommendations to address it.
Evaluation	Students designed an evaluation plan for a university scholarship program.
Logic of Inquiry	Students conducted a survey and analyzed data from the survey for the local public transportation agency.
Proposal Preparation/ Grant Management	Students wrote grant proposals for local community groups.
Public Management/Public Administration	Students conducted assessments of a university public information technology system and prepared requests for proposals based on those assessments.
Public and Nonprofit Finance	Students examined the feasibility of consolidating four service areas for a local county government.

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classroom time. The survey administrator and instructor left the classroom while students completed the survey, in order to protect the anonymity of those participating in the study. Of the 88 students enrolled in each of these classes, 78 completed our survey, representing a response rate of 88.6 percent.

The student survey can be found in the Appendix and includes both open- and close-ended questions. In the open-ended question section, students were asked to describe the service-learning project and suggest ways that they felt the project could be improved. As part of the close-ended questions, students were asked to rate the helpfulness of the service learning project toward achieving a variety of goals, which included (a) mastering course material, (b) tying together course concepts, (c) applying course concepts to real situations, (d) developing a deeper understanding of course material, and (e) developing a deeper understanding of material outside the course, but still relevant to their graduate program. In addition, the survey asked several close-ended questions about the structure of the service-learning project. Topics included questions on instructor guidance, project integration with course material, in-class time for reflection, the amount of time spent on the project, the student's influence over the direction of the project, and whether the project involved group activities. (See Appendix.) If students participated in group activities, they were asked to assess how well their group worked as a team. Finally, the students were asked a series of questions about their backgrounds, including their gender, race, volunteer experience, service-learning experience, work experience, and status as full-time students.

Instructors teaching each of the seven courses included in this study also were asked to complete a brief survey about the service-learning project. The instructor survey primarily included questions on project structure. Instructors also were asked to describe the service-learning project. In addition, they were asked close-ended questions about (a) the number of different service-learning projects that were conducted as part of the course¹, (b) the level of contact students had with service beneficiaries, (c) who selected the topic of the service-learning project, and (d) whether the major activities and graded assignments involved group and/or individual work. If the project involved group work, the instructors then were asked who determined group composition. Finally, instructors were asked if the course was required or an elective in the MPA program.

Survey data were analyzed by using Analysis of Variance (ANOVA) and multiple regression. For this analysis, we created an index score that is intended to measure students' perceptions of how effective a service-learning project is for achieving several educational goals. This index score is based on the sum of scores for five educational outcome measures: (a) mastering course material, (b) tying together course concepts, (c) applying course concepts to real situations, (d) developing a deeper understanding of course material, and (e) developing a deeper understanding of material outside of the course that is relevant to the graduate program. With each of these outcome measures, students were asked to

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Table 3.
Descriptive Statistics: The Educational Effectiveness Index Score and Its Components

Components of the Index	Obs.	Mean	Std. Dev.	Min	Max
Mastery of Course Material	79	3.58	1.15	1	5
Linkage of Course Concepts	79	3.86	1.07	1	5
Application of Course Concepts to Real Situations	79	4.09	0.95	1	5
Development of a Deeper Understanding of Course Material	78	3.83	1.10	1	5
Development of a Deeper Understanding of Material Outside of the Course Relevant to the Graduate Program	79	4.08	0.93	1	5
Educational Effectiveness Index Score	77	19.45	4.58	7*	25

Note. *The reason the minimum value listed for the index is a 7 rather than a 5 is because no survey respondent actually selected a 1 for each of the components of our educational effectiveness index.

use a scale, of 1 to 5, to rate how helpful the service-learning project was at achieving this outcome. A 1 indicated that the project was not helpful, and a 5 indicated that the project was extremely helpful. Thus, index scores could range from a minimum of 5 to a maximum of 25. Descriptive statistics for the educational effectiveness index score and its components are included in Table 3. (See Table 3.)

To examine which factors influence the educational outcomes of service learning, we began by using ANOVA to test whether there were statistically significant relationships between each of the factors we had hypothesized as influencing the educational outcomes of service learning, and our educational effectiveness index. Next, we conducted multiple regression analysis in order to assess the relative contribution of different factors for explaining the educational outcomes of service learning. The dependent variable in this regression equation — the educational effectiveness index score — is modeled as a function of project structure and student characteristics. Multiple regression enables us to isolate the impact of each variable on educational outcomes, while holding other variables constant.

For our multivariate analysis, we included only the significant factors from the ANOVA results. A sensitivity analysis was performed, in order to compare our streamlined model to a model that included all of the variables that our ANOVA analysis showed as potentially influencing the educational outcomes of service learning. We chose this more parsimonious model for a variety of

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reasons. First, including all potential independent variables does not increase explanatory power. The adjusted R-square in the streamlined model (0.515) actually is slightly higher than in the fuller model (0.488). Second, there is more multicollinearity in the fuller model. Finally, given our modest sample size of 75, we were concerned that adding several insignificant variables would further reduce our model's statistical power.

FINDINGS

According to our analysis of ANOVA results, some structures for organizing service-learning projects are significantly more effective than others. As depicted in Table 4, there are significant differences in the educational effectiveness index scores of students based on the following: (a) the level of instructor guidance provided on the project, (b) the extent of project integration with course material, (c) the amount of in-class reflection time, (d) the level of student influence over the project, (e) the level of contact between students and service beneficiaries, and (f) whether the project involved group activities. With projects involving group activities, there are also significant differences in the educational effectiveness index scores of students, depending on how well they believed their group acted like a team. By contrast, other aspects of project structure do not appear to make a difference in the educational effectiveness index scores of students. These variables include the amount of time working on a project, and whether the course was required or elective. (See Table 4.)

While many aspects of project structure make a significant difference in reported educational outcomes, ANOVA results provided in Table 5 indicate that only a few student characteristics make a significant difference. The only one that appears to matter is full-time student status. Full-time students have a higher mean educational effectiveness index score than part-time graduate students do. On the other hand, there are no significant differences in educational effectiveness index scores that are based on student gender, race, past volunteer experience, past service-learning experience, and past work experience. (See Table 5.)

Table 6 reports the regression analysis of factors influencing the effectiveness of service learning with respect to achieving educational goals. Overall, the model explains 56 percent of the variance in the educational effectiveness index scores of students. Two aspects of project structure have a significant impact on service learning and its effectiveness at achieving educational goals: (a) integrating the service-learning project with class material, and (b) whether the activities took place in a group setting. A one-unit increase in integration leads to a 4.283-point increase in the educational effectiveness index, significant at the 0.01 level. This represents approximately 17 percent of the range of values in the index.

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Table 4.
ANOVA Analysis of Project Structure Variables and Effectiveness Score

Project Structure Variables	Educational Effectiveness Index Score			Significance (Prob>F)
	Mean	Std. Dev.	Number of Observations	***<=0.01 level, **<=0.05 level, *<=0.1 level
Instructor Guidance on this Project				
A little guidance	14.11	4.04	9	0.0001***
Some guidance	18.96	3.13	26	
A great deal of guidance	20.9	4.61	42	
Integration of Project With Course Material				
Not at all integrated	12	4.4	7	0.0000***
Somewhat integrated	18.08	3.55	39	
Very well integrated	23	2.36	30	
In-Class Reflection Time				
A little time	16.2	5.33	15	0.0002***
Some time	19.11	4.05	38	
A great deal of time	22.17	3.42	23	
Hours Per Week Spent Working on the Project Outside of Class				
Less than 2 hours	18.5	5	4	0.3622
2-5 hours	18.5	4.25	30	
More than 5 hours	20.02	4.77	41	
Student Influence Over Project				
A little influence	14.29	5.38	7	0.0016***
Some influence	19	4.3	30	
A great deal of influence	20.7	4.03	40	
Contact Between Students and Service Beneficiaries				
A little contact	19.10	4.50	42	0.0085***
Some contact	18.14	4.76	22	
A great deal of contact	22.85	2.82	13	
Project Involved Group Activities				
No	20.75	4.26	24	.0954*
Yes	18.87	4.65	53	
Extent To Which Group Members Work As a Team				
Not at all like a team	14	7.7	4	0.032**
Somewhat like a team	17.93	3.85	14	
Very much like a team	19.97	4.34	35	
Required Class				
No	19.76	4.65	21	0.721
Yes	19.34	4.6	56	

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Table 5.
ANOVA Analysis of Student Characteristics Variables and Effectiveness Score

Student Characteristics	As % of Total Number of Students	Educational Effectiveness Index Score	Significance (Prob>F)
Gender			
Male	28%	20.85	0.1442
Female	72%	19.18	
Race			
White	80%	19.58	0.9249
Non-white	20%	19.73	
Involvement in Volunteer Activities			
Not at all involved	19%	19	0.5611
Somewhat involved	51%	19.03	
Very involved	30%	20.27	
Number of Prior Service-Learning Projects (Participated In)			
None	39%	18.48	0.3036
1-3 projects	31%	20.4	
More than 3 projects	30%	19.65	
Public/Nonprofit Work Experience			
None	36%	19.63	0.137
3 years or less	31%	21.09	
4 years or more	33%	18.64	
Full-Time Graduate Student Status			
No	35%	18.04	0.0185**
Yes	65%	20.49	

***<=0.01 level, **<=0.05 level, *<=0.1 level

On the other hand, working in a group is estimated to decrease the educational effectiveness of service-learning projects by 2.439 points, significant at the 0.1 level. Status as a full-time student also impacts service learning and its effectiveness at achieving educational goals, significant at the 0.1 level. Full-time students tend to have more positive experiences with service-learning projects than part-time students do. Because the past work experience of students is not significant in our ANOVA analysis, we infer that full-time students might invest more time in service-learning projects than do part-time students. Therefore, they may get more out of these experiences. Even though our ANOVA analysis suggests there are significant differences in the educational effectiveness index scores of students depending on how well students believed their group acted like a team, we did not use this variable in our regression analysis. Because some of the students did not work in groups, including this variable would in essence have reduced our sample size by one-third. Due to our small sample, we omitted this variable in order to keep as many observations as possible. (See Table 6.)

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Table 6.
Factors Influencing Educational Effectiveness of Service Learning (Regression)

Independent Variables	Coefficient	Std. Err.	P> t
Project Structure			
Instructor Guidance	0.912	0.656	0.169
Integration with Class Material	4.283	0.805	0.000***
Students' Influence	0.480	0.632	0.450
Reflection	0.341	0.679	0.617
Contact with Service Beneficiaries	-1.167	0.930	0.214
Group Work (1=Yes)	-2.439	1.442	0.095*
Student Characteristics			
Full Time Students (1=Yes)	1.391	0.805	0.088*
Constant	8.217	2.618	0.003
Number of Obs.	75		
Prob>F	0.000		
R-squared	0.561		
Adjusted R-squared	0.515		

***<=0.01 level, **<=0.05 level, *<=0.1 level (2-sided)

DISCUSSION

This paper examines which factors influence the effectiveness of service-learning projects for achieving learning objectives. Our ANOVA analysis indicates that several project structures are associated with significant differences in educational outcomes. However, once we control for the impact of other variables, (a) the extent of project integration with course material, and (b) whether the project involved group activities are the only aspects of project structure that are estimated to have a statistically significant impact on educational outcomes. The only student characteristic we examined that has a significant impact on educational outcomes is whether or not the respondent is a full-time student. These findings have several important implications for MPA programs, as well as for other graduate programs that rely on service learning as a key pedagogical tool.

Service-learning projects challenge instructors effectively to integrate projects with course materials. One of the first decisions that instructors of a class with a service-learning component must make is how much class time should be devoted to the project. In addition, instructors must grapple with how best to link and pace the presentation of class material to correspond with the service-learning project. It is unlikely that a service-learning project will incorporate all the material taught in a class. In fact, many service-learning projects will require students to have a more in-depth understanding of one area of knowledge and

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skills than a traditional class would. Some crucial skills for conducting service-learning projects — such as interpersonal skills — may not even be related to the course subjects.

When designing service-learning projects, instructors also should weigh the tradeoffs involved with having students work together. Due to their size and scope, service-learning projects often require students to work in groups, which makes the workload manageable. However, our findings indicate that students who worked in groups gave their service-learning project a lower educational effectiveness rating than the students who did not participate in group activities did. Among the students who worked in groups, we find significant differences in student educational effectiveness ratings depending on how well students believed their group acted like a team. This highlights the importance of group dynamics in service learning, and suggests that, for service-learning projects that rely heavily on group work, instructors should carefully consider group composition and monitor group cohesion.

Another critical consideration for instructors is the students' capacity to perform the service-learning project. Service-learning projects can be very labor- and time-intensive. Part-time students may not be able to devote enough time to gain the full academic benefits of the service-learning approach. Service learning may be a more effective pedagogical tool for some graduate MPA programs than it is for others. MPA programs that primarily serve part-time students should consider whether the emphasis placed on service learning in their curricula is realistic, given their student populations.

Aside from status as a full-time graduate student, our ANOVA and multivariate analyses indicate that most student characteristics do not impact the educational outcomes of service learning. However, this finding may be unique to MPA programs. Many MPA students are strongly committed to public service, and generally may be more receptive to service learning than other types of graduate students. Further research should explore whether the impact of student characteristics on the educational outcomes of service learning matters more for different types of graduate programs.

Reflection is the one factor that has considerable empirical research to show its positive impact on the educational outcomes of service learning. While there are significant differences in the educational effectiveness index scores of students based on their amount of in-class reflection time, we find that other factors are more important for determining the educational effectiveness of service-learning projects. One possible explanation for this is that our analysis only focuses on in-class reflection time. Perhaps if we had included measures of both in-class and out-of-class reflection time, we would have found that it had a more significant impact on the educational outcomes of service learning. Another reason for our findings may be because some of the studies that emphasize the importance of reflection do not consider the impact of project

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integration. Moreover, none of the studies that focus on reflection examine the impact of group dynamics or full-time student status on the educational outcomes of service learning. In addition, the vast majority of research on factors that influence the educational outcomes of service learning has focused on undergraduates. The focus and content of service-learning projects performed by graduate students may be fundamentally different than of those performed by undergraduates. As a result, the factors that influence the educational impact of service learning for graduate students may be different than those that influence its impact on undergraduates.

CONCLUSION

The 2009 standards for the National Association of Schools of Public Affairs and Administration (NASPAA) stress that “our public service degrees give graduates the competitive skills they need to lead the public sector” (NASPAA, 2009, Mission Statement). As one of the many strategies aimed at achieving this goal, service learning brings the community into the classroom, and provides students an opportunity to grapple with real-life problems. Our preliminary findings indicate that the key factors of influence on the effectiveness of a service learning project in achieving its learning objectives are (a) the extent to which the project is integrated with class materials, (b) whether or not students work in groups, and (c) whether or not participating students are full-time.

Given the limited literature on service learning in the field of public affairs, we believe that more research is needed on this topic. In particular, our research suggests it would be helpful to know more about how to structure successful groups, and how to determine which strategies are the most effective for integrating service learning with class materials. Our research focused on service-learning projects as seen from the perspective of students and instructors. However, community organizations also play a crucial role in these projects. Researchers should examine how community-university relationships impact service-learning outcomes, and explore how community organizations and universities can work together to facilitate the learning process. Ideally, future research will provide a more comprehensive understanding of the factors influencing the educational outcomes of service learning, particularly for graduate students.

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FOOTNOTES

- ¹ In some courses, all students worked on the same service-learning project. In other courses, students worked on different projects.

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Appendix
Student Survey

Course Number and Name: _____

Section Number: _____

- 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

Mastering material covered in this course	1	2	3	4	5
Tying together concepts covered in this course	1	2	3	4	5
Applying concepts covered in this course to real situations	1	2	3	4	5
Developing a deeper understanding of material covered in this course	1	2	3	4	5
Developing a deeper understanding of material outside of this course that is relevant in your graduate program	1	2	3	4	5
Developing a better understanding of the role of public/nonprofit administrators	1	2	3	4	5
Increasing my enthusiasm for a career in public/nonprofit administration	1	2	3	4	5
Learning to work more effectively with people	1	2	3	4	5
Improving my problem-solving skills	1	2	3	4	5
Improving my oral communication skills	1	2	3	4	5
Improving my written communication skills	1	2	3	4	5
Developing my leadership skills	1	2	3	4	5
Feeling more connected to my community	1	2	3	4	5
Developing a deeper understanding of the complex problems facing my community	1	2	3	4	5
Becoming more involved in volunteer activities	1	2	3	4	5

- 3) How could this service-learning project be improved?
- 4) How much guidance did the instructor provide on this project?
 - A little guidance
 - Some guidance
 - A great deal of guidance
- 5) How integrated was this project into the material covered in this course?
 - Not at all integrated
 - Somewhat integrated
 - Very well integrated
- 6) How much time *in class* was spent discussing this project?
 - A little time
 - Some time
 - A great deal of time

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- 7) On average, how many hours per week did you spend working on this project **outside of class**?
- Less than 2
 - 2 – 5
 - More than 5
- 8) How much influence did you have over how this project progressed?
- A little influence
 - Some influence
 - A great deal of influence
- 9) Are you currently participating in a major service-learning project for another class you are taking this semester?
- Yes 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 for the other class?
- Not at all
 - Somewhat
 - A great deal

Only answer questions 11 and 12 if you participated 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 you group work as a team?
- Not at all like a team
 - Somewhat like a team
 - Very much like a team

BACKGROUND INFORMATION

- 13) Gender: Male Female
- 14) Age: 21-29 30-39 40-49 50 or older
- 15) Race/Ethnicity _____
- 16) Are you a domestic or international student?
- Domestic
 - International
- 17) What was your undergraduate major? _____
- 18) What is your graduate student status? Full-time Part-time
- 19) How many years of public and/or non-profit administration **paid** work experience do you have?
- None
 - 3 years or less
 - 4-5 years
 - More than 5 years
- 20) Prior to this semester, how involved were you in volunteer activities?
- Not at all involved
 - Somewhat involved
 - Very involved
- 21) Prior to this semester, how many major service-learning projects did you participate in as an undergraduate and/or graduate school student?
- 0 1 2 3 More than 3