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Measuring Social Capital as an Outcome of Service Learning

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Abstract Service-learning has been put forth as one of the proposed solutions to increasing social capital. However, service-learning research has not significantly addressed the impact of service learning on social capital. Unlike most previous studies, this research used quantitative analysis to measure the effect of university service-learning programs on social capital by examining the question: *What impact do service-learning programs have on social capital post-graduation?* This study showed that service learning addresses the civic engagement problem by providing evidence suggesting that service learning predicts social capital post-graduation.

Key words social capital · service-learning · citizen engagement

Decreased social capital (Ostrom 1996) is identified as a cause of the erosion of democratic civic culture and civic engagement and a corresponding growth in civic apathy (Barber and Battistoni 1993). Social capital refers to resources that individuals and groups access in social networks and mobilize for purposive action (Bourdieu 1985; Lin 2001; Paxton 1999; Putnam 1993, 1995). Coleman (1988), Putnam (1993, 1995, 2000), Fukuyama (1996), and others have identified the decline of social capital as the cause of this erosion; and they have argued for the "urgent need of reinventing community" (Portes and Landolt 1996, p. 18). The quandary of declining civic engagement has spurred an extensive literature that addresses how best to reengage citizens in the decision-making process. One of the solutions advocated is service learning (Barber and Battistoni 1993; Baxter 2008; Corporation for National and Community Service et al. 2002; Putnam 2000).

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A review of the relevant literature confirms that high levels of social capital contribute to the revitalization of civic engagement. Understanding the relationship between service learning and increased social capital can contribute to developing civic education programs that directly seek to increase social capital as a means of decreasing civic erosion. Service-learning research should also focus on measuring the impact of building social capital. Therefore, the overall purpose of this study was to use quantitative analysis to measure the effect of university service-learning programs on social capital.

Literature Review

The emphasis on social capital in the service-learning literature is relatively new, and the pool of such literature is quite small although there has been considerable emphasis on the impact of service learning on student learning outcomes, the development of citizenship characteristics, and community building. Researchers have come to realize there is scarce research on the effects of service learning on community development (Cruz and Giles 2000; Dorado and Giles 2004; Driscoll et al. 1996).

A few studies look at community development without focusing on social capital, including Keith (1998), who suggested how service-learning programs can build community, and Gelmon et al. (1998), who examined the impact of service learning on community building through the Health Professions Schools in the Service to the Nation Program. Similarly, Dorado and Giles (2004) expressed concern about the scarcity of literature on service learning and community, and they conducted twenty-seven interviews with fourteen participants to identify three paths of engagement between community agencies and universities. Noting the lack of focus on service-learning impact on community, Driscoll et al. (1996) developed a comprehensive case study model to be used for the future assessment of the impact of service-learning on community. Another model for doing research with community partners was proposed by Cruz and Giles (2000) in response to the deficiency of community research in the service-learning literature.

Campbell (2000), and Dufour (2005), Kahne et al. (2006) considered social capital as a potential outcome of service-learning programs. However, these studies did not quantitatively explore the impact of service learning on social capital. Howard (2006) quantitatively examined the impact of service-learning in the context of urban middle schools. His study revealed a significant correlation between the number of hours spent watching television and participation in a service-learning program.

A significant amount of empirical research about service-learning has examined intellectual and student outcomes, the development of citizen characteristics, and community building. However, this research has only minimally addressed the impact on social capital. Further studies of service learning and social capital are needed.

Theoretical Framework

In 1916, Hanifan coined the term *social capital* in an effort to endorse the renewal of community. Social capital has now become a trendy term used by politicians and professors worldwide (Farr 2004), but it is conceptualized differently by different writers. For example, according to the World Bank (n.d.), "Social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society's interactions.… [It] is not just the sum of the institutions that underpin a society—it is the glue that holds them together." Adler and

Kwon (2002) defined social capital as "the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor" (p. 23).

Bourdieu (1985) defined social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group" (p. 248). According to Bourdieu, social capital involves network ties and the transformation of these ties into relationships that imply "durable obligations felt" (p. 250). Coleman (1988) stated that social capital is defined by its function—that it is a multiplicity of entities that facilitate the actions of people within a social structure. These properties are key in understanding how social capital is created. Furthermore, Coleman argued that social capital is not located in the person but in the relationship between and among individuals and is created through the changes in the relations among people. Putnam (1993) defined social capital as "features of social organization, such as trust and networks, that can improve the efficiency of society by facilitating coordinated actions." More specifically, he explained that these features "facilitate coordination and cooperation for mutual benefit" (p. 167). Social capital enables people to engage with one another more effectively by building networks, cooperation, and trust (Putnam 2000). The building of social capital, according to Putnam, permits individuals to resolve collective problems more quickly, enhances the feeling of connection to others, facilitates trust and interaction in the community, and facilitates the flow of information.

The dominant framework for social capital referred to by community development theorists is that of Robert Putman, but DeFilippis (2001) argued that current interest in social capital based on Putnam's framework is misguided because it fails to address the issue of power in the production of communities. Similarly, Lin (2001) and Noguera (2001) also recognized the power imbalance and differences in social capital that need to be addressed in order for social capital to build communities effectively. Lin (1999) defined social capital primarily as "resources accessed in social networks" (p. 471). More specifically, he emphasized that not all individuals or social groups uniformly acquire or receive expected returns from their social capital. Instead, different social groups have differing access to social capital, depending on their advantageous or disadvantageous positions and associated social networks. Thus, inequality in social capital can be attributed to structural constraints and the dynamics of social interactions.

Noguera (2001) perceived social capital as "the by-product of and the collective benefits derived through participation in social organizations and networks" (p. 189). He maintained that race and class alone cannot explain why public institutions respond differently to different schools and neighborhoods in the same city and that difference in social capital must be a factor.

With this study I sought to conceptualize social capital by extending the dominant framework of Robert Putnam (1993, 1995, 2000). By including the works of research theorists such as Noguera (2001, 2003) and Lin (2000, 2001), who recognize differences in social capital and attribute these differences to class and access to resources, this analysis embraces a broad view of social capital.

The Study

Definitions and Terms

Two key dimensions of social capital are networks and trust. The defining of social relations as networks permits the identification of the structure and content of social

relations (Stone 2001). The quality, type, diversity, and position in social structure and the ability to access and mobilize networks affect the capacity to address and resolve problems faced in common (Lin 2001). *Networks* are defined in this study as connected informal and formal relationships on the individual and group levels (Bourdieu 1985; Coleman 1988; Lin 2001; Portes 1998; Putnam 1993; Woolcock 1998). This definition attempts to capture the type and mobilization of resources in relationships between and among individuals (Bringle and Hatcher 2002) and groups, as well as the network characteristics.

Informal networks are defined as the type and mobilization of resources on the individual level and group level (Lin 2001; Paxton 1999). In this study, informal networks were observed by respondents' answers to survey questions regarding four main types of informal networks—family in the household, family beyond the household, friends/intimates, and neighbors—and by measuring the frequency of interaction and diversity of interaction (Berscheid et al. 1989; Coleman 1988; Kelley et al. 1983; Social Capital Community Benchmark Survey 2000).

Formal networks are defined as participation in non-political organizations (Brewer 2003) and political engagement (Putnam 1993; Stone 2001). Non-political organizations are non-profits, church groups, and school groups (Brehm and Rahn 1997). *Civic engagement*, the core of social capital, focuses on the extent to which people connect with life in their communities (Putnam 1993), that is, socializing, interacting, and pursuing membership and participation in organizations (Brewer 2003). *Political participation* is broadly defined as activity that intends to influence government (Burns et al. 2001) such as voting or working on or donating to a political campaign. Formal networks were measured by participants' answers to survey questions inquiring about their participation in two main types of formal networks—nonpolitical and political organizations—and measuring the frequency and diversity of interaction (Berscheid et al. 1989; Coleman 1988; Kelley et al. 1983; *Social Capital Community Benchmark Survey* 2000). *Network characteristics* has been defined as the position and diversity of networks (Lin 2001; Paxton 1999). Network characteristics were observed by respondents' answers regarding positions accessed and the heterogeneity of the networks to which respondents belonged (Lin 2001).

Trust is a component of social relations. It has been defined as "an expectation of an actor that the other party fulfill its obligations in spite of uncertainty and opportunities for defection and self-serving behavior" (Creed and Miles 1996, p.18). Moreover, trust is earned based on the information individuals have about others' trustworthiness (Ulsaner 2000). Rus and Iglic (2005) reasoned that information about trustworthiness comes from two sources of trust: institutional sources and interpersonal sources. Trust is considered a necessary component of democracy (Putnam 1993, 1995; Ulsaner 2000; Ulsaner and Brown 2005; Ulsaner and Conley 2003). The survey questions in this study measured the following types of trust:

- Reciprocity (Coleman 1988; Misztral 1996)
- Trust of individuals or familiar persons such as neighbors, coworkers, and shop owners
- Trust of institutions such as the local police (Paxton 1999; *Social Capital Community Benchmark Survey* 2000; Stone 2001)
- Generalized trust of strangers (Putnam 1993, 1995; Stone 2001)

Research Question and Hypotheses

The goals of this study were:

- To determine the impact of service learning on social capital post-graduation,

- To initiate the development of a conceptual social capital framework that extends Putnam's dominant framework (1993, 1995, 2000), and
- To measure social capital quantitatively as an outcome of a service-learning program.

Consequently, I explored the following research question and hypotheses in order to examine the impact of service learning on building social capital post-graduation, that is, after students who had taken a service-learning course[1] graduated from college.

Question: What is the impact of service-learning programs on building social capital after students who take a service-learning course graduate from college?
Hypothesis 1: Students who took a service-learning course will have higher social capital factor scores post-graduation than students who did not have a service-learning course.
Hypothesis 2: Students who took a service-learning course will have higher trust factor scores post-graduation than non-service-learning students.
Hypothesis 3: Students who took a service-learning course will have higher network factor scores post-graduation than non-service-learning students.
Hypothesis 4: For students who took a service-learning course, the course will be a significant predictor of social capital factor score post-graduation.
Hypothesis 5: For students who took a service-learning course, the course will be a significant predictor of trust factor score post-graduation.
Hypothesis 6: For students who took a service-learning course, the course will be a significant predictor of network factor score post-graduation.

Participants and Data Collection

In this study I focused on the one basic research question: *What is the impact of service-learning programs on building social capital?* To address this question, survey research, using a quasi-experimental posttest-only design with a nonequivalent comparison group, was used. I mailed the survey instrument in Fall 2005 to students (n=898) who had taken at least one service-learning course and students (n=870) who had never taken a service-learning course during the academic years from 2002 to 2005. The students were undergraduates who had graduated from any campus of Rutgers University in New Jersey.

The experimental group was labeled "service-learning" because the students were undergraduates from the classes of 2002 through 2005 who had completed at least one service-learning course during their undergraduate studies. The participants came from Citizenship and Service Education (CASE), the undergraduate service-learning program at Rutgers. All disciplines offering a course with a service-learning component are listed with the CASE program. The mission of the CASE program is to prepare students to participate as active and effective citizens in a democratic society and to teach a lifelong service ethic. Within this program a one-semester service-learning component is offered across the curriculum in approximately fifty different courses, which can be either mandatory or optional. Mandatory service-learning courses require students to complete a forty-hour internship and relevant course work. Students registered in optional service-learning courses may choose service learning as an additional component. All students who

[1] A course is considered service-learning, in any discipline, if it contains a service-learning component. The course may be optional or mandatory and is a credit-bearing course. At Rutgers University all disciplines offering a course with a service-learning component are listed with CASE.

complete a service-learning course receive an additional credit. Although course syllabi and teaching methods vary, the faculty is provided with guidance on incorporating aspects of service learning, such as reflection, into their courses (*CASE Faculty Orientation Packet* 2001). The success of the program was established when President Bill Clinton came to Rutgers on March 1, 1993, to announce his national service plan and recognized Rutgers's CASE program as a model for colleges and universities throughout the United States and worldwide.

The sampling frame for the experimental group was obtained from the CASE offices in New Brunswick, New Jersey, and Newark, New Jersey, which generated past rosters of approximately 1,200 service-learning participants. This list was then updated using the Rutgers alumni database. After excluding non-graduates and duplicates, about 950 names were left. Because of the limited population, random sampling was not adopted. Instead, I mailed the survey to all 950 service-learning students. Fifty-two surveys were returned with undeliverable addresses. In sum, the practical sample population was 898. Institutional Review Board (IRB) approval had been obtained during summer 2005 to conduct this research.

One should note that efforts had been made by CASE administrators to incorporate the service-learning objectives in the teaching of all fifty service-learning courses offered across the curriculum during the time period covered by the study. All professors teaching in the CASE program are asked to integrate service learning into their courses (CASE 2001). The faculty members are expected to inform students about how CASE works and to connect classroom theory with on-site practice work. Believing that reflection is a very significant part of service-learning pedagogy, CASE provides the faculty members with examples of how to incorporate reflection into the classroom, including journaling and writing reflective papers. CASE also keeps in contact with the instructors throughout the semester (CASE 2001).

The non-equivalent comparison group was labeled "non-service-learning" because the students had not taken a service-learning course. The students being compared did not all take the same courses, nor were they pursuing the same major. Nonetheless, "[e]ven when the same course is used as a control, it is difficult to keep the content the same across the experimental and control groups" (Smith 2005, p. 14), thus confounding the effort to ascertain the impact of service learning (Smith 2005).

The sampling frame for the nonequivalent comparison group was obtained from the university's alumni office, which generated a random list of about 3,000 undergraduates. In order to keep the two groups similar, 950 names were randomly selected. This list was then updated using the online university alumni database. Eighty surveys were either undeliverable or unusable because the participants had, in fact, taken a service-learning course—outcomes that had been anticipated. In sum, the practical sample population was 870.

Internal Validity and Control Variables

As anticipated by Smith (2005), the service-learning component was not the only difference between the experimental and comparison group. Certain students may be more inclined than their peers to participate in service. The outcomes may therefore not reflect the impact of service participation but may instead simply evince differences in student characteristics (Astin and Sax 1998). Consequently, it is not possible to state that differences emerging between the two groups are due solely to service learning (Smith 2005). This makes the establishment of a certain relationship between social capital and service learning difficult (Campbell 2000; Print and Coleman 2003).

According to Astin and Sax (1998), "Knowing something about those undergraduate students who eventually participated in some form of volunteer service is useful" (p. 253). Such predisposing factors include leadership ability, involvement in religious activities, and commitment to participating in community-action programs. The effects of predisposing factors are compounded in a quasi-experimental, posttest-only design because it lacks randomization and a pretest. Moreover, the quasi-experimental, posttest-only design with a non-equivalent comparison group is susceptible to threats to its internal validity because the process of self-selection might bias the results. Therefore, whether the data set had been biased by the research design and selection process had to be considered. If the experimental and control groups were similar at the beginning of the experiment, it could then be assumed that the control group was effective (Myers-Lipton 1996) and that it was not simply those with more social capital who participated in the survey. Shadish et al. (2002) suggested improving the posttest-only design by using proxy variables, that is, "variables that are conceptually related with the posttest with treatments" (p. 118). These variables should go beyond measures of age, gender, and race and be conceptually related to the outcome (Shadish et al. 2002).

In this study, control variables were used as proxies to assess the similarities between the two groups and to account for pre-selection bias. I split control variables into two groups: preexisting social capital control variables (i.e., those that attempt to account for selection bias and act as proxies) and general control variables. Preexisting social capital variables were used as proxies to control for influences on social capital prior to taking a service-learning course, i.e., preexisting high school social capital and preexisting college social capital. The alpha coefficients for preexisting high school social capital and preexisting college social capital were 0.80.

Instrument

I designed the survey instrument to assess the impact of service learning on social capital. Former students were asked to self-report their ratings of mixed statements and questions on a 7-point Likert scale of dichotomous questions. The scale ranged from 1 = "strongly disagree" to 7 = "strongly agree"; a separate response ("other") was used to indicate having no thought about the statement. I borrowed or modified survey items from other studies to develop the questions to assess two dimensions of social capital: trust and networks.

Dependent Variable

In this study the dependent variable, social capital, was created by constructing a scale using principal component analysis. Based on the principal components method, three factors emerged: social capital factor score, Eigenvalue of 2.841; trust factor score, Eigenvalue of 1.439; and network factor score, Eigenvalue of 1.111.

Internal consistency of the subset of questions for social capital was assessed using Cronbach's Alpha. Alpha coefficients for the subset of questions measuring networks were 0.65 (informal networks—use), 0.72 (informal networks—type), 0.74 (formal networks—use/voting), 0.65 (formal networks—use/other), 0.84 (formal networks—type), 0.60 (network characteristics—position), and 0.69 (network characteristics—diversity). The alpha coefficients for the subset of questions measuring trust were 0.81 (institutional trust), 0.68 (personal trust), and 0.60 (reciprocity). A Cronbach's Alpha coefficient higher than 0.7 is considered desirable, with 0.6 being acceptable. The results show that the measurements possess internal consistency.

Independent Variable

Service learning combines service (community action) and learning (taking what is learned from action and connecting it to knowledge) (Stanton et al. 1999). Service learning has been defined as a "method of experiential education in which students apply what they learn to a real world situation by performing needed community service" (Morgan and Streb 2001, p. 158). For this study the Rutgers Citizenship and Service Education program's definition of service learning was used:

> [A] method under which students learn and develop through thoughtfully organized service that: is conducted in and meets the need of a community and is coordinated with an institution of higher education, and with the community;… is integrated into and enhances the academic curriculum of the students enrolled; and includes structured time for students to reflect on the service experience. (The National Service Community Act 1999, p.10)

Analysis

Principal component analysis was performed to assess the unidimensionality of the scales. Then, using the factor scores, multiple regression analysis was conducted to find the relationship between the dependent and independent variables. Specifically, backward elimination regression was used. In addition, correlations were conducted to reveal the basic relations among the variables. Correlation analysis produces a "measure of association that not only indicates the strength and direction of the relationship, but also provides a measure of how accurate the regression equation is in predicting the relationship" (Alm 1999, p. 249). In all the analyses, the data were treated as interval.

Results

The statistical results from the survey are presented below, and the significance of these results is considered in the "Discussion" section.

Response Rate

Of the 1,778 participants in both groups, a total of 363 (20%) responded. This response consisted of 21% of the service-learning participants and 20% of the non-service-learning participants. The similar return rates for both groups support the contention that the internal validity of the sample was sustained. A 50% response rate is considered adequate; 60% is good, and 70% is very good (Babbie 2001). However, a typical return rate is around 30%. The low response rate can be addressed by demonstrating the absence of response bias, which is the primary concern inherent in a low response rate.

Demographics

Females accounted for 76.3% of the overall sample, 85.7% of respondents who had taken a service-learning course, and 66.1% of respondents who had not taken a service-learning course. Caucasian students accounted for 62.0% of the overall sample, 63.0% of respondents who had taken a service-learning course, and 60.9% of respondents who had

not taken a service-learning course. Age ranged from 21 to 60 years (M = 25.25, SD = 4.82 [entire sample]; M = 23.87, SD = 2.20 [service-learning]; M = 26.75, SD = 6.24 [non-service-learning]).

Table I displays the frequency counts for selected control variables. The similarities between the two groups are supported through the comparison of the control variables. Given that the return rate is below 30%, the groups' similarities counter threats to internal validity.

Findings

The first three hypotheses access the Pearson product-moment correlations (a test that assesses the relationship between two or more variables) between the three factor scores and whether a student took the service-learning course (n=363). Hypothesis 1 stated, "Students who took a service-learning course will have higher social capital factor scores than non-service-learning students." In Table II, the point-biserial correlation between the two variables was significant, providing support for Hypothesis 1. Hypothesis 2 stated, "Students who took a service-learning course will have higher trust factor scores than non-service-learning students." In Table II, the point-biserial correlation between the two variables was significant, providing support for Hypothesis 2. Hypothesis 3 stated, "Students who took a service-learning course will have higher network factor scores than non-service-learning students." In Table II, the point-biserial correlation between the two variables was significant, providing support for Hypothesis 3.

The remaining three hypotheses assess the association between the three factor scores and whether the student took a service-learning course. Hypothesis 4 stated, "If students take a service-learning course, then the course will be a significant predictor of the social capital factor score." Table III displays the final model predicting the social capital factor score based on the service-learning course variable and control variables. The final eight-variable model was significant (p<.001), accounting for 48.0% of the variance in the dependent variable. The social capital factor score was significantly higher for those who (a) took the service-learning course, (b) were provided with study aids, (c) had higher preexisting high school social capital, (d) had higher preexisting college social capital, (e) did not work part-time in high school, (f) had a college cooperative or work-study project, (g) were involved in a political campaign, or (h) were Caucasian. The findings in Table III provided support for Hypothesis 4.

In addition, no significant relationships existed for the omitted control variables, which included family link to the community and the family background measures of cultural capital, financial capital, and social capital; thus they were not entered into the stepwise regression model. Specifically, three measures of financial capital were found not to be significant: family income in elementary school, family income in high school, and having a fixed place to study.

Hypothesis 5 stated, "If students took a service-learning course, then the course will be a significant predictor of trust factor score." Table IV displays the final model predicting trust factor score based on the service-learning course variable and control variables. The final six-variable model was significant (p<.001), accounting for 31.4% of the variance in the dependent variable. Trust factor score was significantly higher for those who (a) had higher preexisting high school social capital, (b) had higher preexisting college social capital, (c) did not work part-time in high school, (d) were not elected to high school student government, (e) had a college cooperative or work-study project, or (f) were Caucasian. Since attending the service-learning course was not a significant variable in the final model, the findings in Table IV provided no support for Hypothesis 5.

Table I Frequency Counts for Selected Variables

Variable	Overall		Service-Learning		Non-Service-Learning	
	n	%	*n*	%	*n*	%
Income in elementary school						
Under $15,000	14	3.9	9	4.8	5	2.9
$15–25,000	29	8.0	12	6.3	17	9.8
$25–35,000	30	8.3	12	6.3	18	10.3
$35–45,000	41	11.3	19	10.1	22	12.6
$45–55,000	39	10.7	15	7.9	24	13.8
Over $55,000	210	57.9	122	64.6	88	50.6
Income in high school						
Under $15,000	11	3.0	6	3.2	5	2.9
$15–25,000	23	6.3	6	3.2	17	9.8
$25–35,000	22	6.1	11	5.8	11	6.3
$35–45,000	21	5.8	12	6.3	9	5.2
$45–55,000	36	9.9	16	8.5	20	11.5
Over $55,000	250	68.9	138	73.0	112	64.4
Provided study area						
No	85	23.4	44	51.8	41	48.2
Yes	278	76.6	145	52.2	133	47.8
Provided study aids						
No	19	5.2	6	31.6	13	68.4
Yes	344	94.8	183	53.2	161	46.8
Safe elementary school						
No	27	7.4	13	6.9	14	8.0
Yes	336	92.6	176	93.1	160	92.0
Safe high school						
No	17	4.7	12	6.3	5	2.9
Yes	346	95.3	177	93.7	169	97.1
Number of times changed schools						
0 times	198	54.5	114	60.3	84	48.3
1–2 times	138	38.0	68	36.0	70	40.2
3–4 times	12	3.3	4	2.1	8	4.6
5 or more times	15	4.1	12	6.9	12	6.9
Number of siblings						
None	84	23.1	41	21.7	43	24.7
One	116	32.0	61	32.3	55	31.6
Two	140	38.6	73	38.6	67	38.5
Three or more	23	6.3	9	5.2	9	5.2
Elementary friends attended college						
No	69	19.0	22	11.6	47	27.0
Yes	294	81.0	167	88.4	127	73.0
High school friends attended college						
No	36	9.9	10	5.3	26	14.9
Yes	327	90.1	179	94.7	148	85.1

Table I (continued)

Variable	Overall		Service-Learning		Non-Service-Learning	
	n	%	*n*	%	*n*	%
High school: co-op						
No	313	86.2	164	86.8	149	85.6
Yes	50	13.8	25	13.2	25	14.4
High school: intern						
No	294	81.0	150	79.4	144	82.8
Yes	69	19.0	39	20.6	30	17.2
High school: worked part-time						
No	76	20.9	150	79.4	144	82.8
Yes	287	79.1	39	20.6	30	17.2
High school: political campaign						
No	327	90.1	170	89.9	157	90.2
Yes	36	9.9	19	10.1	17	9.8
High school: extracurricular activities						
No	33	9.1	13	6.9	20	11.5
Yes	330	90.9	176	93.1	154	88.5
High school: student government						
No	259	71.3	130	68.5	129	74.1
Yes	104	28.7	59	31.2	45	25.9
College: part-time work						
No	41	11.3	20	10.6	21	12.1
Yes	322	88.7	169	89.4	153	87.9
College: political campaign						
No	302	83.2	148	78.3	154	88.5
Yes	61	16.8	41	21.7	20	11.5
College: extracurricular activities						
No	103	28.4	49	25.9	54	31.0
Yes	260	71.6	140	74.1	120	69.0

(Overall n=363; service-learning n=189; non-service-learning = 174)

In addition, no significant relationships were provided for the omitted control variables, which included family background, financial capital, cultural capital, family link to the community, and trust; thus they were not entered into the stepwise regression model.

Table II Pearson Product Moment Correlations Between Selected Scales and Service Learning

Variable (n=363)	Q30: Took Service Learning[a]
Social capital factor score	.25**
Trust factor score	.16*
Networks factor score	.26**

*p<.005., ** p<.001

[a] Point-biserial correlation: 0 = *Didn't take course,* 1 = *Took course*

Table III Predicting Social Capital Factor Score Based on Selected Variables. Backward Elimination Regression (n=363)

Variable	*B*	*SE*	β	*p*	*sr*	sr^2
Intercept	−3.74	0.27		.001		
Took service learning [a]	0.16	0.08	.08	.051	.08	.01
Provided study aids [a]	0.39	0.18	.09	.025	.09	.01
Preexisting high school social capital scale	0.16	0.04	.18	.001	.15	.02
Preexisting college social capital scale	0.44	0.04	.47	.001	.39	.15
High school: worked part-time [a (HS)]	−0.22	0.10	−.09	.026	−.09	.01
College: co-op or work-study [a``````]	0.36	0.09	.17	.001	.16	.03
College: political campaign [a]	0.33	0.10	.12	.002	.12	.01
Caucasian student [a]	0.28	0.08	.14	.001	.13	.02

Final model: F (8, 354) = 40.82, $p<.001$. R^2 = .480

[a] Dummy coding: 0 = *no,* 1 = *yes*

sr = Semipartial (part) correlation

Hypothesis 6 stated, "If students took a service-learning course, then the course will be a significant predictor of network factor score." Table V displays the final model predicting network factor score, based on the service-learning course variable and control variables. The final eleven-variable model was significant ($p<.001$), accounting for 43.3% of the variance in the dependent variable. Network factor score was significantly higher for those who (a) took the service-learning course, (b) were provided with study aids, (c) had a higher cultural capital score, (d) did not attend a safe high school, (e) had fewer elementary school friends who attended college, (f) had higher preexisting high school social capital, (g) had higher preexisting college social capital, (h) worked in a political campaign, (i) had a college cooperative or work-study project, or (j) were older. The findings in Table V provided support for Hypothesis 6.

In addition, no significant relationships were provided for the omitted control variables, which included financial capital measures of family income in elementary school, family income in high school, and networks; thus they were not entered into the stepwise regression model.

Table IV Predicting Trust Factor score Based on Selected Variables. Backward Elimination Regression (n=363)

Variable	*B*	*SE*	β	*p*	*sr*	sr^2
Intercept	−2.78	0.26		.001		
Preexisting high school social capital scale	0.12	0.05	.13	.014	.11	.01
Preexisting college social capital scale	0.41	0.05	.44	.001	.37	.14
High school: worked part-time[a]	−0.34	0.11	−.14	.003	−.13	.02
High school: student government[a]	−0.27	0.10	−.12	.007	−.12	.01
College: co-op or work-study[a]	0.23	0.10	.11	.019	.10	.01
Caucasian student[a]	0.47	0.09	.23	.001	.22	.05

Final model: F (6, 356) = 27.15, $p<.001$. R^2 = .314

[a] Dummy coding: 0 = *no,* 1 = *yes*

sr = Semipartial (part) correlation

Table V Predicting Networks Factor Score Based on Selected Variables. Backward Elimination Regression (n=363)

Variable	*B*	*SE*	β	*p*	*sr*	sr^2
Intercept	−3.15	0.42		.001		
Q30 Took service-learning[a]	0.29	0.09	.15	.001	.13	.02
Provided study aids[a]	0.40	0.19	.09	.033	.09	.01
Cultural capital scale	0.15	0.08	.08	.049	.08	.01
Safe high school[a]	−0.41	0.20	−.09	.039	−.08	.01
Elementary friends attended college[a]	−0.30	0.11	−.12	.005	−.11	.01
Preexisting high school social capital	0.16	0.04	.18	.001	.15	.02
Preexisting college social capital	0.32	0.05	.34	.001	.29	.08
High school: Political campaign[a]	0.31	0.15	.09	.038	.08	.01
College: co-op or work study[a]	0.33	0.09	.16	.001	.15	.02
College: political campaign[a]	0.43	0.12	.16	.001	.14	.02
Age	0.02	0.01	.10	.022	.09	.01

Final Model: F (11, 351) = 24.35, $p<.001$. $R^2 = .433$

[a] Dummy coding: 0 = *no,* 1 = *yes*

sr = Semipartial (part) correlation

Discussion

This study showed that service learning addresses the lack of civic engagement among college graduates by providing evidence suggesting that service learning predicts social capital post-graduation. An examination of the two groups, service-learning (n=189) and non-service-learning (n=174), showed that the service-learning group's social capital factor score, networks factor score, and trust factor score were all significantly correlated ($p<.05$) with service learning experiences. The frequencies for the demographics and control variables demonstrated the groups' similarities and accounted for minimal variance in the final regression models, ensuring the sample's internal validity. This is important, given that the return rate was below 30%. In addition, service learning was found to be a predictor of social capital score and network factor score, but not trust factor score.

Civic engagement has been an important policy concern for public administrators. However, many participation initiatives have not lived up to expectations; civic engagement and youth engagement continue to decline. The decrease in social capital is an important cause of this problem, and social capital therefore needs to be part of the solution. This study explored the validity of service learning, a specific type of civic education, as part of that solution.

Social capital should be an important concern in the policy implementation of citizen engagement, and particularly youth engagement. Although civic engagement and youth engagement have been studied by several generations of researchers, they remain an enigma. One problem is the lack of empirical research into the relationship between civic education and social capital. Perhaps the literature on social capital, as well as on service learning, can provide useful lessons for policy implementation research. Without carefully examining the concept of social capital in terms of civic education, implementation can be ineffective and at times fail. Furthermore, service-learning predicts social capital post-graduation. This may imply that service learning contributes to developing individual social

capital (that has no immediate benefit for the community) and influence an individual to continue to be engaged in community, even if the immediate network disbands (i.e., the service learning course ends). Thus, service-learning may be a catalyst to stimulate the change in cultural and social norms necessary to invest more widely in and implement university-wide service-learning programs.

This study highlights the importance of measuring social capital as an outcome of service learning. In the service-learning arena, many scholars, such as Gelmon et al. (1998), emphasized the deficiency of research focused on community building and the difficulty of conducting such research because of the potential presence of confounding variables (e.g., preexisting social capital). It is thus very important that social capital not only be measured accurately but be aligned with service-learning goals as well.

Future research is needed to develop better scales. (The scales in this study provide a good foundation and are acceptable: they are both internally consistent and unidimensional.) In addition, other methodological concerns, including the lack of randomization and the absence of a pretest, need to be improved in order to measure accurately the impact of service learning on social capital. Besides the methodological concerns, there are several ways future research can contribute to the field. The definition of social capital could be more sophisticated, precise, and differentiated to allow for more accurate assessment. Social capital has different levels (individual and group) and different types (bonding and bridging), but this study does not account for this variation. For example, individuals may have a lot of bonding social capital that has no benefit to community. Further research should focus on what type of social capital is generated—that is, whether different service-learning programs generate different forms of social capital.

Conclusion

Service learning has demonstrated the potential to address the long-discussed decline in citizen participation and its consequences. The implementation of service-learning programs has the capacity to build social capital, which is necessary to revitalize civic engagement and build community. The findings of this study are promising for the potential of service-learning as an influence upon student development. Further research should explore, qualitatively, how service-learning contributes to social capital.

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