Comparing College Community Participation and Future Service Behaviors and Attitudes

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Little research has examined the effects of service participation and the level of integration of service into courses on alumni service-related attitudes and behaviors. In the present study, 481 alumni of a religious-affiliated liberal arts college participated in a phone survey that examined their present and past behaviors related to service and their current service-related attitudes. Results showed that participation in both general community service and service-learning as undergraduates was positively associated with alumni attitudes toward social and personal responsibility as well as alumni involvement in post-college community service and service-related careers. Service-learning participation exerted an effect over and above that accounted for by community service participation. Positive relationships of service-learning with outcomes generally were limited to courses that provided high-quality experiences (more hours of service, more reflection activity, and more integration of service into the course).

Beginning in the mid-1980s, educators and critics of higher education (e.g., Boyer, 1987; Newman, 1985) have called for a greater commitment from colleges and universities to connect student learning more closely to contemporary civic and social issues (Eyler & Giles, 1999; Jacoby, 1996). Higher educational institutions have responded to this call by incorporating curricular and co-curricular programs with the goals of furthering students' awareness of public issues and community needs, helping to foster the development of ethical leadership, and encouraging students to assume a lifelong commitment to social responsibility (Bringle, 2003; Kendall, 1990). Service-learning, the incorporation of community service experiences in an academic course that enhances learning of course material and contributes to students' preparation for continued civic participation (Howard, 2001), has become a popular curricular innovation that has responded to the challenges of such goals (Bringle; Eyler & Giles; Jacoby, 1996).

A growing number of studies have documented the positive effects of participating in community service and service-learning for college undergraduates who become involved in service activities (Astin & Sax, 1998; Eyler & Giles, 1999; Fenzel & Leary, 1997; Moely, McFarland, Miron, Mercer, & Ilustre, 2002; Vogelgesang & Astin, 2000). Among the benefits acknowledged by researchers are gains in students' attitudes toward civic responsibility, academic skills, and leadership participation and development. Particularly noteworthy is the work of Astin and colleagues. For example, in a study of the long-term benefits of service participation, Astin, Sax, and Avalos (1999) showed that the effects of participation

in college volunteer service persists up to five years beyond college graduation and are evidenced in graduates' attitudes toward social responsibility and greater commitment to serving their communities.

Some work (e.g., Astin, Vogelgesang, Ikeda, & Yee, 2000; Vogelgesang & Astin, 2000) has shown also that in many ways participants in service that is incorporated in an academic course benefit more, or in different ways, than do students who participate in service not related to their academic program. For example, Astin et al. (2000), in a large study of several thousand university students, reported that both service-learning and non-course-related (or general) community service independently predicted college students' levels of commitment to activism (community and political action) and promoting racial understanding, intentions to pursue a service-related career, and academic outcomes such as growth in critical thinking and skills in written expression. The authors suggested that the students' expression of a desire to be employed in a service-based career after graduation, when they had participated in general community service and service-learning, indicated a particularly strong finding because of the strong commitment to service that such a choice manifests.

In other work examining the independent effects of service-learning and general community service participation, Moely et al. (2002), in a semester-long study comparing college service-learning participants with nonparticipants, found that service-learners posted greater gains in attitudes involving political and social justice awareness and civic action. Also, in a study of alumni from a private college with a strong service orientation, Warchal and Ruiz (2004)

found that the combination of service-learning and general community service participation predicted a greater likelihood of accepting a job in a field related to respondents' area of college service (most of which were in education) when compared to alumni who engaged in no college service or only in general community service. However, they found that a service-learning experience predicted the amount of postgraduate service for younger alumni, but not older alumni, and that service-learning participation was not related to respondents' involvement in civic leadership activities.

Research has just begun to examine the reasons for the added benefit that service-learning participation exerts on students' attitudes, beliefs, and continued service involvement. For example, Astin et al. (2000), who found that discussions among students about common service experiences mediated the effect of service on values and beliefs, suggested that the discussions were more likely to be structured in service-learning courses than in other service activities. They also showed that discussing the service experience with professors, also more likely to take place in service-learning courses, mediated the effect of service on student outcomes. In addition, some studies (Mabry, 1998; Steinke, Fitch, Johnson, & Waldstein, 2002) have shown positive effects on civic and social values and academic learning for service-learning participants who participate in more hours of service and reflection activities that include discussions aimed at integrating service with course content and encouraging students to consider multiple perspectives.

Constructivist theory, which suggests that service-learning provides a particularly beneficial context for students to construct knowledge and understanding, supports the importance of reflection discussion activities that enable students to connect service experiences with course content (Hecht, 2003). These activities also afford students opportunities to take learning beyond discipline-specific theory to the application of course material to practical and meaningful social challenges and problems (Bringle, 2003; Eyler & Giles, 1999), activities that can lead students to unique understandings of social problems. Similarly, the potential benefits to students of interacting with faculty, fellow students, and community members through service-learning are supported by a theory of student involvement (Astin et al., 2000). As Astin et al. pointed out, through service-learning students can witness examples of phenomena they read about in class and interact with individuals in the community who add new meaning to their readings. When students' beliefs or conceptual understandings are challenged by what they observe through service-learning experiences, a new synthesis in their understanding is likely to emerge, especially when they participate in formal and informal discussions of their experiences, observations, and interpretations.

The present study, then, has three principal objectives with respect to assessing long-term effects of service participation. First, the study examines whether college participation in service-learning and community service is associated with subsequent service-related attitudes and behaviors one to six years after graduation. Second, it examines whether participation in service-learning makes a unique contribution (over and above that of non-course-related community service) to social justice attitudes and service behaviors exhibited as alumni. Third, it examines whether service-related outcomes are related to the quality of the service-learning experience, specifically whether service was highly integrated into the academic course, the number of hours in service activities associated with the course, and the number of personal reflection activities in the course.

Method

Participants

For this study, two groups of alumni of an east coast Catholic liberal arts college were chosen for a phone survey in spring 2001. The first group was 122 alumni who graduated between 1992 and 1999 and had completed an undergraduate service-learning course (identified through academic transcripts). This sample was selected to ensure an adequate number of respondents who had participated in service-learning. The second group was a random sample of 1,315 alumni of the college who graduated between 1995 and 1999 (there were approximately equal numbers from each year). Phone interviewers reached a person at 745 of the numbers called and were able to confirm that the number corresponded to the graduate or his/her family; reasons for not reaching someone included disconnected number, wrong number, and no answer. At 159 of the numbers reached, the potential respondent no longer lived there, and 43 were not home when the call was made, leaving 543 total alumni who were reached. Sixty-two of 543 (11.4%) either refused to participate ($n = 60$) or started but failed to complete the interview ($n = 2$). The final sample size was 481 participants, 48 of whom were from the identified service-learning sample.

The majority of respondents were white (90.6%), female (61.5%), and Catholic (78.8%; see Table 1). During college, almost half (48.9%) had majored in human sciences (social, behavioral, clinical, education), and another quarter (23.5%) in business, with the remainder divided between natural sciences and arts/humanities. The majority were not married (74.2%) and were employed (89.6%) and about half (48%) had attended graduate school. The respondents'

median annual income category was $31,000-$45,000. Age of respondents was not obtained, but year of graduation provides a good estimate of the ages of the respondents, as nearly all students at the college are of traditional age. The mean number of years since graduation was 3.93 (SD = 1.63), suggesting respondents' average age was approximately 26.

Following Vogelgesang and Astin (2000), community service (CS) alumni were identified as alumni who indicated participating in any community service in college outside of course requirements (*N* = 314). Non-community service alumni (NCS) were those who indicated no participation in any type of non-course-related service (*N* = 166); one participant did not answer this question and was dropped from the analysis. This categorization differed somewhat from that used by Vogelgesang and Astin (2000) who included service-learning (SL) students in their CS category. However, we do examine a comparable combined service group that engaged in either CS, SL, or both (*N* = 417).

SL alumni in the present study were identified as those individuals who indicated in the phone survey that they had taken at least one undergraduate service-learning course (*N* = 285) and non-service-learning (NSL) alumni were identified as those who gave a negative answer to the question (*N* = 195).

In the present study, there was some overlap in alumni who were among the SL and CS groups (*N* = 182). Also, 63 alumni were both NCS and NSL. Because this sample was enriched by obtaining additional SL respondents, the proportions of these groups are not necessarily representative of the college's graduates during these years (especially for years prior to 1995).

Materials

Items for the alumni phone survey were developed by a research center at the college which has considerable experience and expertise in preparing and conducting phone surveys. The questionnaire contained several measures of the quality of the service-learning experience. The question to determine the number of *hours of community service* performed for the course had the response options of *less than 5* = 1; *5-10* = 2; *10-15* = 3; *15-20* = 4; *more than 20* = 5. The question about forms of *reflection* on the service experience allowed the respondent to select several choices (reflection paper, journals, class discussion, other); the number of forms used in the course was counted (range = 0-4). The question to determine the extent to which the service component was integrated into the course had the response options of *not at all integrated* = 1; *slightly integrated* = 2; *moderately integrated* = 3; *highly integrated* = 4. For the purpose of analysis, three dummy variables were created

Table 1
Demographic Characteristics of the Sample (N = 481)

Gender	
Male	38.5%
Female	61.5%
Ethnicity	
White Nonhispanic	90.6%
Other	9.4%
Religion	
Catholic	78.8%
Other/None	21.2%
Marital Status	
Not Married	74.2%
Married	25.8%
Currently Employed	
Yes	89.6%
No	10.4%
Graduate Education	
Yes	48.0%
No	52.0%
Current Annual Income	
$15,000 or less	21.1%
$16,000-$30,000	15.4%
$31,000-$45,000	33.1%
$46,000-$60,000	17.7%
$61,000-$75,000	8.9%
$75,000 or more	8.7%
No answer	4.2%
Year of Graduation*	
1995 or before	21.2%
1996	16.8%
1997	15.8%
1998	19.5%
1999	26.6%
Major*	
Arts/Humanities	10.8%
Natural Science	13.7%
Business	23.5%
Human Sciences	48.9%
No Answer	2.9%
College Service*	
None	13.1%
General Only	21.4%
Service-Learning Only	27.4%
General and Service-learning	27.8%
High Quality Service-learning	
Hours ≥ 10	36.9%
Reflection ≥ 2 forms	33.1%
Integration ≥ moderate	36.9%

* Does not sum to 100% due to rounding error.

with high quality = 1; else = 0 (high quality = at least 10-15 hours; at least 2 forms of reflection and at least moderately integrated). Those who did not do service-learning received a score of zero for each dummy variable.

Three behavioral outcome variables were represented by single items to which respondents answered either *yes* or *no*: (a) whether respondents participated in any *community service* in the previous year, (b) whether they were a *member of any community organizations*, and (c) whether they had participated in a postgraduate service *immersion* experience such as Americorps or the Peace Corps. Another binary behavioral outcome measure was whether or not employed respondents were currently employed in a *service-related job* (education, nonprofit, government, health care, social work). A single item assessed the number of *hours per week of volunteer service* performed during the past year, offering six response choices (*none* = 0; *one hour or less* = 1; *2 to 5 hours* = 2; *6 to 10 hours* = 3; *11 to 20 hours* = 4; *more than 20 hours* = 5).

Outcomes also included three attitude measures. Seven items comprised a measure of importance of *personal responsibility* toward improving the well-being of people and communities in need (alpha = .79). Scale items included: "I feel I can have an

impact on solving problems in my community" and "It is important to me personally to have a career that involves helping other people." Ten items comprised a scale of importance *community/society responsibility* to improve the well-being of people in need (alpha = .77) and included items such as: "We should create programs to address specific social problems" and "Communities should provide social services to their members in need." Items for these two scales were adapted from the Higher Education Research Institute (HERI) 2001 College Student Survey (HERI, 2001) and the Social and Personal Responsibility Scale (Conrad & Hedin, 1981), as well as from a working paper on social justice initiatives at the College (Center for Values and Service, 1999). In addition, a four-item scale assessed the *importance of becoming involved in political or social action* (alpha = .82; adapted from HERI, 2001) and included items such as: "It is important to me personally to influence the political structure" and "It is important to me personally to participate in advocacy or political action groups." All of the items comprising these measures used a five-point Likert-type response format (scored 1 to 5), indicating the extent to which the respondent agreed or disagreed with the statement. Items were scored so that higher scores represented higher levels of the attitude measured.

Table 2

Results of Chi-Square and One-Way ANOVA Analyses of Relationship between Categories of Undergraduate Service Participation and Alumni Service Attitudes and Behaviors

	College Service Participation				
	No Service (N = 63)	SL only (N = 103)	CS only (N = 132)	SL + CS (N = 182)	Total Sample (N = 480)
	Chi-Square Analyses				
Performed Any Service In Past Year	39.7% ‡	49.0%	61.4%	72.5%	60.1%***
Participated in Service Immersion	1.6% ‡	2.0%	5.3%	12.1%	6.7%***
Currently Hold Job In Service Field+	26.5% ‡	37.2%	44.4%	59.4%	46.1%***
Current Member Of Community Organization	33.3%	18.6%	29.5%	41.2%	32.2%***
	ANOVA Analyses				
# of Hours of Service Past 12 months	.67 ‡ (.99)	.75 (.88)	.95 (1.03)	1.22 (1.10)	.97*** (1.05)
Attitude toward Personal Responsibility	3.81 ‡ (.46)	3.95 (.47)	4.11 (.43)	4.18 (.46)	4.06*** (.47)
Attitude toward Community Responsibility	3.81 ‡ (.43)	3.99 (.38)	4.03 (.37)	4.11 (.39)	4.02*** (.40)
Attitude Toward Personal Political Involvement	2.88 ‡ (.77)	3.10 (.87)	3.18 (.77)	3.27 (.81)	3.16** (.81)

Note: + Total number employed (*N* = 373) used for this analysis.
* $p < .05$, ** $p < .01$, *** $p < .001$; ‡ Value < for those performing any kind of service in college ($p < .05$).

Table 3

Results of Logistic Regression Analyses Predicting Alumni Service-Related Outcomes

Criterion = Participated in Any Community Service in Past Year (*N* = 479)

Predictor	*B*	Wald	Nagelkerke R^2 Change
Block 1:			
Part. in generic comm. service	.928	22.08***	.062
Block 2 (Simultaneous regression):			
Part. in generic comm. service	.958	23.05***	
Part. in service-learning	.462	5.60*	.015

Criterion = Participated in Service Immersion (*N* = 479)

Predictor	*B*	Wald	Nagelkerke R^2 Change
Block 1:			
Part. in generic comm. service	1.704	7.69**	.062
Block 2 (Simultaneous regression):			
Part. in generic comm. service	1.742	8.01**	
Part. in service-learning	.827	3.83*	.022
Block 3 (Simultaneous regression):			
Part. in generic comm. service	1.624	6.90**	
Part. in service-learning	-.235	0.12	
Part. in quality service-learning (Hours ≥10)	1.376	4.69*	.034

Criterion = Currently Employed in Service-Related Job (*N* = 373)

Predictor	*B*	Wald	Nagelkerke R^2 Change
Block 1:			
Part. in generic comm. service	.819	12.92**	.047
Block 2 (Simultaneous regression):			
Part. in generic comm. service	.865	14.02***	
Part. in service-learning	.572	6.87**	.024
Block 3 (Simultaneous regression):			
Part. in generic comm. service	.790	11.39***	
Part. in service-learning	.121	0.18	
Part. in quality service-learning (Hours ≥ 10)	.719	6.01*	.021

Criterion = Current Member of any Community Organization (*N* = 479)

Predictor	*B*	Wald	Nagelkerke R^2 Change
Block 1:			
Part. in generic comm. service	.577	7.13**	.021
Block 2 (Simultaneous regression):			
Part. in generic comm. service	.583	7.24**	
Part. in service-learning	.129	.41	.002
Block 3 (Simultaneous regression):			
Part. in generic comm. service	.531	5.90*	
Part. in service-learning	-.260	0.88	
Part. in quality service-learning (Hours ≥ 10)	.591	4.57*	.013

Note. * *p* < .05, ** *p* < .01, *** *p* < .001

Results

The measures of service-learning quality indicated that a substantial portion of classes had each of the high quality components (36.9% spent at least 10 to 15 hours in service, 33.1% experienced more than one form of reflection, and 36.9% of respondents experienced a highly integrated course). These high-intensity courses represented 55.7% to 62.1% of ser-vice-learning courses (see Table 1).

Respondents were active in service as alumni (see Table 2). More than sixty percent (60.1%) had per-formed service in the last year. An overall mean of .97 on the hours of service measure suggests that respondents volunteered an average of about eight hours per month (including those who did no ser-vice. Almost half (46.1%) of those working had a job in a service field, and a third (32.2%) were mem-

Table 4

Results of Regression Analyses Predicting Level of Alumni Service-Related Outcomes

Criterion = Level of Participation in Service Past Year (N = 476)			
Predictor	R^2 Change	*Beta*	*t*
Block 1:			
Part. in generic service	.03	.18	3.93***
Block 2 (Simultaneous regression):			
Part. in generic service		.18	4.03***
Part. in service-learning	.01	.10	2.18*
Block 3 (Simultaneous regression):			
Part. in generic service		.17	3.66***
Part. in service-learning		-.02	.26
Part. in quality service-learning	.02		
(Hours ≥ 10)		.18	3.06**

Criterion = Importance of Personal Responsibility (N = 479)			
Predictor	R^2 Change	*Beta*	*t*
Block 1:			
Part. in generic service	.07	.26	5.94***
Block 2 (Simultaneous regression):			
Part. in generic service		.27	6.05***
Part. in service-learning	.01	.10	2.35*
Block 3 (Simultaneous regression):			
Part. in generic service		.26	5.87***
Part. in service-learning		-.08	1.28
Part. in quality service-learning	.03		
(Hours ≥ 10)		.12	2.08*
(High integration)		.18	3.11**

Criterion = Importance of Community Responsibility (N = 479)			
Predictor	R^2 Change	*Beta*	*t*
Block 1:			
Part. in generic service	.03	.18	4.10***
Block 2 (Simultaneous regression):			
Part. in generic service		.19	4.26***
Part. in service-learning	.02	.14	3.19**
Block 3 (Simultaneous regression):			
Part. in generic service		.19	4.33***
Part. in service-learning		.05	.84
Part. in quality service-learning	.01		
(High integration)		.15**	2.58**

Criterion = Importance of Personal Political Involvement (N = 479)			
Predictor	R^2 Change	*Beta*	*t*
Block 1:			
Part. in generic service	.02	.13	2.82**
Block 2 (Simultaneous regression):			
Part. in generic service		.13	2.90**
Part. in service-learning	.01	.08	1.81+
Block 3 (Simultaneous regression):			
Part. in generic service		.12	5.87**
Part. in service-learning		-.10	1.54
Part. in quality service-learning	.04		
(High reflection)		.15	2.66**
(High integration)		.14	2.26*

+ *p* < .10, * *p* < .05, ** *p* < .01, *** *p* < .001

bers of community organizations. Most significantly, 6.7% had participated in a major service immersion experience since graduating. In addition to service-related behaviors, respondents exhibited strongly positive attitudes toward social and personal responsibility for others in need (mean near 4 relative to a maximum score of 5). Attitudes toward political activism were less positive (mean near 3 relative to a

maximum score of 5).

The first research question is whether college participation in service-learning and community service was associated with subsequent service-related attitudes and behaviors one to six years after graduation. To examine this question several chi-square tests and analyses of variance were conducted. We first determined whether there were significant differences among the four service groupings and then conducted post hoc tests to determine whether service participants (community service and/or service-learning) had higher service-related outcomes than those who did not participate in service.

Results showed significant differences among the groups for all eight outcome measures, with the combined SL + CS group having the highest score for each outcome (see Table 2). In each case, except for whether the respondent was a current member of a community organization, a post hoc contrast showed that the alumni who had participated in some form of service had significantly higher scores on the outcome variable than did alumni who did not participate in either form of service as college students.

The second research question is whether participation in service-learning made a unique contribution (over and above non-course-related community service) to social justice attitudes and service behaviors exhibited as alumni. To answer this question, logistic regression analyses (Table 3) or multiple ordinary least squares (OLS) regression analyses (Table 4) were conducted to control for the relationship between generic community service and the outcome measures when examining the relationship of service-learning to the outcomes. This analytical approach is similar to that used by Vogelgesang and Astin (2000).

Results showed that student participation in generic community service accounted for significant variation for all outcomes (see Block 1, Tables 3 and 4). Participation in service-learning as a student explained additional significant variance (1% to 2% more) in predicting all dichotomous outcome variables except whether one was currently involved in a community organization (see Block 2, Table 3). Participation in service-learning as a student explained additional significant variance (1% to 2% more) in predicting all continuous outcome variables except attitude toward the importance of personal political involvement (see Block 2, Table 4).

For the third research question — whether outcomes were related to number of hours in service activities, number of personal reflection activities, and service integration — the quality of the service experience was addressed by entering dummy variables representing the dimensions of service quality into the regression models developed for the second

research question, using a stepwise procedure.

Quality of service-learning (represented in each case by more hours of student service for the course) was independently related to all dichotomous outcomes except participation in any community service, explaining an additional 1% to 3% of the variation (see Block 3, Table 3). Once the measure of high quality was entered into a model, the service-learning variable (representing low-quality courses) was not significantly related to any of the outcomes. Thus, except for being involved in a community organization, only high-intensity service-learning was significantly associated with service-related outcomes.

For each of the outcomes in Table 4 at least one measure of service-learning quality entered the model as a significant factor; high service hours entered two models, high course integration entered three models, and high reflection entered one model. For each outcome, the service-learning variable (representing low quality courses) was no longer significant once the high quality variables were in the model, indicating that only high-quality service-learning was an improvement over no service-learning.

Discussion

The present study makes three important contributions to the field of service-learning and community service research. These findings extend the limited amount of work that has addressed the long-term effects of college community service and service-learning. The first contribution is the finding that participating in either general community service or service-learning in college has long-term positive effects on young adults' attitudes toward social and personal responsibility, the importance of personal political participation, and continued service involvement through volunteer service and holding a job in a service field. This finding underscores the value and importance of incorporating service in the undergraduate curriculum or co-curriculum with respect to educating students to be socially responsible citizens (Astin et al., 2000; Howard, 2001; Jacoby, 1996).

The second contribution is the finding that, with respect to alumni service attitudes and behaviors, participation in service-learning in college exerted an effect over and above that for general community service experience. These findings add considerably to the little research that has documented such relationships for college alumni (Warchal & Ruiz, 2004). The present study shows that these effects may extend for at least one to six years after college graduation, at a time when the alumni must be more proactive in identifying service opportunities than when they were undergraduates. Of the three attitudinal and five behavioral criterion measures, only attitudes toward the importance of getting involved in

the political process and membership in a community organization failed to show this added benefit of service-learning participation. The nature of the Catholic college that participants attended, which encourages service and reflection activities focused on social justice, may help explain why service-learning participation was more likely to show an independent effect on attitudes and behaviors that indicate a commitment to social justice, and not political participation and involvement in community organizations that may not address social justice issues directly.

The third important contribution of the present study, which has not been addressed in previous research, is the finding of the quality of service-related experiences that explain the effect of service-learning participation on postgraduation outcomes. With respect to the importance of the number of hours of service, Mabry (1998), who found such an effect among college students, suggested that a certain amount of exposure to community members and issues that the service addresses is necessary for students to construct an adequate understanding of justice issues and commit themselves to future service. In the present study, alumni were more likely to participate in a service immersion experience, be employed in a service-related job, be a member of a community organization, and performed more community service and indicated a greater personal commitment to help others only when they completed more than 10 hours of service in a service-learning course. In addition, the impact of professors integrating service into course content and providing multiple reflection activities that help students construct connections between the service and the course (Hecht, 2003) is underscored in the present study, particularly in terms of alumni attitudes toward personal responsibility and the need for political activism. This finding is consistent with research that has emphasized the importance of incorporating meaningful discussions and reflections into service-learning courses (Astin et al., 2000) and is noteworthy with respect to the long-term effect of high-quality service-learning course activity.

Although larger than those found in previous research, the effect sizes for both service-learning and general community service participation are relatively small. The largest effect sizes (3-4% of variance explained) for service-learning were shown for the effects of quality service-learning (hours, reflection, combinations of integration) on alumni attitudes toward personal responsibility and the importance of personal political involvement and involvement in service immersion. Because these criterion variables reflect personal commitments, these results show how important it is for instructors to ensure that the service component of a course requires at least 10 hours of direct service, more than one approach to reflection, and a considerable amount of integration of course content and service experiences. As previous researchers (Astin et al., 2000; Eyler, 2000; Mabry, 1998; Steinke et al., 2002) have shown, students' interaction with one another and their professors to process the service experience helps to maximize student benefits from service-learning that include constructing meaningful understandings of social and political issues.

While the present study would have been stronger methodologically had service-learning been assessed while students were in college and participants been followed prospectively, several strengths are noteworthy. This study assesses attitudes and behaviors several years after college, rather than assessing attitudes, intentions, and behaviors while still in college. Second, the use of phone interviews rather than mail surveys yielded a high response rate, which helps to minimize nonresponse bias. This study had a large sample, and unlike some large scale studies (e.g., Astin & Sax, 1998; Astin et al., 2000) that have employed single-item measures of many constructs, the attitude scales used in the present study contain several items each and achieve a high level of reliability. In addition, although the results of the study of one religious College cannot be generalized to graduates of non-religious institutions, including alumni from numerous graduating classes adds to the study's validity. The field would benefit greatly from similar studies conducted at different kinds of institutions to which results from the present study could be compared.

As Vogelgesang and Astin (2000) recognized, the examination of service-learning outcomes from the alumni perspective, as takes place in the present study, limits our understanding of how attitudes and commitments are formed over time. This study also lacks an objective assessment of the quality or nature of the community experiences in the various courses and academic disciplines represented by this study, variables that may be important to understanding how service-learning affects attitudes and behaviors in the short and long term (Vogelgesang & Astin). Future research might examine the constructivist and developmental nature of emerging adults' and young adults' attitudes, beliefs, understandings, and service behaviors and the contributions that service and service-learning make to that development.

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