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Can Service Learning and a College Climate of Service Lead to Increased Political Engagement After College?

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Introduction

There is a growing national interest in strengthening the civic mission of higher education (Boyte & Hollander, 1999; Erlich, 1999). This reflects concern with civic life in the United States and a sense that Americans are "drawing back from involvements with community affairs and politics." (Skocpol & Fiorina, 1999, p.2). As a result, renewed attention is being given to examining the role of educational institutions in their communities (Kellogg Commission, 1999) and in preparing students to assume the responsibilities of citizenship in a democratic society (Astin, 1997; Barber, 2001; Kellogg Commission, 1999; McDonnell, Timpane, & Benjamin, 2000).

Service learning – the pedagogy of connecting academic learning with meaningful community service – represents one important mechanism in higher education that challenges students to see connections between their learning and engagement in larger society. Proponents contend that, in addition to being a good way to strengthen student learning of academic material, service learning participation might strengthen students' commitment to addressing civic and social concerns (Corporation for National and Community Service). However, the field lacks empirical evidence connecting service learning with political forms of civic engagement.

The longitudinal study presented here is part of a larger study that follows the 1994 entering cohort of college students through their college years and into early adulthood, and examines many different college impacts on a number of post-college outcomes. For this paper, we specifically explored how both individual participation in service learning and an institutional climate of valuing service during college is related to political engagement during the post-college years. For this study, we examined two distinct questions: What impact, if any, does

participation in service learning *during* college have on respondents' political engagement *after* college? What impact, if any, do peer average levels of volunteerism/service in college have on respondents' political engagement in the post-college years?

Background

Historically, educational institutions have played a fundamental role in cultivating an educated citizenry in a democratic society (Barber, 1992, Dewey, 1944; Saltmarsh, 1996). In fact, citizenship education was a primary rationale for the creation of public education in the U.S. (Galston, 2001). While these efforts were initially focused on primary and secondary schooling, in more recent years expanded access to postsecondary education has resulted in an increased focus on, and scrutiny of, the role that universities and colleges play in furthering these civic purposes.

The expressed concern over the civic health of our nation comes at a time when institutions of higher education have already been facing increased scrutiny due to a number of trends and events, not the least of which is alarm over the skyrocketing costs of college, increased pressures for assessment on many levels, and a public concern that colleges and universities are not responding to the myriad problems in our society (Boyte & Hollander, 1999; Kellogg Commission, 1999). The Kellogg Commission report *Returning to Our Roots* (1999) challenges institutions to become more engaged in their community to benefit the community, but the report also addresses the potential for engagement to change the campus culture and the experience that students have. Others have focused on the role of institutions in preparing students for post-college civic engagement. This study deals explicitly with this more focused notion of preparing college students for civic engagement throughout their lives.

Empirical Studies of Civic/Political Engagement

In the field of higher education, much of the discourse as to *why* and *how* institutions should be involved in preparing individuals for civic engagement is philosophical in nature (Astin, 1997; Boyte & Hollander, 1999; Colby, Erlich, Beaumont & Stephens (2003); Dewey, 1944; Skocpol & Fiorina, 1999; Saltmarsh, 1996), but empirical work is less plentiful. Furthermore, empirical studies that focus on civic engagement have not examined service learning as a particular experience that might shape one's propensity to be politically engaged after college. Several studies have, however, examined other measures of civic and social engagement (both attitudes and behaviors) in connection with service learning. This section will first describe studies that focus on political engagement, and then share finding from research on college students and service learning.

In a large national study of adults and civic volunteerism – including political voluntarism – researchers Verba, Schlozman, and Brady (1995) examine both the motivations and the capacities of different groups of Americans to participate in civic life. They conclude that "voluntary activity in American politics suggests that the public's voice is often loud, sometimes clear, but rarely equal" (p. 509). The study finds that educational attainment is a particularly important part of the social structure, is shaped by "circumstances of initial privilege" and "has implications not only for the kinds of resources individuals accumulate but also for the kinds of citizens they become. Educated citizens are much more likely to be informed about politics and tolerant of unpopular opinions" (p. 514). Using data from the Baccalaureate and Beyond Longitudinal Follow-up study, a study of college graduates (most in their mid-twenties) also finds that educational attainment is a strong predictor of political participation (voting, campaign volunteering, attending a political rally or meeting, contributing

money to a political campaign, and writing a letter to a public official) and civic participation (Nie & Hillygus, 2001).

Both of these studies (Verba, Schlozman & Brady, 1995; Nie & Hillygus, 2001) suggest that civic voluntary involvements reinforce political participation. Another study (a national telephone survey), though, concludes that many adults choose either an electoral path to involvement (20% of the sample) or a civic path (16% of the sample) (Keeter, Zukin, Andolina & Jenkins, 2002). Only 16% of the sample reported being active in both realms. These researchers find that over half of young people (ages 15-25) are disengaged, but they also find that with help, young people are more likely to be engaged. "They respond to school-based initiatives, at least in the short-run, as well as to other invitations to involvement" (p. 2). The Keeter et. al (2002) study also explores a new area of political voice – consumer activism. Buying, or choosing not to buy, a product or service because of the political values of a company, is widespread among all age groups (except those born before 1946), and is most prevalent among those who are better educated and more affluent. Consumer activism is most prevalent among those who are already political and civic activists.

Service Learning Research

Although research findings are not entirely consistent, there are enough connections between civic voluntarism and political engagement to warrant further investigation. In recent years, the pedagogy of service learning has come to be seen as one way to get students 'practicing' civic engagement at a young age. Will service lead to social action? As Craig Rimmerman sums it up:

> The hope on the part of many service organizers is that students who participate in service activities will begin to ask why tragedies such as illiteracy, hunger, and homelessness even exist. Thus such students, many of whom are apolitical, will begin to develop a social consciousness." (1997, p. 103).

But ideas of strengthening students' sense of civic responsibility, although mentioned in definitions of service learning, are not necessarily at the forefront of any faculty member's list of course outcomes as he or she designs a course. Some faculty members and other service learning proponents speak of the potential of the pedagogy as a social justice mechanism, but there is not agreement within the service learning field that social justice ought to be an intended outcome of service learning participation (Zlotkowski, 1996; Marullo & Edwards, 2000); many instructors see service learning simply as a good way to teach academic course content. And indeed, large studies have documented that service learning has the potential to improve learning outcomes, particularly when connections between the service experience and the classroom experience are strong (Astin, Vogelgesang, Ikeda & Yee, 2000; Eyler & Giles, 1999; Gray et al., 1999).

Although civic engagement outcomes may or may not be built into service learning courses, Eyler and Giles argue persuasively that service learning and higher education "need to pay attention to the problem-solving capacities of college graduates in order to sustain lifelong constructive involvement in the community" (1999, p. 155). In particular, their study explores five elements of citizenship: Values, knowledge, skills, efficacy and commitment. Service learning can enhance each element, but the authors note that the ultimate test of the final element, commitment, is behavior. Other empirical work has supported Eyler and Giles' findings that service learning strengthens civic values, skills and efficacy (Vogelgesang & Astin, 2000). However, in these and other studies that are limited to the college years, commitment to values and ideas serves as a proxy for (longer-term) post-college behavior. This study seeks to explore whether these values and beliefs translate into strengthened civic values, attitudes, and importantly, *behaviors* in the post-college years.

Theoretical Framework

This study focuses on one aspect of civic participation: political engagement in the post-college years. Although other studies have found that level of education is positively correlated with voting and some forms of involvement (Nie & Hillygus, 2001; Verba, Schlozman & Brady, 1995), this study takes a different perspective in that it seeks to understand whether a specific activity – service learning – performed during the college years impacts post-college political engagement, and secondly whether a climate of service on a college campus can strengthen the impact of service learning participation on political engagement.

We define the climate for service as the aggregate level of students' service participation at the respective institutions of the study's respondents. (Note: Because the cohort examined in this study entered college in 1994, when service learning was not as common as it is today, we chose to focus on the effects of the college environment for *generic* service). As a result, the theoretical framework/perspective for the study is informed by an understanding of the impact of peer groups, and the extent to which college peer groups have post-college effects. In his work examining how college affects students, Astin (1993) posits a theory of peer group influence, which theorizes that students will shape their behavior to the norms and expectations of group members, and thus "students tend to become more like their peers" over the course of their college years (p. 402). Other researchers have also suggested that the peer group has a powerful effect on individual student activities and beliefs (Chickering, 1969; Feldman & Newcomb, 1969). Accordingly, we examine not only whether respondents become more like their peers, but also how their college peer environments shape post-college outcomes in ways that other environments might not. Ultimately, this longitudinal study examines how a service learning

experience and a climate of volunteerism in general affect respondents' political engagement in the post-college years.

Method

The primary focus of this study is to assess the effects of service learning during college on post-college political engagement. Further, this study explores the impact of peer average levels of volunteerism/service on respondents' political engagement in the post-college years. The following section offers analytic details of the study, including a description of the data, sample, variables, and analysis.

Sample

The data for this study was collected as part of the Cooperative Institutional Research Program (CIRP), which is sponsored by the Higher Education Research Institute (HERI) at the University of California, Los Angeles. This study was also supported by a three-year grant from the Atlantic Philanthropies U.S.A., Inc. The data for the first time point was collected when this cohort entered college in 1994, using the Student Information Form (SIF) which is designed as a pre-test for longitudinal assessments of the impact of college on students. The paper and pencil instrument surveys incoming freshmen students about their activities during high school, as well as their values, beliefs and attitudes. The data for the second time point comes from the 1998 College Student Survey (CSS). Students were administered this second survey in 1998, at the end of their fourth year in college. The 1998 CSS follow-up sample was chosen from the original students who completed the 1994 SIF, and consists of approximately 20,000 students. The data for the third time point comes from the Post-College Follow-up Survey (PCFS), administered in 2004. The PCFS follows the 1994 entering cohort and covers activities such as participation in the political process and specific ways in which individuals are involved in

serving their communities (professional organizations, non-profit work, issue-oriented involvement, etc.), as well as beliefs and values. Since the 2004 survey collects rich data on forms of political and civic participation since *leaving* college, it provides a more sophisticated dependent measure, which reflects not only voting and discussing politics, but a variety of ways in which individuals move to influence the political structure.

The initial sample for this study consisted of 8,434 respondents from 229 institutions who completed the 1994 CIRP, the 1998 CSS, and the 2004 PCFS. The final sample used for this study was different from the full longitudinal sample just described. First, we excluded students with missing data on race. We also excluded students who had marked "American Indian" for race (too small sample size). We then excluded institutions with missing data on selectivity, size, and institutions with less than 20 cases. The final sample consisted of 7,248 students nested within 150 institutions who were surveyed upon entering college in 1994, followed-up in 1998 as graduating seniors, and then followed-up again in 2004 ten years after entering college. The final sample of students consisted of 2,403 (33.2%) males and 4,845 (66.8%) females. Of these students, 6,620 (91.3%) were White, 265 (3.7%) were Asian American, 185 (2.6%) were African American, and 178 (2.5%) were Latino/a. The final sample of institutions consisted of 33 (22.0%) universities and 117 (78.0%) four-year colleges. Furthermore, 27 (18.0%) of the institutions were public, while 123 (82.0%) were private.

Political Engagement Outcome

The political engagement factor was comprised of 17 PCFS items that relate to various forms of political engagement. Factor analysis was used to confirm the general political engagement factor, and had an alpha reliability of 0.89 with factor loadings of at least 0.46 or greater. Factor loadings of each of the individual items are in parentheses.

- Please indicate the importance to you personally of each of the following:
  - Influencing the political structure (.70)
  - Influencing social values (.50)
  - Keeping up to date with political affairs (.64)
- Please indicate if you have performed any of the following since leaving college:
  - Donated money to a political candidate or cause (.64)
  - Expressed your opinion on a community or political issue by contacting or visiting a public official (.67)
  - Worked with a political group or official (.68)
  - Worn a campaign button, put a sticker on your car, or placed a sign in front of your house supporting an issue or candidate (.70)
  - Worked as a canvasser going door to door for a political candidates or a cause (.50)
  - Used on-line communication with family and friends to raise awareness about social and political issues (.65)
  - Expressed your opinion on a community or political issue by signing a written or email petition (.64)
  - Bought a certain product or service because you liked the social or political values of the company (.63)
  - *Not* bought something or boycotted it because of the social or political values of the company (.61)
  - Voted in a national election (.46)
  - Voted in a state/local election (.49)
- Since leaving college, how often have you participated in community service/volunteer work through the following organizations?
  - A political organization (e.g., political party, campaign, etc.) (.69)
- For the activities listed below, please indicate how often have you engaged in each during the past year:
  - Participated in protests/demonstrations/rallies (.58)
  - Discussed politics (.62)

Independent Variables

The principal *independent variables* of interest are all 1998 variables that relate to service: 1) a dummy variable indicating whether a student participated in *any* service learning during college – meaning that students who participated in both service learning *and* volunteering were also included in this group (a student-level variable), 2) a dummy variable indicating whether a student volunteered *only* during college (a student-level variable), and 3)

peer *average* levels of volunteerism which represents the percentage of all respondents for that institution who reported volunteering during college (an institution-level variable).

In testing the effects of service learning and volunteerism at multiple levels on student outcomes, other key variables were also included in the analyses to account for differences in precollege characteristics and college socialization, and to control for the effects of certain critical institutional characteristics (see Appendix A). These variables were selected in order to rule out alternative explanations for findings.

In general, the suggested guidelines for regression analysis is at least 10 observations for each predictor, however, the corresponding rules for hierarchical models are somewhat more complex due to the statistical consideration of multiple levels. That is, there should also be at least 10 institutions per institution-level predictor in the model (Raudenbush & Bryk, 2002). Thus, due to these methodological constraints we were very deliberate in deciding which variables to include in our final analyses, and where possible, created composites as a way to reduce the number of variables (e.g., faculty support was a factor comprised of seven items). The sets of variables included in our final analyses are presented next.

Student-level. The first set of student-level variables consisted of a freshmen pretest for political engagement as well as variables representing students' precollege characteristics. The freshman pretest factor associated with the outcome measure of overall political engagement, consisted of the following four items from the 1994 SIF: discussed politics, importance of influencing the political structure, importance of influencing social values, and importance of keeping up to date with political affairs. These 1994 SIF variables were chosen because they exactly mirror some of the items that make up the 2004 outcome. Since the 2004 survey was created specifically to assess forms of political and civic participation six years after college,

while the 1994 SIF and 1998 CSS surveys were designed for longitudinal assessments of the impact of college on students, there were only these four specific items on the 1994 SIF that exactly mirrored items on the political engagement factor on the 2004 survey. The respondents' pre-college characteristics consisted of such variables as gender, ethnicity (Whites, Asian Americans, African Americans, and Latino/as), parental education (composite of father's and mother's education), high school volunteering, high school GPA, and 1994 political orientation.

A second set of variables controlled for individual college experiences such as college major, faculty support, and other college activities. Since we had to carefully limit the number of variables to be included in the analyses, it was not possible to include all college majors individually (e.g., on the CSS survey there are 44 possible majors listed). Instead, a dichotomous major variable was created (1=Arts/Humanities/History/Political Science; 0=All other majors). These four specific major categories were combined because the students in these majors were more likely to be politically engaged post-college. The faculty support variable was a composite of seven items (α=.83). The first item asked respondents in 1998 how often they felt faculty took a personal interest in their progress (1=not at all to 3=frequently). The next six items asked how often professors at their current college provided them with the following (1=not at all to 3=frequently): advice and guidance about your educational program, respect (treated you like a colleague/peer), emotional support and encouragement, honest feedback about you skills and abilities, intellectual challenge and stimulation, and an opportunity to discuss coursework outside of class.

Two other variables in this set consisted of whether a student joined a fraternity or sorority and whether a student worked full-time (both items are dichotomous: 0=not marked; 1=marked). There was a composite variable indicating frequency of involvement in

curricular/co-curricular diversity activities: enrolled in an ethnic studies course, enrolled in a women's studies course, attended a racial/cultural awareness workshop, and joined a racial/ethnic student organization (0=not marked; 1=marked). And, another composite variable from the 1998 survey consisted of three items asking respondents whether or not they had participated in the following college activities: student government, in honors/advanced courses, and in leadership training (0=not marked; 1=marked). It should be noted that these last two composite measures serve to capture only the quantity (not quality) of certain types of curricular involvement and campus involvement, respectively. While these variables are not of primary substantive interest, they were included in the analyses to reduce the risk of overestimating the effects of service and service learning.

Institution-level. The institution-level control variables included institutional control (public/private), enrollment size (number of undergraduate FTE), level of selectivity, and percentage of underrepresented minority students at the institution. These variables were included because they are well-known structural differences that shape student experiences in higher education and also enable us to control for sample biases. We also included at this level the aggregate measures of the student-level variables for all the respondents within each institution so that we can better differentiate student vs. institution-level effects and rule out other potential unique culture/climate effects. Appendix A lists descriptive statistics for all the variables included in the analyses.

Analytic Approach

Our main focus, as noted earlier, is to examine the effects of individual participation in service learning and peer *average* levels of volunteerism in college on the outcome of political engagement ten years after college entry. In order to differentiate the effects of service learning

and generic volunteerism, both of these non-overlapping variables were included in the analyses (Note: Those students who participated in *both* service learning and generic volunteerism were included in the service learning group). Furthermore, because of the multilevel nature of the contextual research question – the influence of peer *average* levels of volunteerism in college on political engagement post-college – this type of analysis could only be accomplished using a multilevel methodology such as HLM.

The problems of neglecting the hierarchical or nested nature of the data gathered by using a single-level statistical model have been acknowledged and addressed by a number of researchers (e.g., Burstein, 1980; Pascarella & Terenzini, 1991; Raudenbush & Bryk, 2002). Recent developments in statistical techniques such as Raudenbush and Bryk's (2002) Hierarchical Linear Modeling (HLM), now make it possible to account for hierarchical differences in units of analysis so that institutional (e.g., peer *average* levels of volunteerism) as well as individual (e.g., student's own participation in service learning) effects can be more appropriately examined simultaneously. Nine stages of modeling will be incorporated, as each stage of modeling enables us to observe the unique effects of either certain groups of variables or our two primary variables of interest (i.e., individual participation in service learning and peer *average* levels of volunteerism in college).

The One-Way ANOVA; Model 1

The first model was a *fully unconditional* model because no predictors were specified at either Level-1 (student-level) or Level-2 (institution level). This model is equivalent to a one-way ANOVA with random effects and provides useful preliminary information about how much variation in each of the outcome lies within and between institutions. It also provides useful

information about the reliability of each institution's sample mean as an estimate of its true population mean.

In modeling stages 2 through 8, we developed *conditional* models whereby predictors were specified at either Level-1 (student-level) and/or Level-2 (institution-level). In Model 2, a conditional model was estimated, which included all the student-level background and freshmen entering characteristics, enabling us to assess the incremental variance explained by the students' predispositions at college entry. In Model 3, college experiences were added to the Level-1 model, allowing us to assess the effects of college experiences after taking into account entering background characteristics. In Model 4, generic volunteerism and service learning were then added to the Level-1 equation, allowing us to determine the incremental variance explained by these two types of service after taking into account both the entering background characteristics and college experiences. Whereas the volunteerism and service learning slopes in Model 4 were both fixed, we allowed the volunteerism slope to vary in Model 5 and the service learning slope to vary in Model 6 so that we could test whether the effects of these two types of service varied across institutions. If one or both of the effects of these types of service were found to vary across institutions, further analyses could be explored to determine what institutional characteristics predict these differences across institutions.

The institutional control variables (institutional size, control, selectivity, and percent of underrepresented minority students) were then included as predictors in the Level-2 equation for Model 7, allowing us to determine the incremental variance explained by the Level-2 predictors. In Model 8, the aggregate measures of all the student characteristics at the institution-level *except* for generic volunteerism and service learning were included in the Level-2 model,

allowing us to determine the incremental variance explained by the student-level aggregates after taking into account the institution-level control variables.

The Final Model; Model 9

The final (intercept-as-outcomes) model was also a *conditional* model because it contained both Level-1 (student-level) and Level-2 (institution-level) predictors. In the final model, the institutional aggregate *average* measure of volunteerism was added to the Level-2 model, allowing us to determine the incremental variance explained by this aggregate measure after taking into account all other predictors. The following equations (1 & 2) describe the model estimated in the final stage of the HLM analyses and provide a summary of the statistical modeling employed throughout this study for examining the direct effects of average levels of generic service and student-level service and service learning on political engagement. For the purposes of this study, the Level-2 predictors were presumed to be related to the variance in the intercept only (β_{0j}) but not to the variance in the slopes.

Level-1 for Model 9.

$$\begin{aligned} Y_{ij} = {} & \beta_{0j} + \beta_{1j}\,(\text{volunteer}) + \beta_{2j}\,(\text{service learning}) + \beta_{3j}\,(\text{gender:female}) + \\ & \beta_{4j}\,(\text{African American}) + \beta_{5j}\,(\text{Asian American}) + \beta_{6j}\,(\text{Latino/a}) + \\ & \beta_{7j}\,(\text{parental education}) + \beta_{8j}\,(\text{HS volunteering}) + \beta_{9j}\,(\text{HS GPA}) + \\ & \beta_{10j}\,(94\text{ political orientation}) + \beta_{11j}\,(94\text{ pretest}) + \beta_{12j}\,(\text{college major}) \\ & \beta_{13j}\,(\text{faculty: emotional support}) + \beta_{14j}\,(\text{joined a frat/sorority}) + \\ & \beta_{15j}\,(\text{worked full-time}) + \beta_{16j}\,(\text{involvement}) + \beta_{17j}\,(\text{curricular}) + r_{ij} \end{aligned} \qquad (1)$$

$$r_{ij} \sim N\,(0, \sigma^2)$$

where $i = 1, 2,\ldots,n_j$ students in institution j, and $j = 1, 2,\ldots, 150$ institutions. All Level-1 predictors have been grand-mean centered and all Level-2 predictors have been grand-mean centered so that the intercept term (β_{0j}) represents the adjusted mean for institution j. Including the aggregates in combination with this centering allows the compositional (or contextual) effects to be estimated directly. For example, γ_{01} represents the contextual effect of peer group

average levels of volunteerism on post-college political engagement (see Equation 2). In other words, the contextual effect of volunteerism is the increment of post-college political engagement that accrues to a student by virtue of being in his/her institution versus another. Through contextual effects, we can examine how certain educational contexts influence students.

Level-2 for Model 9.

$$\beta_{0j} = \gamma_{00} + \gamma_{01}\,(\text{AVG: volunteerism}) + \gamma_{02}\,(\text{control: private}) + \gamma_{03}\,(\text{size}) + \gamma_{04}\,(\text{selectivity}) + \gamma_{05}\,(\%\ \text{URMs}) + \gamma_{06}\,(\text{AVG: female}) + \gamma_{07}\,(\text{AVG: parented}) + \gamma_{08}\,(\text{AVG: HS volunteering}) + \gamma_{09}\,(\text{AVG: HS GPA}) + \gamma_{010}\,(\text{AVG: 94 political orientation}) + \gamma_{011}\,(\text{94 pretest}) + \gamma_{012}\,(\text{AVG: major}) + \gamma_{013}\,(\text{AVG: faculty support}) + \gamma_{014}\,(\text{AVG: frat/sorority}) + \gamma_{015}\,(\text{AVG: worked full-time}) + \gamma_{016}\,(\text{AVG: involvement}) + \gamma_{017}\,(\text{AVG: curricular}) + u_{0j} \qquad u_{0j} \sim N\,(0, \tau_{00}) \tag{2}$$

$$\beta_{1j} = \gamma_{10}$$
$$\beta_{2j} = \gamma_{20}$$
$$\vdots \qquad \vdots$$
$$\beta_{17j} = \gamma_{170}$$

In the Level-2 model, the intercept (β_{0j}) was specified as random, whereas all other coefficients were specified as fixed. The term β_{1j} represents the institutional average of the generic volunteerism slope for institution *j*, and β_{2j} represents the institutional average of the service learning slope for institution *j*. Since we did not assume that the student-level effects of generic volunteerism and service learning were constant across institutions, the variance of these two coefficients were calculated, separating parameter variance from error variance, and were tested to determine whether these effects varied across institutions. Based on the results of the chi-square tests, the β_{1j} and β_{2j} coefficients were then specified to be either fixed or random in the final model (Equation 2).

Results

The One-Way ANOVA; Model 1

Table 1 presents results from the unconditional model (i.e., one-way random-effects ANOVA base model) for the general political engagement outcome. The table shows the maximum likelihood point estimate for the grand mean and the estimated values of the within-institution variance (σ^2) and between-institution variance (τ_{00}) for the political engagement outcome. The maximum likelihood point estimate for the grand mean is 26.03. Overall, the students in our sample tend to rate themselves on the lower end of the continuum on general political engagement (ranging from 15-58).

Insert Table 1 about here

Auxiliary Statistics. Because the unconditional model had no Level-1 or Level-2 predictors, we were able to first model student-level variance as a function of variability within institutions and of variability due to between-institution differences as per Raudenbush & Bryk (2002). In other words, this decomposition of the total variance in the outcomes allowed us to determine the proportion of total variance that was due to individual differences, and the proportion that was due to institutional differences. To establish a better sense of the variation across institutions, Raudenbush & Bryk (2002) recommend examining the intraclass correlation, which represents the proportion of variance in each outcome that is due to between-institution differences. The intraclass correlation is computed by the following formula:

$$\rho = \tau_{00} / (\tau_{00} + \sigma^2)$$

Applying this formula, we found that differences in political engagement among students was to a greater extent the result of individual differences than differences in the types of institutions students attended. The results of this calculation show that only 8.6 percent of the variance in political engagement was due to between-institution differences, whereas 91.4

percent of the total variance was explained by differences among students. Thus, most of the variation in post-college political engagement was at the student-level, but a statistically significant ($p < .001$) portion of the variance still remains between individual institutions. This offers further justification for employing a multilevel analytic approach in the present study.

The Final Model; Model 9

Table 2 presents the results of the final model (Model 9). Given space constraints, we will focus the discussion on the primary variables of interest: students' level of generic volunteerism, students' level of service learning, and the peer average volunteerism level. The results of the analyses demonstrate that at the student-level, service learning had a significant positive effect on political engagement ($\gamma_{20} = .66$, $t = 2.27$; $p < .05$). In other words, students who participate in service learning as compared to those students who do no service at all tend to be more politically engaged in the post-college years. Specifically, as compared to students who do no service at all, students who participated in service learning in college tend to score on average .66 points higher on the post-college political engagement outcome. On the other hand, while generic volunteerism had a generally positive effect on political engagement, this effect was not statistically significant ($\gamma_{10} = .39$, $t = 1.56$; $p = .12$). Thus, it appears that service learning as compared to generic volunteerism has a stronger positive effect on post-college political engagement.

Although none of the Level-2 institutional characteristics were significant, a few aggregate measures proved to have a statistical effect. Of those significant aggregate measures, of particular interest to our study was the peer average level of volunteerism, which was marginally significant ($\gamma_{01} = 1.41$, $t = 1.71$; $p = .09$). The findings demonstrate at best a very modest contextual effect of peer group average levels of volunteerism. Put simply, the

contextual effect of volunteerism is the positive increment in post-college political engagement that accrues to a student by virtue of being in his/her institution versus another. In this case, however, it appears that an institutional climate of volunteerism in general has at best a very modest impact on whether service learning impacts one's post-college political engagement.

Insert Table 2 about here

Auxiliary Statistics. To establish a sense of how much of the student-level variance and institution-level variance in each outcome is accounted for by the set of predictors in the final model, we compared estimates for σ^2 and τ_{00} based on the one-way ANOVA models and each of the conditional models (Models 2-9). This also enabled us to observe the proportion of unique variance explained by our primary variables of interest: students' own generic volunteerism levels, students' own service learning levels, and peer *average* volunteerism levels. According to Raudenbush & Bryk (2002), by comparing the σ^2 and τ_{00} estimates, we can calculate indices of the *proportion reduction in variance* or *"variance explained"* at Level-1, which is calculated as:

$$\frac{\sigma^2 \text{ (unconditional model)} - \sigma^2 \text{ (conditional model)}}{\sigma^2 \text{ (unconditional model)}}$$

and also the *proportion reduction in variance* or *"variance explained"* at Level-2, which is similarly calculated as:

$$\frac{\tau_{00} \text{ (unconditional model)} - \tau_{00} \text{ (conditional model)}}{\tau_{00} \text{ (unconditional model)}}$$

The proportion of variance explained indices at Level-1 (the student-level) are reported in the top panel of Table 3, and the proportion of variance explained indices at Level-2 (the institution-level) are reported in the bottom panel of Table 3.

Insert Table 3 about here

The results show a reduction in the within-institution variance for post-college political engagement when the student-level control variables were added to the model (see top panel of Table 3). The student-level control variables reduced the within-institution variance by 12.47%. Adding college involvements and participation in service (both generic volunteerism and service learning) reduced the within-institution variance even further. For example, adding the college involvements to the model reduced the within-institution variance by 16.97%. Hence, we can conclude that the involvements in college accounted for 4.50% (16.97% – 12.47%) of the total student-level variance in Political Engagement. The unique contribution of variance explained by participation in service was much more modest: 0.05% (17.02% – 16.97%).

The results show a much greater reduction in the between-institution variance for post-college political engagement when the institution-level variables were added to the model (see bottom panel of Table 3). Adding the institution-level control variables reduced the between-institution variance by 68.84%, and adding the student-level aggregates and peer average volunteerism measure reduced it further to 80.67%. From these indices, we can conclude that the student-level aggregates and peer average volunteerism measure accounts for 11.49% and 0.34% of the total institution-level variance in post-college political engagement.

In summary, compared to the percent variance explained indices at the student-level (see top panel of Table 3), the institution-level variables included in the final model accounted for a

much larger proportion of the between-institution variability than those student-level variables did for accounting for within-institution variability. For example, after including all student characteristics in the model, the student measures explained only 17.02% of the differences among students *within* institutions. By comparison, the institutional measures accounted for 80.67% of the differences among students *between* institutions. Nevertheless, most of the variation in post-college political engagement was due more to individual differences than to differences in the types of institutions students attended, as described in the results of the first set of auxiliary statistics.

Discussion

The growing national interest in the civic mission of higher education suggests that there is an increasing empirical need to better understand how service or volunteerism in college shapes post-college commitments and behaviors. The first research question for this study sought to assess the main effects of service learning during college on political engagement for early career college graduates. The study's main findings suggested that respondents who participated in service learning during college, as compared to those who reported no service at all during college, tended to be more politically engaged in the post-college years. This main effect was present above and beyond the effects of other background and college characteristics, suggesting that the service learning experience in college does indeed have long-term benefits on political engagement throughout the respondents' early career years.

These findings are aligned with Eyler & Giles' (1999) assertion that service learning can potentially sustain lifelong constructive involvement in the community as well as Vogelgesang & Astin's (2000) findings that service learning strengthens civic values, skills and efficacy. Ultimately, the main effects of service learning on political engagement in the post-college years

were very much aligned with prior research, lending further empirical justification for service learning as a legitimate curricular practice that can serve to reinvigorate the civic missions of higher education institutions. Even more importantly, this study suggests that service learning can have a longer-term impact on political engagement, specifically.

The second research question for this study assessed the impact of peer average levels of volunteerism in college on respondents' political engagement in the post-college years, a level of analysis that extended the work of prior research. The multi-level analyses focused explicitly on the effects of the college environment for service (i.e., peer *average* levels of volunteerism) above and beyond the effects of individual-level measures. Because this cohort entered college in 1994, when service learning was not as common as it is today, we didn't examine any peer measurement for service learning. The findings for peer average levels of volunteerism were marginally significant ($p<.10$), which demonstrates, at best, a possible contextual effect of this environmental measure on the outcome of political engagement. Contextual effects (also known as compositional effects) occur when the institutional aggregate (i.e., peer average levels of volunteerism) of a student-level characteristic (e.g., student level volunteerism) impacts the outcome measure of interest, even after controlling for the effect of the student-level characteristic (Raudenbush & Bryk, 2002).

Studies of service learning or volunteerism in the past had established consistent direct effects on student civic outcomes (Eyler & Giles, 1999; Gray et al., 1999; Astin, Vogelgesang, Ikeda & Yee, 2000; Vogelgesang & Astin, 2000;), yet the majority of this research had been limited to examining individual-level activities and attitudes during the college years. This study extended existing research by also examining the effects of environmental measures, on political engagement in the post-college years. Even though most of the variation in post-college political

engagement was due to individual differences, there was also a possible contextual effect of peer *average* levels of volunteerism on the outcome of political engagement. At best, this indicated that respondents who attended institutions with higher peer *average* levels of volunteerism might also have experienced some positive effect from being in that environment, a finding with significant implications for higher education institutions interested in preserving their civic missions.

Future research should attempt to examine more closely the actual *causes* (or sources) of these possible contextual effects. Future studies should also consider exploring the effects of peer average levels of volunteerism on other post-college civic engagement outcomes. Colleges and universities that actively and intentionally establish the conditions, culture, climate, and dynamic that sustain higher levels of volunteerism among students might be reassured to know that such environments might possibly yield post-college benefits for students *above and beyond* students' own levels of service or volunteerism. In conclusion, any attempts to improve the civic mission of higher education should also take into account ways to encourage student involvement in service learning and volunteerism in general, as both of these experiences enhance the students' commitment to addressing civic and social concerns even after they leave college.

Table 1

Estimation of One-way Random-effects ANOVA Base Model

Fixed Effects	*Coefficient*	*S.E.*	*t-ratio*	*Reliability*
Overall Political Engagement:				
Intercept (γ_{00})	26.03	.20	130.09***	.77
Random Effects	*Variance Component*	*df*	*Chi-square*	
Overall Political Engagement:				
Between institution (τ_{00}) (variance of intercepts)	4.68	149	758.21***	
Within institution (σ^2)	50.04			

***p<.001

Table 2

Estimation of the Final HLM Model for OverallPolitical Engagement

Fixed Effects	Overall Political Engagement *Coefficient (S.E.)*	*t-ratio*	*p-value*
Institutional mean			
Base (γ_{00})	25.93 (.11)	244.65***	.00
AVG: volunteerism (γ_{01})	**1.41 (.82)**	**1.71†**	**.09**
Control: private (γ_{02})	.64 (.43)	1.47	.14
Institutional size (γ_{03})	-.00 (.00)	-.64	.52
Institutional selectivity (γ_{04})	-.00 (.00)	-1.11	.27
% of underrepresented students (γ_{05})	-.02 (.02)	-1.08	.28
AVG: gender: female (γ_{06})	.81 (.75)	1.08	.28
AVG: parental education (γ_{07})	.42 (.15)	2.84**	.01
AVG: HS volunteering (γ_{08})	-1.45 (1.11)	-1.31	.19
AVG: HS GPA (γ_{09})	2.48 (1.15)	2.17*	.03
AVG: 94 political orientation (γ_{010})	1.89 (.52)	3.66***	.00
AVG: 94 pretest (γ_{011})	.26 (.26)	.97	.33
AVG: college major (γ_{012})	3.26 (1.15)	2.84**	.01
AVG: faculty support (γ_{013})	-.08 (.16)	-.52	.60
AVG: joined a fraternity/sorority (γ_{014})	-.32 (.60)	-.54	.59
AVG: worked full-time (γ_{015})	1.55 (1.75)	.88	.37
AVG: College involvement (γ_{016})	-.53 (.49)	-1.09	.28
AVG: Curr/co-curricular diversity (γ_{017})	-.45 (.30)	-1.49	.14

Volunteerism (γ_{10})	**.39 (.25)**	**1.56**	**.12**
Service learning (γ_{20})	**.66 (.29)**	**2.27***	**.02**
Gender: female (γ_{30})	-.86 (.19)	-4.53***	.00
African American (γ_{40})	-1.07 (.68)	-1.56	.12
Asian American (γ_{50})	-1.57 (.40)	-3.92***	.00
Latino/a (γ_{60})	-.21 (.54)	-.39	.70
Parental education (γ_{70})	.09 (.03)	3.23**	.00
HS volunteering (γ_{80})	.53 (.13)	4.00***	.00
HS GPA (γ_{90})	-.30 (.21)	-1.44	.15
94 political orientation (γ_{100})	.66 (.14)	4.56***	.00
94 pretest (γ_{110})	.79 (.04)	19.90***	.00
College major (γ_{120})	1.81 (.22)	8.41***	.00
Faculty: emotional support (γ_{130})	.14 (.03)	4.36***	.00
Joined a fraternity/sorority (γ_{140})	-.99 (.22)	-4.50***	.00
Worked full-time (γ_{150})	1.27 (.36)	3.48**	.00
College involvement (γ_{160})	.73 (.13)	5.77***	.00
Curricular/co-curricular diversity (γ_{170})	.78 (.10)	8.41***	.00

Random Effects	*Variance Component (df)*	*Chi-square*	*p-value*
Between institution (τ_{00}) (variance of intercepts)	.89 (132)	269.44***	.00
Within institution (σ^2)	41.49		

†p<.10. *p<.05. **p<.01. ***p<.001.

Table 3

Percent of Variance Explained at Level-1 and Level-2

Variance Explained at Level-1 (σ^2)	student controls	student controls + involvements	student controls + involvements + service
Overall Political Engagement	12.47%	16.97%	17.02%

Variance Explained at Level-2 (τ_{00})	institutional controls	institutional controls + aggregates	institutional controls + aggregates + service aggregate
Overall Political Engagement	68.84%	80.33%	80.67%

Appendix A

Statistical Description of Variables

Variable	Minimum	Maximum	Mean	Std. Deviation
Student-level Variables (N=7,248 students)				
Volunteer *(0=no and 1=yes)*	0.00	1.00	0.51	0.50
Service learning *(0=no and 1=yes)*	0.00	1.00	0.33	0.47
Gender: Female *(0=male and 1=female)*	1.00	2.00	1.67	0.47
African American *(0=no and 1=yes)*	0.00	1.00	0.03	0.16
Asian American *(0=no and 1=yes)*	0.00	1.00	0.04	0.19
Latino/a *(0=no and 1=yes)*	0.00	1.00	0.03	0.15
Parental education *(2=both ≤ grammar to 16=both grad degree)*	2.00	16.00	11.36	3.23
High school volunteering *(1=not at all to 3=frequently)*	1.00	3.00	2.12	0.64
High school GPA *(1=D to 4=A or A+)*	2.00	4.00	3.57	0.42
94 Political orientation *(1=far right to 5=far left)*	1.00	5.00	2.94	0.81
94 Pretest *(4=no engagement to 15=more engagement)*	4.00	15.00	8.61	2.40
College major *(0=all others and 1=arts/humanities/history/ political science)*	1.00	2.00	1.19	0.39
Faculty: emotional support *(7=no support to 21=more support)*	7.00	21.00	17.08	2.89
Joined a fraternity/sorority *(0=no and 1=yes)*	1.00	2.00	1.23	0.42
Worked full-time while student *(0=no and 1=yes)*	1.00	2.00	1.07	0.25
Level of college involvement *(3=no involvement to 6=more involvement)*	3.00	6.00	3.80	0.86
Curricular/co-curricular diversity involvement *(4=no involvement to 8=more involvement)*	4.00	8.00	5.25	1.15
Institution-level Variables (N=150 institutions)				
AVG: volunteerism	0.00	0.84	0.50	0.16
Institutional control: (1=public and 2=private)	1.00	2.00	1.82	0.39
Size (# of undergraduate fte)	466.00	31147.00	3984.79	46.18.93
Selectivity (avg. SAT verbal + SAT math of freshman)	715.00	1330.00	1017.99	119.31
% underrepresented minorities)	1.00	95.00	8.69	10.86
AVG: female	1.00	2.00	1.67	0.15

AVG: parental education	7.27	14.58	11.11	1.41
AVG: HS performed volunteer work	1.65	2.48	2.11	0.15
AVG: High school GPA	3.09	3.90	3.55	0.17
AVG: 94 political orientation	2.04	3.97	2.97	0.38
AVG: 94 pretest	7.04	11.86	8.62	0.65
AVG: college major	1.00	1.65	1.19	0.12
AVG: faculty emotional support	14.31	19.32	17.17	0.99
AVG: joined a fraternity/sorority	1.00	1.94	1.22	0.23
AVG: worked full-time while student	1.00	1.35	1.08	0.08
AVG: college involvement	3.30	5.04	3.85	0.26
AVG: curricular diversity involvement	4.17	6.94	5.27	0.51

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