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Service Learning and Civic Responsibility: Assessing Aggregate and Individual Level Change

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This study sought to expand the extant literature regarding the effectiveness of a higher education service-learning project designed to increase students' civic and socially responsive knowledge and intentions. A class with a semester long service-learning component was administered a pre- and post-test assessment using multi-item scales to determine if a student's sense of civic responsibility would increase. Our hypothesis predicting overall mean or aggregate change in civic responsibility was not affirmed by the paired *t*-tests or analysis of covariance tests. However, using growth curve modeling, we investigated between-individual differences in within-individual change. The study's results demonstrated that significant variation in individual differences between time one and time two did exist. Particularly noteworthy was the finding that previous service-learning experience, outside the classroom setting, predicted the level of civic attitudes and predicted the level and change of civic action.

With a growth of service learning courses and activities in higher education, questions have been raised regarding how undergraduate programs using pedagogically sound instruction can prepare students to be socially aware, actively engaged citizens (Altman, 1996; Bringle, Phillips, & Hudson, 2004). Studies attempting to measure gains in civic attitudes and civic responsibility in participants of service-learning projects face numerous hurdles. First, duration and intensity of projects are identified as a major limitation in research design (Kiely, 2005; Myers-Lipton, 1998). The most frequently implemented form of service learning is the project "added on" to an existing class (Tryon et al., 2008, p. 16). When exposure is limited to several hours a week for a single semester, it is difficult to provide a depth of experience that will alter attitudes developed over a lifetime (Danzig & Szanton, 1986). The intensity of interaction between members of a service-learning project (e.g., students, faculty, and agency staff or client) is best conducted in smaller class settings, resulting in smaller sample sizes and the loss of power to detect effects (Tryon, et al.).

Second, the literature recognizes the need for more rigorous research designs including control groups, pre-tests and post-tests, use of multi-item scales, and the inclusion of appropriate control and confounding variables as covariates (Bringle et al., 2004; Danzig & Szanton, 1986; Myers-Lipton, 1998). Studies of service-learning projects of greater intensity and duration also revealed the need for examining factors including the amount of previous service (both in and outside the classroom) as well as demographic variables including gender, age, race, year in school, and other aspects of the participants (Kiely; Myers-Lipton). It has been suggested that if most of the research on the topic shows only modest gains in these attitudes, it is because so many studies have been lacking in these elements of research design (Bringle et al.).

Third, Bernacki and Jaeger (2008) reviewed the literature on service learning's impact on students' moral development and found the results to be mixed. The results of their own study (2008) revealed that while scores on moral development and orientation did not change significantly, they did find that students taking service-learning courses self-reported more positive outcomes than students taking courses without a service component. Their students engaged in service learning reported that they had become more compassionate and had a greater understanding of social problems. Bernacki and Jaeger's results are consistent with other studies (Astin, Volgelgesang, Ikeda, & Yee, 2000; Boss, 1994) that analyzed self-reported positive student outcomes. Bernacki and Jaeger stated that "such self-reported changes are important to investigate as they may represent precursors to increased levels of prosocial variables like moral reasoning and orientation" (p. 8).

In addition, Eyler and Giles (1999) offered growing evidence that service learning is effective in increasing socially responsive knowledge in students, but stated that the literature reveals the need for a greater understanding of the role that service learning plays in this increase. One possible explanation has been the relationship between positive student outcomes and student interest in the nature of the service-learning activity. Morton (1995) identified different service paradigms and proposed that student outcomes reflect the degree to which students perceive being well matched with a type of service-learning project they find interesting or meaningful. Morton looked primarily at activities related to charity (helping individuals meet immediate needs) and social change (addressing broader issues to help groups or communities). Moely, Furco, & Reed (2008) expanded Morton's descriptions of service paradigms to include students who valued both charity and social change and

those who placed little value on either category. This final category is helpful when assessing outcomes of students engaged in service learning as part of a class requirement. The results of the investigation revealed that, except for the last group, those placing little value on either type of service activity, "the match between preference and service activities was related consistently to positive outcomes" (Moely, Furco & Reed, p. 44).

Finally, Bringle and colleagues (2004) acknowledged the fact that service learning "has special characteristics" that call for additional measures to adequately assess outcomes (p. 25). This is especially true when measuring changes in traits related to socially responsive knowledge such as values or moral attitudes (Shumer, 2000). Additionally, Bringle and colleagues encouraged the use of multi-item scales in assessing service-learning outcomes and have compiled an extensive list.

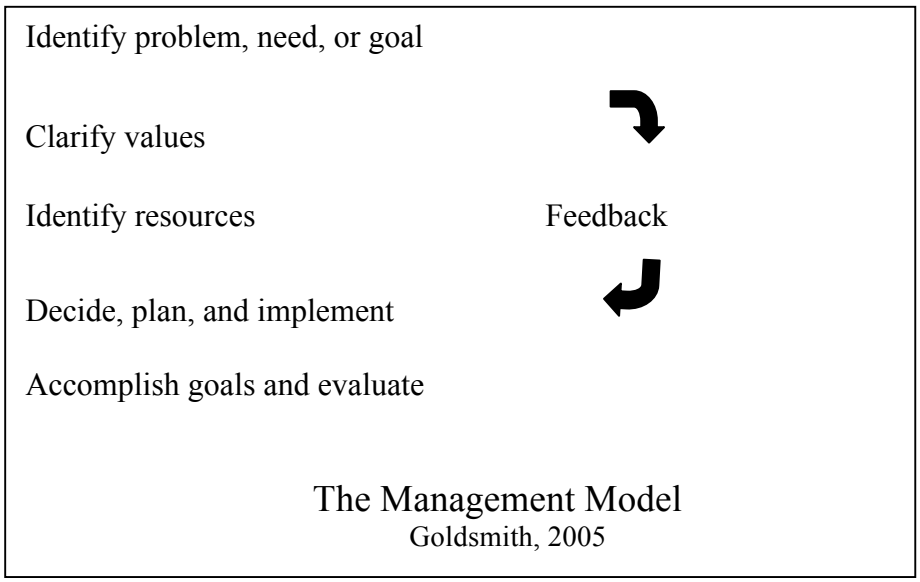
Although we conducted an intensive semester long project involving students in small groups, a faculty instructor, and selected agency staff, which resulted in a small sample size, we offset this design limitation by including and expanding upon the reported findings from the service-learning literature. Our design included (a) pre-and post-test assessments of positive outcomes assessing civic responsibility (e.g., civic attitudes and civic action), (b) control of potentially confounding variables including assessments of previous service-learning experience inside and outside the classroom, (c) service-learning projects that the student groups selected based upon their particular interests and values, and (d) multi-item scales selected for their relevance to service learning and for the quality of evidence supporting the scales' validity and reliability. In addition to the normal tests of group differences employed by previous studies (e.g., paired *t*-tests and repeated measures ANCOVA to assess aggregate level change), the current study used growth curve analyses to investigate between individual differences in within individual change. Finally, we collected qualitative data, in the form of a single, open-ended question at the end of the post-test, and asked the participant, "What do you feel was the greatest benefit achieved by your involvement in this project?"

Service Learning in Family and Consumer Sciences

The field of family and consumer sciences was founded upon principles of civic responsibility (Heggested, 2005). In the late 1800s, early leaders in the field worked to apply scientific principles to address the contemporary concerns and issues facing individuals, families, and communities. Poor conditions in food, water, housing, and the lack of resources to improve family life prompted scientists of the day to seek ways to improve living conditions for populations in both urban and rural areas in the United States. Early leaders in the field of family and consumer sciences (called domestic science at the time) are recognized as founders of social movements that combined civic responsibility with scientific principle (East, 1980; Hunt, 1942). John Dewey (1917), a proponent of experiential learning, was instrumental in getting programs of domestic science into schools in the early 1900s. He viewed course work in nutrition, food safety, clothing production, child development, and other subjects as the everyday activities that form the basis for teaching broader principles and preparing students to be socially responsive adults. The field of family and consumer sciences is still focused on improving quality of life through educational programs in middle and high schools, adult education programs, extension programs, and other forms of community outreach. Family and consumer sciences programs in higher education offer areas of study that have become very specialized, but they are still centered upon improving the quality life for individuals, families, and communities (American Association of Family and Consumer Sciences, 2009).

In 2005, a service-learning experience was incorporated into a core course within a family and consumer sciences program in a private, medium sized university. The course content, family systems and resource management, is a component of a curriculum core that spans all majors within the family and consumer sciences department including foods and nutrition, dietetics, retail merchandising, education, and general family and consumer sciences. Students tend to view each major as a separate field of study, unrelated to other majors or to the overall field of family and consumer sciences. On evaluations, students commented that they failed to see the relevance of the management process to their own field of study. The service-learning project was added to the course to create the opportunity for students from different majors to work together and to apply steps from a management model to a "real life" project in cooperation with a community agency. Requiring the students to plan and execute a service-learning project within the parameters of a management model would allow all activities to closely align with the course content. After the first year, it became evident that the project taught the students more than course content. Qualitative data suggested that the students were becoming more aware of issues within their communities. During the third year that the course was offered, quantitative data was gathered to determine if participation in the service-learning project increased the student's sense of civic responsibility as assessed by published measures of civic actions (Moely, Mercer, Ilustre, Miron, & McFarland, 2002) and civic attitudes (Mabry, 1998), as well as by an open-ended question.

Figure 1
A Management Model Provides Structure for Service-Learning Projects Within Any Discipline



The Service-Learning Project

The structure of the service-learning project was adapted from a model developed by Leach-Steffens (*Management project packet*. Department of Family and Consumer Sciences, Northwest Missouri State University, unpublished class materials). A management model (see Figure 1) by Goldsmith (2005) provided the framework for integrating service-learning with course content. The class was divided into randomly assigned groups of 3 or 4 students. Each group was responsible for locating a community agency willing to work with the students to meet a need or goal as identified by the agency. This format is consistent with the project-based service-learning model, which is the most favorable use of community agency time and resources when students are engaged in a project of short duration (Tyron et al., 2006). "Many organizations have special projects that they lack the capacity to do. Having students with specific skills do those projects can fill those capacity gaps" (Tyron et al., p. 22). Students were provided with contact information for local agencies, but were given the freedom to contact groups not included in the list. The instructor provided guidance when it was requested but allowed students to generate ideas based upon their own experiences. Thus, the list of possible community sites was longer and more varied than a list provided by the instructor and increased the likelihood of a match between student interests and the nature of the service activity. Students were given guidelines designed to ensure that each project aligned with each step of the management model. Because the first step of the management model is to work with an agency or group to identify a need, students were not allowed to join a service activity already in progress. The project had to be original and based upon the needs of the community agency. The project had to be planned, completed, and evaluated within the semester. Each student was required to contribute a minimum of twenty hours to the project.

Study Hypotheses

The extant empirical literature on change in certain outcomes as a result of participation in a service-learning project demonstrates small effects at best (Bringle et al., 2004). Explanations for such follow a number of lines of thought relative to measurement, design, and analysis. First, courses that employ a service-learning pedagogy tend to have smaller class sizes. This results in low statistical power to detect effects which may be small for the second reason: namely, that the time allotted for change to occur is limited to one semester, usually four months or less. Thus, meaningful change or change that is measurable must happen relatively quickly or it will not be detected. Further, longitudinal follow-up to assess on-going effects is not conducted, and classroom researchers are limited to two time points or pre- and post-assessments of the service-learning project during a particular semester or course period. Small numbers of students and short amounts of time combine to mitigate power for the detection of effects. Third, the

type of outcome assessed – for example, very specific questions relative to aspects of the service-learning project versus more global assessments of attitudes and actions – will also influence the ability of a study to measure meaningful differences in short time periods. Finally, as with almost all correlational or non-experimental research studies, inclusion of theoretically and empirically important covariates or statistical controls is necessary to reduce potential alternative explanations and to maximize a study's ability to detect change.

The present study faced similar challenges. First, a class of 44 students (44 students completed the pre-assessment, but due to end-of-the-semester scheduling conflicts, only 34 completed the post-assessment) participated in a service-learning project that varied across multiple groups. Second, the study's project occurred over a typical semester, a time period that began in January and ended in late April. Third, we proposed to assess change in student participants' more global assessment regarding their intentions to engage in future community service or civic actions (Moely et al., 2002) and their civic attitudes relative to community service (Mabry, 1998). However, we hypothesized that students' scores would increase between pre- and post-assessments on both dependent variables:

Civic Action and Civic Attitudes.

In addition, recent methodological and statistical advances have allowed investigators to go beyond assessments of differences in aggregated mean levels of an outcome (e.g., paired samples *t*-tests or repeated measures ANOVA or ANCOVA). Growth curve modeling (a technical explanation is beyond the scope of this article; however, interested readers are encouraged to consider Curran & Hussong, 2002; Duncan, Duncan, Strycker, Fuzhong, & Alpert, 1999; Lorenz, Wickrama, & Conger, 2004) – essentially a multi-level model – focuses on assessments of between-individual differences in within-individual change (or interindividual differences in intraindividual change) that are not considered in models examining mean differences alone. For example, one student may increase quite a bit in a measured outcome (e.g., an increase of 10) over time whereas another might not change much at all, e.g., a net change of 0, and it is possible for a third to decrease over time, e.g., a decrease of 10. If, in this case, the aggregate mean or average is inspected, it may appear stable over time. It is possible for much individual change to occur (in our example, two of three individuals experience 10 points worth of change in the outcome), while aggregate level change remains relatively stable (in our example, the net mean change would be zero; for an empirical example, see Krause, 1999). Thus, we hypothesized that such variance will occur in our sample for both outcomes regarding initial level and change.

Growth curve modeling (GCM) estimates a mean level of an outcome at one time, and a corresponding variance of that mean based upon individual respondents' scores. Significant variance of the mean or level at Time 1 provides empirical evidence of between individual differences at that point in time. Additionally, GCM estimates a slope or change in the mean level of an outcome across time points, and again, a corresponding variance of that slope or level based upon the slope or change of each participant. Significant variance of the slope provides empirical evidence of interindividual differences in intraindividual change over time. GCM allowed us to test our hypothesis that between individual differences in intra or within individual change occurred over the course of the semester. In addition, predictors of initial level and change or slope may be incorporated into a growth curve model. We investigated, as a research question, whether or not individual characteristics such as year in school, ethnicity, and individual experience with service learning (both inside and outside of the classroom) were associated with growth factors (initial level and slope) of Civic Action and Civic Attitudes.

Method

Participants

After receiving approval from the university's committee on the use of human subjects in research, student participants were assessed both before the service-learning project was presented in class and after the project was finished at the end of the semester. Forty-four undergraduate students enrolled in a Midwestern university family and consumer sciences course provided responses to the survey; at follow-up, 34 students responded. The analyzed final sample consisted of 32 females and 2 males. The mean age was 20.76 years with a standard deviation of 2.09 years, and ages ranged from 19 to 29. The sample consisted of 29 Caucasians, 3 Blacks, one Hispanic, and one listed as "other." Eleven students were classified as sophomores, 16 as juniors, and 7 as seniors.

Measures

Civic attitudes scale. The Civic Attitudes Scale (Mabry, 1998) was designed to assess participants' cognitive thinking regarding civic responsibility and consisted of five items, scaled from 1 = strongly disagree to 5 = strongly agree. An example of a question asked was, "It is important to help others even if you don't get paid for it." Cronbach's alpha, a widely used assessment of internal-consistency reliability of a scale (Cronbach, 1951; Pedhazur &

Table 1

Descriptive Statistics of Study Variables at Time 1 and Time 2 (N = 34)

Variable	Mean	SD	Min	Max	Mode
Previous Classroom SL Experience (Time 1)	2.26	1.16	1	5	1
Previous Non-Classroom SL Experience (Time 1)	3.50	1.31	1	5	5
Self Esteem (Time 1)	41.71	5.27	24	50	42
Self Esteem (Time 2)	40.71	5.05	28	50	39
Civic Attitudes (Time 1)	20.59	2.57	14	25	20
Civic Attitudes (Time 2)	20.71	2.83	13	25	19
Civic Action (Time 1)	34.12	3.52	25	40	33, 34
Civic Action (Time 2)	33.41	4.18	27	40	28, 40

Table 2

Correlation Matrix of Study Variables

	1	2	3	4	5	6	7	8	9	10
1. School Year	-									
2. Race	-.11	-								
3. Classroom SL Experience	-.12	.33***	-							
4. Non-Classroom SL Experience	-.05	-.14	.13	-						
5. Self Esteem (Time 1)	.12	-.27	.10	-.09	-					
6. Self Esteem (Time 2)	-.06	.04	.28*	.06	.64***	-				
7. Civic Attitudes (Time 1)	-.31**	-.28*	-.07	.49***	.06	.19	-			
8. Civic Attitudes (Time 2)	-.21	-.26	-.12	.48***	-.05	.17	.58***	-		
9. Civic Action (Time 1)	-.17	-.23	.01	.62***	.13	.21	.56***	.41*	-	
10. Civic Action (Time 2)	-.13	-.31*	-.01	.43***	.06	.21	.63***	.73***	.63***	-

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$ (two-tailed tests).

Schmelkin, 1991) for this scale at time 1 was .81 and at time 2 was .89.

Civic action scale. The Civic Action Scale (Moely et al., 2002) was designed to assess participants' future behavioral intentions regarding civic duties or actions, and it was comprised of eight items, scaled from 1 = strongly disagree to 5 = strongly agree. An example of a question asked was, "I plan to do some volunteer work." Cronbach's alpha for this scale at time 1 was .93 and at time 2 was .94.

Predictors and covariates. In addition to race (0= non-White; 1= White), the study measured (a) Rosenberg's (1965) Self-Esteem, a well-known 10-item scale assessing global self-esteem (alpha = .87 and .73, Time 1 and Time 2, respectively); (b) the student's year in school (e.g., 1= freshman); and (c) two questions assessing whether or not the student had previous classroom or outside the classroom service-learning or community service project experience (1 = no experience at all to 5 = a great deal of experience). Also, we collected qualitative data, in the form of a single open ended question at the end of the post test, and asked the participant, "What do you feel was the greatest benefit achieved by your involvement in this project?"

Data Analytic Procedure

SPSS 17.0 was used to conduct dependent pairs *t*-tests and repeated measures ANCOVA (Civic Action and Civic Attitudes at Time 1 and Time 2) with covariates Time 1 assessment of self-esteem, student's

year in school, and previous in the classroom and outside of the classroom community service experiences. We hypothesized that participating students would increase their civic responsibility, assessed by Civic Attitudes and Civic Action, over the course of the semester. In addition, based upon recent advances in analyzing change in a growth curve environment, including designs with two measurement occasions, this study specified and tested models of level and slope or change of Civic Attitudes and Civic Action including predictors of each. Duncan and colleagues (1999) demonstrated how to estimate growth curves to model change over two time points: errors for the repeated measures are fixed to zero, intercept loadings fixed to one, and loadings for the slope or change factor were fixed to zero (Time 1) and to one (Time 2). These models, therefore, are just identified with no degrees of freedom, but account for the multi-level structure of the data. For these analyses, we employed *Mplus* 5.2 (Muthén & Muthén, 1998-2007), a program that computes full-information maximum likelihood (FIML) estimates in the presence of missing data. This method of handling missing data is preferred over pairwise or listwise deletion of cases, producing more efficient and less biased parameter estimates (Allison, 2003; Schafer & Graham, 2002). A second benefit of *Mplus* included use of its robust maximum likelihood (RML) estimator for all analyses, providing parameter estimates with standard errors robust to non-normality and non-independence of observations (see Muthén & Muthén).

Results

Descriptive statistics and zero order correlations for all study variables both at Time 1 and Time 2 are found in Tables 1 and 2. Small changes were observed in the mean levels of the dependent or outcome variables, Civic Attitudes and Civic Action. The zero order correlations, estimated using M*plus* and FIML, revealed at least two noteworthy observations. First, previous non-classroom service-learning experience was significantly and substantively associated with pre- and post-assessments of both dependent variables, e.g., Civic Attitudes and Civic Action, with correlations ranging from .43 to .62. Second, other predictors such as School Year, and Race were also significantly associated with targeted outcomes at different time points, affirming our need to include these as predictors of level and change in the growth curve models.

Our hypothesis predicting overall mean or aggregate change in student participants' Civic Attitudes and Civic Action was not affirmed by the paired t-tests (t = .15, p = .88 and t = .73, p = .47, respectively) or the repeated measures analyses (with covariates). For example, the repeated measures multivariate test of time (Time 1 and Time 2) controlling for Time 1 self-esteem, year in school, race, and previous service-learning and community experience (both in and outside the classroom) for Civic Attitudes was not significant, $F(1, 28) = 2.44$, p = .13, η^2 = .08. For this test, the observed power was low at .33. Similar results were obtained for the same test of Civic Action: $F(1, 28) = .635$, p = .43, η^2 = .02. Again, observed power was low at .12. Thus, consistent with previous empirical work on small samples, both our dependent pairs t-tests and our repeated measures ANCOVA tests failed to reach statistical significance, and our observed power or ability to detect an effect was low.

However, based upon recent advances in the analysis of repeated measures data (Curran & Hussong, 2002; Duncan et al., 1999; Lorenz et al., 2004) we hypothesized significant interindividual differences in intraindividual change, and our univariate growth curve models affirmed this for both Civic Action and Civic Attitudes: significant variance both in level at Time 1 and in change was found. Thus, we proceeded to specify and estimate predictors of level (Time 1) and change in both outcomes, Civic Action and Civic Attitudes (see Tables 3 and 4).

Regarding Table 3, predictors of level and change in Civic Action, the first noteworthy result is that almost 50% of the variance (R^2) in the level or mean of Civic Action at Time 1 is explained by the predictors. Significant individual Time 1 predictors included Self Esteem (β = .17, p = .03) and previous Non-Classroom Service-learning Experience (β = .50, p = .003). Thus, at Time 1, students who reported higher levels of Self-Esteem and higher levels of previous service-learning exposure outside the classroom setting reported higher levels of Civic Action at Time 1, controlling for the other predictors in the model. Second, only previous Non-Classroom Service-learning Experience predicted change in Civic Action (β = -.44, p = .003), resulting in only 16% of the variance explained.

When considering the predictors of level and change in Civic Attitudes (Table 4), a similar trend is found. First, School Year (β = -.28, p = .03) and again, Non-Classroom Service-learning Experience (β = .29, p = .02), are the two significant predictors helping to explain 45% of the variance in Time 1 Level of Civic Attitudes. On average, students who were in their sophomore and junior years and who had more extensive experience with service learning outside the classroom reported higher levels of Civic Attitudes at Time 1. However, no significant predictor of change in Civic Attitudes was found, and consequently, only 5% of the variance was explained by our model. Over 44% of the sample scored between 22 and 25 on Civic Attitudes at Time 2, resulting in little variance to

Table 3

Time 1 Predictors of Level and Change in Civic Action

	Level			Change		
Time 1 Predictors	*B*	SE	β	*B*	SE	β
1. School Year	.57	.71	-.10	.73	.94	.15
2. Race	-.25	.60	-.03	-.89	1.14	-.15
3. Self Esteem	.16	.07	.17*	-.16	.14	-.22
4. Civic Attitudes	.44	.30	.26	.39	.33	.28
5. Classroom SL Experience	-.23	.47	-.06	.48	.72	.14
6. Non-Classroom SL Experience	1.78	.60	.50*	-1.31	.61	-.44*
R^2	.50			.16		

*$p \leq .05$. (two-tailed test).

Table 4

Time 1 Predictors of Level and Change in Civic Attitudes

	Level			Change		
Time 1 Predictors	*B*	SE	β	*B*	SE	β
1. School Year	-.99	.45	-28*	.26	.69	.08
2. Race	-.72	.43	-.17	.01	.57	.002
3. Self Esteem	.02	.08	.04	-.04	.08	-.08
4. Civic Action	.17	.12	.29	-.12	.18	-.21
5. Classroom SL Experience	-.22	.27	-.80	-.13	.42	-.06
6. Non-Classroom SL Experience	.62	.26	.29*	.27	.62	.13
R^2	.45			.05		

*$p \leq .05$. (two-tailed test).

explain. As a validity check, we compared our FIML results (N=44) reported above with results for those of the reduced sample (N=34) and found no major differences in the significant predictors (or their valence) of level or slope; however, we did notice a reduction in effect size, which was as expected. Finally, selected responses to our open-ended question regarding the greatest benefit experienced by students participating in this project are incorporated into the following discussion section.

Discussion

The present study sought to expand the extant literature regarding the effectiveness of a higher education service-learning project to increase students' civic and socially responsive knowledge and intentions (Altman, 1996; Eyler & Giles, 1999). In order to add to the existing knowledge base in the service-learning literature, and to provide evidence for service-learning efficacy within our own department and university, the authors adapted and implemented a service-learning project with community agencies, incorporating problem-based objectives designed around a project management model (Goldsmith, 2005) and a project packet adapted to the needs of the specific course (Leach-Steffens, unpublished class materials). Specifically, the study hypothesized that as a result of the service-learning project experience, participants' civic responsibility (assessed by validated measures of Civic Attitudes and Civic Action) would increase. In addition, based on recent advances in the analysis of change allowing investigators to assess between-individual differences in within-individual change, the authors hypothesized that significant variation in Time 1 levels of Civic Attitudes and Civic Actions would be found, and secondly, that significant variation between-individual differences in within-individual change would be found. Finally, as a research question, this study investigated Time 1 predictors of level and change in both outcome measures.

First, consistent with other studies of change over time due to implementation of service learning projects (Bernacki & Jaeger, 2008), the present study did not find significant change when comparing mean or aggregate levels of the two key outcome variables between Time 1 and Time 2. Previously, it was noted that lack of a number of research design and statistical elements may cause this paucity of little change. For example, small sample sizes, often associated with research done in single class settings where major projects are implemented, result in low power to detect effects. Change in global assessments of cognitive measures may also be more difficult to detect relative to other skill-based or behavioral assessments – it may be easier to teach and develop a skill or learned behavior than to alter thinking and intentions. Add to these limitations a shorter time over which change may occur, e.g., three to four months in a college semester, and the study's lack of findings may be explained.

Of course, poorly designed and implemented projects and poor measures are also sources of concern. Regarding the former, our students were randomly assigned to groups and during the course of group project selection, some individuals voiced negative concerns about the community agencies their group chose to serve. Thus, within groups, some members might readily engage and experience positive change in their civic responsibilities, whereas other members of the same group might tolerate the experience or worse, leading them to score lower at Time 2 on the two measures of civic responsibility than at Time 1. Regarding the latter concern, poor measures, the study's two dependent outcomes were highly correlated and difficulty assessing change in one, necessarily resulted in difficulty assessing change in the other. Also, previous work with the Civic Attitudes Scale by Mabry (1998) in a similarly designed study (pre- and post-assessment of a service-learning experience) found no significant changes for female participants. In addition, descriptive assessments show that our sample, on average, scored relatively high on the two outcomes at both time points, leading to somewhat of a ceiling effect. Other limitations to the present study included the lack of diversity in regards to both gender and ethnicity; 85% of the participants were White and 94% were female, limiting generalizability of the study's findings.

The present study did include two variables measuring previous service-learning experience inside and outside the classroom. Our campus has a high percentage of students involved in Greek life and its philanthropies. In light of this, the study assessed previous service-learning experience as a control variable (for the hypothesis of mean level change) and as a predictor variable (for the hypothesis of between individual differences in within individual change). And it is with the latter findings, the predictors of level and change in the outcomes that this study's findings are noteworthy.

Second, our hypothesis of significant differences between participants in individual change was supported for both outcomes. Individual participants reported varying levels of Civic Action and Civic Attitudes at Time 1, and likely, as a result of the service-learning project, reported varying amounts of change at Time 2. In light of these findings, the important questions to address concerned the factors at Time 1 that contributed to the initial levels and the changes in the outcomes. Over and above the demographic and control variables included in our models, previous service-learning experience *outside of the classroom* significantly and positively contributed both to Time 1 levels of Civic Action and Civic Attitudes; the greater the participant's amount of experience, the higher his or her score on the outcome. Interestingly, a high score at Time 1 led to lower levels of change or conversely, a low score at Time 1 led to greater change over time for Civic Action but not Civic Attitudes. Thus, evidence exists that for some students who entered the course with little service-learning experience, the project influenced change in their assessment of Civic Action. Inspection of the items included in the Civic Action scale revealed a distinct emphasis on future involvement with volunteer work, community, community action programs and community service organizations. We believe these items and this scale most closely tapped our students' experience with a community service organization (e.g., Easter Seals or Children's Home) and led to significant findings of change, whereas the items of the Civic Attitudes Scale tended to be more global, assessing whether or not participants thought it was worthwhile to help others or make a difference in the world.

Our quantitative findings demonstrate that as service-learning experiences become more prominent on today's campuses, it is important for researchers to measure participants' previous experience, especially if such experience might be related to the targeted outcome. Also, the previously mentioned design, measurement, and quantitative analysis points need to be addressed, e.g., sample size, specificity of items in measure corresponding to the service project, and assessments of aggregate levels of change versus individual differences in change.

While the quantitative measures and analyses were designed to assess civic responsibility and not course content, the open ended nature of the single qualitative question gave students the opportunity to respond to any aspect of the project. Of the 34 self-reported responses, one was negative. Discussion included in the negative response indicated a lack of match between the student's interest and the group's selected community

organization and service project. The remaining 33 responses were positive and suggested that the students felt well matched to the nature of the service activity. The structure of this project allowed each student group the freedom to select the agency with which they worked. The specifics of each group's service activity were determined by both the agency and the students in the group, thereby increasing the chances for a positive match between student preference for type of activity and the actual project. Four of the positive responses related to course content. Students responding in this manner identified positive outcomes related to time management, teamwork skills, and communication skills: all components of course content related to management. The remaining 28 positive responses reflected prosocial variables related to civic responsibility and to increased feelings of self worth. The literature suggests that self reported positive outcomes may be precursors to future civic action (Bernacki & Jaeger, 2008). Many of the responses directly stated intent to continue service work. Selected quotes from the responses illustrate the positive nature of the self-reported outcomes. One student noted, "I was not only able to help an organization, but I was also able to get involved in the organization and I plan on being part of it next year as well." Another student wrote, "… I think a way to really get what I want from this project is to follow up and aid in other processes of the project and its organization…I want to do more volunteering in the future, but I know I feel I help more by interacting, laughing, and teaching others (especially children)."

When attempting to measure student service-learning outcomes related to civic responsibility, there is a recognized need for well planned activities that are closely related to course content (Moely et al., 2008). Bringle and Hatcher (1999) include the processes of structure, feedback, and values clarification as necessary components for a positive learning experience. The management model used in this project incorporated all of these elements. It was part of the course content of this particular class, but may be easily adapted to provide students in any discipline a model for addressing immediate needs or critical issues within their field of study. Most curriculums are already too full to add additional classes. This management model may be used to structure projects of varying sizes within existing classes. While not all courses in a curriculum are well suited to service learning, all fields of study will include courses that will potentially benefit from this pedagogy.

Altman (1996) proposed that socially responsive knowledge should be as important a part of the undergraduate curriculum as knowledge of specific content areas and professional skills. It is likely that many content areas will continue to add service-learning components to existing courses. Consequently, small sample size and short duration will continue to pose limitations for outcome measures of these service-learning activities. The structure of the management model and a look beyond aggregate means to examine individual changes may prove beneficial for assessing service-learning outcomes in projects of this nature.

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