

Social and Cognitive Outcomes of Service Learning: Results from a Pre-Post and Control Group Comparison

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ABSTRACT

Students in an undergraduate course opted to either complete a service-learning project or write article summary papers over the course of a semester. Analyses revealed a significant increase in aspects of empathy, social responsibility, and community and personal involvement in the service-learning group, but not in the control group. The findings are discussed in terms of the social and cognitive benefits of service learning and considerations for incorporating service learning into a gerontology-related course.

Keywords: service learning, community engagement, empathy, social responsibility

BACKGROUND

Benefits of service learning have been reported for students, communities, and instructors (for a review, see Eyler, Giles, Stenson, & Gray, 2001; see also Celio, Durlak, & Dymnicki, 2011, for a review specifically pertaining to students). As a pedagogical strategy, service learning has the benefits of allowing for a diverse array of options (direct, indirect, and advocacy approaches) for instructors to encourage learning and positive development in their students. Many instructors share goals that can be achieved through the use of service learning. As a specific example, the American Psychological Association has provided guidelines for undergraduate psychology major programs (APA Guidelines 2.0, 2013). These guidelines include the recommendation for programs to adopt specific learning goals, one of which includes the goal of fostering social responsibility. This goal is, in part, described as promoting “the adoption of personal and professional values that can strengthen community relationships and contributions (APA Guidelines

2.0, 2013, p. 26). Volunteering and service learning are specifically mentioned as examples of how to foster development in this area and meet this goal.

In the current study, the focus was on benefits for students involved in service learning with an older adult population. Specifically, the current study investigated whether students who completed service-learning assignments with an older adult population would display an increase in levels of empathy, social responsibility, community and personal involvement, self-efficacy, and prosocial tendencies. Over the course of a semester, those who consented to participate in the study and opted to complete a service-learning project completed 10 hours of service at community agencies that provide services to older adults. The remaining participants (control group) also consented to participate in the study, but instead opted to complete assignments that required them to read and summarize research articles included in the course content. This research provides an investigation of the power of service learning to result in higher levels of important social constructs

within the context of a course with a gerontology focus. The findings from this study advance knowledge about the impact service learning can have on students when they engage with an older adult population and then relate their experiences to course content. The current study relates to student involvement theory (Astin, 1984) and social identity theory (Hogg, Terry, & White, 1995) as it pertains to the potential for change in students as a result of involvement (in the form of service learning), and to an opportunity for students to have experiences outside of their social category (thus potentially advancing how they see themselves within their world).

Student involvement theory (Astin, 1984) posits that with curricular engagement comes student development, and conceptualizes that this process is comprised of inputs, environments, and outcomes. Engagement in an educational setting involves students consistently committing their time and energy at varying levels, with higher levels resulting in greater development. The theory also posits that this involvement is positively related to academic performance and the goals of the educational institutions. Inputs are conceptualized as pre-existing characteristics of the students involved, while environments pertain to the array of experiences a student has, and outcomes are skills and characteristics students possess after their experiences. Similarly, social identity theory (Hogg et al., 1995) provides another standpoint from which to understand how service learning (as a form of engagement/involvement) can result in positive development for students. This theory conceptualizes that how we see ourselves is a result of the social categories we identify with, thus our own self-concept is comprised of characteristics of the categories we belong to (i.e., if people identify in the social category of a particular political orientation, then they would define themselves as either conservative or liberal). In the current study, the student participants in the service-learning group interacted with older adults outside of many of their social cate-

gories. This opportunity for intergenerational contact opens a window to seeing how social structures differ between the parties involved, thus potentially encouraging an understanding of diversity and inequalities that exist for older adults (Kruger & Pearl, 2015). Also, engaging in service learning has the potential to create the perception of being in a social group as well, and when it specifically entails a gerontological focus and involvement with older adults, it may result in a social identity that includes a commitment to and empathy for understanding and working with older adult populations.

Service Learning with Older Adults

The term older adult is used to refer to individuals age 65 or older (A Profile of Older Americans, 2016). In the United States, we live in a country with an aging population, and this is also the case for the majority of other developed countries (He, Goodkind, & Kowal, 2016). Projections are that “from 2025 to 2050, the older population is projected to almost double to 1.6 billion globally, whereas the total population will grow by just 34 percent over the same period” (He et al., 2016, p. 1). As the number of older adults increases, this will contribute to the need for more and more education and training in working with older adults in a variety of settings and the need for more support at these locations. One type of setting includes agencies that provide housing and services to frail older adults on either a long-term or short-term basis. These may include nursing homes, assisted living facilities, and hospice. The number of older adults receiving care and services at these locations will increase with the overall rise in the older adult population (Rechel, Doyle, Grundy, & McKee, 2009). Specifically, in Germany, Italy, Spain, and the United Kingdom, it is projected that between the years 2000 and 2050 there will be a 127, 81, 120, and 111 percentage increase, respectively, in the “number of recipients of institutional care” (Rechel et al., 2009, p. 13). Thus, a growing need exists

for individuals to provide support at these locations, and some of this support could take the form of students engaged in service learning.

We face an increasing challenge to provide care and services for the segment of the older adult population that needs them. Service learning provides an opportunity to address this issue in a way that may benefit older adult residents, facility staff, and students. The older adults may receive additional attention and interaction, the staff may receive additional help and subsequently less burden, and the students receive experiences that may bolster their learning about individuals, their community, course content, and themselves. Researchers have found benefits of service learning for older adults (Mitchell, Bacot, Cyr, Howard, Andreoletti, & June, 2015). In this study, college students and older adult residents of an assisted living facility met over the course of a semester to engage in discussions. At the conclusion of the study, the older adults displayed higher levels of generativity and well-being (Mitchell et al., 2015). Greene and Diehm (1995) found service-learning experiences in a nursing home led to a decrease in stereotypical views of older adults for the students involved, and that the older adults involved rated their experiences as enjoyable and educational as well. Multiple studies have revealed that when college students engage in service learning with older adults, subsequent improvements occur in their attitudes toward older adults and an increase in their desire to pursue careers associated with working with older adults (Augustin & Freshman, 2016; Gutheil, Chernesky, & Sherratt, 2006; Penick, Fallshore, & Spencer, 2014). Bringle and Kremer (1993) also found that service learning, in this case with homebound older adults, resulted in positive outcomes; specifically, at the end of a semester, students in a service-learning group rated their attitudes toward older adults as more positive compared to a group that did not engage in service. Research investigating potential benefits for staff is

sorely lacking, though the assistance provided by students may, in some part, ease their burden.

Many instructors cover aging related issues in their courses as either a topic or the focus of the course, and gerontology-focused courses are likely to increase in number in the future in response to our changing demographics. Training, education, and experience in gerontology are likely to make students more marketable and prepare them to meet the changing demands of our future employment market as it adjusts to fit with our aging population. For these reasons, it is important to understand the nature of service learning when it is completed by providing service to older adults in institutional settings.

It is also important to note that the residents of these locations are often frail older adults and thus not representative of the majority of the older adult population. In 2015, only 3.1 percent (1.5 million) of older adults resided in an institutional setting (A Profile of Older Americans, 2016). Also, the majority of older adults are not frail. To elaborate on this point, we should consider the number of older adults (individuals over age 65) who require assistance with activities of daily living (ADLs) or instrumental activities of daily living (IADLs). ADLs include personal care and mobility requirements, such as brushing hair and teeth, bathing, and getting in and out of bed or a chair. IADLs include more cognitive skill and may occur outside the home, such as balancing a checkbook, paying bills, cooking, shopping, navigating, or driving. In 2013, only “30% of community-resident Medicare beneficiaries age 65+ reported difficulty in performing one or more ADLs and an additional 12% reported difficulty with one or more IADLs” (A Profile of Older Americans, 2016, p. 14).

Nonetheless, as the number of older adults increases, there will be a proportional increase in the number of older adults residing in institutional settings (e.g., nursing homes, assisted living facilities, and hospice). Although the majority of older adults

are not frail or disabled, this still leaves millions of older adults who do reside in institutional settings. This will result in more community agencies like the institutional settings included in the current study. This also will result in an increasing number of individuals who could benefit from service learning occurring at similar locations.

Social and Cognitive Benefits of Service Learning

Previous research has supported various benefits of service learning. In their 2011 meta-analysis, Celio and colleagues reported that service learning was associated with “significant gains in five outcome areas: attitudes toward self, attitudes toward school and learning, civic engagement, social skills, and academic performance” (p. 164). These benefits were demonstrated in studies that included control group comparisons, as was the case in the current study. These authors also note that these benefits were more likely to occur in cases where what was referred to as service learning entailed linking the goals of the service learning with the curriculum and including activities that reflected those goals. The researchers examined cases of service learning that displayed this characteristic and compared them to cases that did not, and subsequently found that those that did were more likely to result in the aforementioned benefits. In the current study, the participants in the service-learning group completed assignments that required them to connect their service experiences to specific course content that had been exemplified.

Aspects of attitudes toward self have been assessed with measures of self-efficacy (Kendrick, 1996) and prosocial tendencies (Batchelder & Root, 1994). Self-efficacy has been defined generally as in Kendrick’s study, as well as how it pertains to feelings of efficacy within specific domains that the service pertains to (e.g., feeling effective at counseling within the context of receiving training and completing service in counseling). Both of these constructs have been found to increase as a re-

sult of service learning. Specifically, Batchelder and Root (1994) controlled for pre-existing differences with pre-test scores, and found that those in a service-learning course scored higher on measures of prosocial domains including reasoning and decision-making compared to students in courses that did not incorporate service learning.

Empathy, as measured with the Emotional Empathetic Tendency Scale, was also found to significantly increase as a result of service learning in Lundy’s (2007) study. This measure specifically focuses on how individuals may experience and be impacted by the emotional states of others. Other measures of empathy, including the Interpersonal Reactivity Index, include both cognitive and emotional aspects of empathy, both of which have been found to increase as a result of service learning (Boyle-Baise & Efiom, 2000).

Aspects of civic engagement have been defined previously as social responsibility (Markus, Howard, & King, 1993) and involvement (Yamauchi, Billig, Meyer, & Hofschire, 2006), both of which have been found to increase as a result of service learning. Specifically, Markus et al. found three items from the Social Responsibility Scale to be significantly higher in students who completed service-learning courses compared to those in traditional courses. These items include: “Adults should give some time for the good of their community or country,” “I make quick judgments about homeless people,” and “People ought to help those in need as a ‘payback’ for their own opportunities, fortunes, and successes” (p. 414). Yamauchi et al. assessed both aspects of community and personal involvement, and found both to be higher in a group of students who engaged in community service learning compared to those from the same peer group who were not in this service-learning program. In addition to administering this survey measure, these researchers also conducted interviews with their participants, and these revealed that the service-learning participants attributed

the change in their civic attitudes to their service-learning experiences.

The aforementioned constructs of self-efficacy, prosocial tendencies, empathy, social responsibility, and involvement all pertain to personal characteristics that may improve in students engaged in service learning. The aforementioned studies provide evidence that service-learning experiences can foster the development of these constructs. In a global sense, one could assume that being higher in levels of these constructs would result in students being more concerned for their communities and others in general, and more empowered (self-efficacy) to take action and strive to affect others in a positive way through service or otherwise. If this were the case, then this would potentially benefit populations as a whole including older adults. For example, there is strong empirical support for empathy being a major predictor of prosocial behavior (Davis, 2015). A common goal of those involved in gerontology education is to encourage intergenerational contact, with the assumption that this will lead to positive outcomes for all involved. The current study pertains to such intergenerational contact and the exploration of the subsequent impact of potentially increasing levels of these constructs for the betterment of a variety of populations.

Though published research on outcomes associated with service learning has often been positive, this is not always necessarily the case. One of the goals of the current study was to support and encourage the use of service learning that adheres to best practices (see Howard, 2001) and is conducted in a fair and ethical way for all parties involved. Unfortunately, some instances of service learning do not result in positive change, and may even result in negative outcomes. For example, Boyle-Baise (1998) conducted a case study with preservice teachers and found some participants expressed that they perceived little connection between their service experiences and the related multicultural teacher education course content; similarly, some also

reported that there was only exposure to problems during service with no education on how to resolve such problems or connection with teaching-related solutions. There were also reports of negative feelings associated with the completion of the service experience, including feeling like they were abandoning those served and creating instability in their lives. However, it is important to note that this researcher also found several positive outcomes of community service learning as the participants reported more awareness, acceptance, and knowledge about diversity as a result of their community service-learning experiences.

Also, Butin (2005) outlines potential challenges of service learning. An example of this is that it takes those involved in higher education outside of the traditional classroom, thus opening us up to an environment that is more challenging to navigate. Service learning is also political in nature, and so it may provide unique challenges for instructors who are under pressure to excel in their teaching, research, and service as it is evaluated by individuals who may not be familiar with and/or not value service learning as a pedagogical and/or scholarly endeavor. Cruz (1990) makes the important point that what might be considered service learning has the potential to result in outcomes that might perpetuate sexist and/or racist notions. This author provides the example of students from the United States completing service learning in the Philippines and says this has the potential to result in those students delivering a perhaps unintended “message of superiority” and that this could “perpetuate a colonial mentality among Filipinos” (Cruz, 1990, p. 322). Cruz encourages us to take the necessary steps to check our assumptions and examine the impact of service learning, addressing both the good and the bad. This includes instructors covering these issues with their students and striving to address the delicate and complex issues of diversity education related to service learning. Similarly, Mitchell (2008) encourages a distinction between critical service

learning and traditional service learning, such that a traditional approach involves service and reflection, while critical service learning also involves focusing on social change. This focus on social change entails incorporating assignments, discussions, and activities into service-learning programs so that the students are required to learn about, understand, and address the sources and challenges of social problems. If service learning lacks this focus, then negative outcomes such as the perception of disconnect and/or the perpetuation of stereotypes might occur. This author points out that this approach is more challenging, but necessary for true community engagement and subsequent social change.

The Current Study

The current study entailed comparing a service-learning group to a control group in order to examine the impact of service learning over the course of a semester. Based on the previous literature, the service-learning group was hypothesized to display higher levels of empathy, social responsibility, community and personal involvement, self-efficacy, and prosocial tendencies at the end of the semester compared to the control group, when statistically controlling for the influence of pre-test scores from the beginning of the semester. Though various benefits of service learning have been well addressed, the current study sought to determine the impact on these investigated factors specifically in the context of long-term care facilities that provide services to frail older adults. This is an important addition to the service-learning literature due to the aforementioned impact of our aging population.

METHOD

Participants

The initial sampling frame included 50 students enrolled in an undergraduate psychology course at an institution in the southeastern United States. Only students who consented to participate and were pre-

sent for both the pre-test and post-test data collection sessions were included in the sample. This requirement and instances of missing data reduced the number of participants, and so the subsequent analyses compare a total of 21 participants in the service-learning group to a total of 14 participants in the control group. The course was an upper level psychology class and the majority of the participants were advanced in their class level, with 73% of the sample made up of juniors and seniors. Participants ranged in age from 18 to 46 with a mean age of 22.9 (SD = 5.29). The median age was 22 and the range was 28. The sample included 36 females and 14 males. Of these participants, only those who were present during both the pre- and post-data collection sessions were included in the subsequent analyses. The subsequent sample included 35 participants who ranged in age from 18 to 46 with a mean age of 23.29 (SD = 6.1) and included 26 females and 9 males. Of these participants, 22 were European American, 10 were African American, and three rated themselves as other.

Materials

Self-efficacy. The General Self-efficacy Scale (Sherer et al., 1982) is a 17-item measure that requires participants to rate each statement on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Sample items include: "Failure makes me try harder" and "I am a self-reliant person." This scale is a widely used measure of self-efficacy (Sherer et al., 1982; Imam, 2007).

Prosocial tendencies. The Prosocial Tendencies Measure (Carlo & Randall, 2002) is a 25-item scale that requires participants to rate each statement on a Likert scale ranging from 1 (does not describe me at all) to 5 (describes me greatly). Sample items include: "When people ask me to help them, I don't hesitate" and "I think that helping others without them knowing is the best type of situation." Scores on this measure may be calculated as an overall assessment of prosocial tendencies and may also

be divided into six sub-scales, including public, anonymous, dire, emotional, compliant, and altruism.

Empathy. The Interpersonal Reactivity Index (IRI; Davis, 1983) is a 28-item scale that requires participants to rate each statement on a Likert scale ranging from 1 (does not describe me well) to 5 (describes me very well). Sample items include: "When I see someone who badly needs help in an emergency, I go to pieces" and "When I see someone being taken advantage of, I feel kind of protective towards them." Scores on this measure may be calculated as an overall assessment of empathy and may also be divided into four sub-scales, including personal distress, empathic concern, fantasy, and perspective taking.

Social responsibility. The Social Responsibility Inventory is an 8-item scale that requires participants to rate each statement on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Sample items include: "Adults should give some time for the good of their community or country" and "I feel that I can make a difference in the world." This measure was first used by Markus, Howard, and King (1993). These researchers note in their publication that the items "were developed by Jeffrey Howard and Wilbert McKeachie" (Markus et al., 1993, p. 418).

Involvement. The measure of involvement included items that assessed both community and personal involvement. Yamauchi, Billig, Meyer, and Hofschire (2006) used this as a measure of how participants view their roles in their community and the personal characteristics of the participants in terms of how they rate themselves on their likelihood to take action that is civically minded. The community involvement portion consisted of eight items rated on a 4-point Likert scale ranging from 1 (not at all) to 4 (a lot). Sample items include: "You have a responsibility for the welfare of the community" and "You would like to take action and make changes in your community." The personal involvement portion consisted of four items rated

on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Sample items include: "I like to help others" and "I am involved in activities that will make people's lives better."

Procedure

Participants completed all of the aforementioned measures twice, once at the beginning of the academic semester, and again at the end of the semester. All measures were completed during regularly scheduled class time. The measures were administered by a graduate teaching assistant in the same order (self-efficacy, social responsibility, empathy, involvement, and lastly, prosocial tendencies). The participants were given the opportunity to self-select into either the service-learning group or the control group. Being a member of either group resulted in completing assignments that were worth an equal amount of course credit.

Over the course of the semester, participants in the service-learning group completed 10 hours of community service at area agencies. Students in the service-learning group were able to choose from a list of instructor-provided locations; these included area nursing homes, assisted living facilities, and a hospice location. Throughout the semester, these students were required to complete three written assignments where they described an experience they had during their service, and noted how that experience was an example of a specific concept covered in the course. They had the option of selecting from key terms listed at the end of each chapter that was covered. The chapters pertained to biology and health; sensation, perception, and attention; memory; intellectual functioning; cognition and problem solving; personality and coping; social interaction and ties; employment and living arrangements; and death and dying (Erber, 2010). They were required to select a key term from chapters that were covered during a specific unit for each of the written assignments in order to ensure that the course content they were

relating to their service experiences was recently covered (as opposed to covered much earlier in the semester or not covered yet).

The participants enrolled in the service-learning group were prepared to complete their service hours with in-class discussions, course materials, and written and oral feedback on their service reflections and assignments. The discussions covered basic expectations for behavior, such as how to dress and act in a professional manner, and what to expect in terms of the environments and service requirements common at the locations available to them. These requirements entailed staff directed activities of visiting with residents, reading to residents, helping during meal times, and helping during scheduled activities (games, exercise, etc.). The course materials included syllabus content, handouts, and grading rubrics. The syllabus and handouts included all of the information presented in the discussions, in addition to instructions on how to complete the written assignments where they were required to reflect on their experiences and relate them to course content. At the end of the semester, those who completed the service-learning requirements completed written assignments and participated in discussions that covered their overall experiences and impressions of their service. Topics included what they learned about themselves, the locations where they served, the people at those locations, and their community, and how this related to course content and exemplified constructs covered over the course of the semester.

Students in the control group were required to complete two paper assignments that entailed finding and summarizing an empirical research article cited in the textbook chapters covered in the course. They had the opportunity to turn in these two papers on any of three potential due dates that were spaced out over the course of the semester. These assignments required finding publications that were cited in their textbook (Erber, 2010) that met the criteria of being an empirical research study (the re-

searchers collected data with participants and conducted analyses at a level the students could understand). Writing the summary entailed addressing, in their own words, key information from each of the major components of the article. They summarized the main objectives of the study, hypotheses, variables of interest, participant characteristics, measures used, study procedure, statistical tests and findings, and the researchers' primary conclusions. The articles the participants summarized came from a variety of topics covered in the textbook chapters: biology and health; sensation, perception, and attention; memory; intellectual functioning; cognition and problem solving; personality and coping; social interaction and ties; employment and living arrangements; and death and dying (Erber, 2010).

RESULTS

The main purpose of the current study was to determine if significantly higher levels of empathy, social responsibility, community and personal involvement, self-efficacy, and prosocial tendencies existed in the service-learning group compared to the control group, while accounting for pre-existing differences in the groups due to the lack of random assignment. A series of ANCOVA analyses were conducted in order to examine if group differences between the service-learning group and the control group existed, while taking into account potential preexisting differences. Using this method allows for a group comparison of the post-scores while accounting for the potential influence of differences in the pre-scores. In the following analyses, pre-scores were entered as covariates and post-scores were entered as the dependent variables. This technique for assessing group differences when measures are administered pre-post has been recommended by statisticians. Maxwell and Delaney (2004) outline the benefits of using ANCOVA analyses in this way. Specifically, they state that when "the question of interest is whether individuals in some groups change more than do indi-

viduals in other groups” (Maxwell et al., 2004, p. 428), then “ANCOVA almost always is superior to analyzing change scores” (p. 429). They go on to describe this approach as a way to “capitalize on the power and precision offered by ANCOVA”, and support this by stating that “ANCOVA properly controls both unconditional and conditional Type I error rates” (p. 430).

Due to the low sample size, some of the subsequent comments point out small, medium, or large effect size findings in addition to levels of statistical significance ($p < .05$). Cohen (1988) states the meaning of effect size as “the degree to which the phenomenon is present in the population” (p. 9). In reference to what is considered to be a small, medium, or large effect, he states that the specific values he provides are appropriate for the behavioral sciences and determined such that “small effect sizes must not be so small that seeking them amidst the inevitable operation of measurement and experimental bias and lack of fidelity is a bootless task, yet not so large as to make them fairly perceptible to the naked observation eye” (p. 13). Cohen (1988) also points out that in areas of the social sciences, many effects “are likely to be small effects as here defined, both because of the attenuation in validity of the measures employed and the subtlety of the issues fre-

quently involved” (p. 13). Effect size statistics for the following analyses are eta-squared and, per values provided by Cohen (1988), are interpreted as a small effect equaling .01 or higher, a medium effect equaling .06 or higher, and a large effect equaling .14 or higher. As statistical power is weakened in cases of low sample size, the likelihood of nonsignificant findings is increased, and so the examination of effect size statistics can provide information about the potential likelihood of significant findings assuming similar methods with a larger sample size (Cohen, 1988).

Social Outcomes

Empathy. The ANCOVA comparing the service-learning group and the control group on overall empathy scores revealed a marginally significant difference and a medium effect size, $F(1, 32) = 3.80$, $p = .06$, eta-squared = .11. The service-learning group ($M = 99.71$, $SD = 6.72$) displayed a higher level of empathy compared to the control group ($M = 92.86$, $SD = 12.71$). The four empathy sub-scales were also compared. The analysis with the Perspective Taking sub-scale revealed a significant difference between the service-learning group ($M = 27.62$, $SD = 4.43$) and the control group ($M = 25.07$, $SD = 4.63$), $F(1, 32) = 5.93$, $p = .021$, eta-squared = .16.

Table 1

ANCOVA and Descriptive Statistics for Overall Empathy Scale and Sub-scales

	<u>S-L Group</u>	<u>Control Group</u>			
	<i>M (SD)</i>	<i>M (SD)</i>	<i>F</i>	<i>p</i>	η^2
Empathy	99.71 (6.72)	92.86 (12.71)	3.80	.060*	.106
Perspective taking	27.62 (4.43)	25.07 (4.63)	5.93	.021**	.156
Fantasy	24.90 (4.99)	24.36 (4.86)	.014	.907	.000
Empathic concern	29.38 (3.73)	26.29 (5.03)	3.56	.068*	.100
Personal distress	17.81 (4.63)	17.14 (3.40)	.006	.941	.000

*marginal significant difference

**significant difference

Also, on the Empathic Concern sub-scale, there was a marginally significant difference with the service-learning group again scoring higher ($M = 29.38$, $SD = 3.73$) compared to the control group ($M = 26.29$, $SD = 5.03$), with a medium effect, $F(1, 32) = 3.56$, $p = .068$, $\eta^2 = .10$. Analysis with data from the other two sub-scales did not reveal any significant differences or effect sizes that reached a minimal level. Descriptive and inferential statistics for the ANCOVA analyses with the empathy scale and its sub-scales are displayed in Table 1.

Social responsibility. The ANCOVA comparing the service-learning group ($M = 30.67$, $SD = 3.12$) and the control group ($M = 28.57$, $SD = 2.77$) on overall social responsibility scores did not reveal a significant difference, though a small effect size was present and the means were in the expected direction, $F(1, 32) = .48$, $p = .49$, $\eta^2 = .015$. Of the eight items included in this scale, scores on the first

item (“Adults should give some time for the good of their community or country”) were marginally significantly higher in the service-learning group ($M = 4.48$, $SD = .60$) compared to the control group ($M = 3.93$, $SD = .62$), $F(1, 32) = 4.16$, $p = .05$, $\eta^2 = .115$. With the exception of item three, mean scores on all of the items in this measure were in the hypothesized direction and reached the criteria for a small effect size (with items one and four reaching a medium effect size). Descriptive and inferential statistics for the ANCOVA analyses with the social responsibility scale and its individual items are displayed in Table 2.

Involvement. The ANCOVA comparing the service-learning group ($M = 41.71$, $SD = 4.60$) and the control group ($M = 36.93$, $SD = 5.82$) on overall involvement scores revealed a marginally significant difference, $F(1, 32) = 4.06$, $p = .05$, $\eta^2 = .113$. This scale included the community involvement sub-scale and the

Table 2

ANCOVA and Descriptive Statistics for Overall Social Responsibility Scale and Items

	<u>S-L Group</u> <i>M (SD)</i>	<u>Control Group</u> <i>M (SD)</i>	<i>F</i>	<i>p</i>	η^2
Social Responsibility	30.67 (3.12)	28.57 (2.77)	.48	.49	.015*
1. Give time	4.48 (.60)	3.93 (.62)	4.16	.05	.115**
2. Impact world	3.95 (.86)	3.71 (.83)	.52	.48	.016*
3. Control circumstances	3.24 (.89)	3.14 (.66)	.04	.85	.001
4. Social justice	3.81 (.75)	3.29 (.73)	3.12	.09	.089**
5. Judging others	3.81 (1.12)	3.50 (1.02)	.43	.52	.013*
6. Help those in need	4.10 (.54)	3.79 (.58)	.80	.38	.024*
7. Pay back others	3.10 (1.22)	3.07 (.92)	1.26	.27	.038*
8. Make a difference	4.19 (.60)	4.14 (.53)	1.12	.30	.034*

*marginal significant difference

**significant difference

personal involvement sub-scale. Neither of the analyses with data from these sub-scales revealed a significant difference, though a medium effect was present for community involvement, and a small effect was present for personal involvement (see Table 3). Analysis of the data from item number six (“You understand issues that affect the well-being of your community”) on the community sub-scale did reveal a significant difference between the service-learning group ($M = 3.62$, $SD = .50$) and the control group ($M = 3.00$, $SD = .68$), $F(1, 32) = 10.22$, $p = .003$, $\eta^2 = .24$. Also, analysis of the data from item number one (“I am willing to take risks for the sake of doing what I think is right”) on the personal sub-scale revealed a significant difference between the service-learning group ($M = 4.43$, $SD = .51$) and the control group ($M = 3.93$, SD

$= .73$), $F(1, 32) = 6.74$, $p = .01$, $\eta^2 = .174$. With the exception of the last three items on the personal involvement sub-scale, mean scores on all of the items were in the hypothesized direction and reached the criteria for a small effect size (with overall involvement and overall community involvement and item four on that sub-scale reaching a medium effect size, item six reaching a large effect size, and item one on the personal involvement sub-scale reaching a large effect size). Descriptive and inferential statistics for the ANCOVA analyses with the involvement scale, sub-scales, and individual items are displayed in Table 3.

Self-efficacy and prosocial tendencies. Data from the overall scores on the self-efficacy scale and from the overall scores and sub-scales scores on the proso-

Table 3

ANCOVA and Descriptive Statistics for Overall Involvement Scale, Community and Personal Involvement Sub-scales and Individual Items

	S-L Group	Control Group	<i>F</i>	<i>p</i>	η^2
	<i>M (SD)</i>	<i>M (SD)</i>			
Involvement	41.71 (4.60)	36.93 (5.82)	4.06	.05*	.113
Community involvement	25.14 (3.71)	21.50 (4.43)	2.55	.12	.074
1. Belong	3.05 (.59)	2.86 (.86)	.37	.55	.011
2. Control	3.10 (.70)	2.79 (.80)	.72	.40	.022
3. Valued	2.86 (.85)	2.50 (1.09)	.58	.45	.018
4. Welfare	2.76 (.77)	2.00 (.88)	2.51	.12	.073
5. Pride	3.48 (.60)	3.07 (.73)	.36	.55	.011
6. Affect	3.62 (.50)	3.00 (.68)	10.22	.003**	.24
7. Action	3.52 (.60)	3.14 (.86)	.91	.35	.028
8. Changes	2.76 (.89)	2.14 (.86)	1.48	.23	.044
Personal involvement	16.57 (1.72)	15.43 (2.06)	.95	.34	.029
1. Risks	4.43 (.51)	3.93 (.73)	6.74	.01**	.174
2. Like	4.67 (.48)	4.36 (.74)	.31	.59	.009
3. Help	3.71 (1.06)	3.50 (1.02)	.07	.79	.002
4. Better	3.76 (.10)	3.64 (.93)	.08	.78	.002

*marginal significant difference

**significant difference

cial tendencies scale were examined but yielded no significant differences nor effect sizes that met the criteria for a small effect.

Cognitive Outcomes

All of the participants in the current study completed the same exams as part of their regularly scheduled class requirements. Three exams were administered over the course of the semester and scores on the third exam were used in this analysis. Using scores on the last exam of the semester allowed for a comparison of the service-learning group and the control group at a time in the semester when potential benefits of engaging in service learning would be apparent. The exams were a combination of multiple-choice and short answer items that were graded by a graduate teaching assistant who was not aware of which group each student was in. The aforementioned demographic variables were included in the following analysis as covariates. The ANCOVA was not significant, $F(1, 39) = 3.25$, $p = .079$, though a medium effect was present ($\eta^2 = .077$) with the service-learning group ($M = 88.70$, $SD = 5.95$, $n = 25$) performing better compared to the control group ($M = 87.10$, $SD = 6.57$, $n = 24$).

DISCUSSION

The current study investigated potential social and cognitive benefits of service learning completed at long-term care facilities located in the participants' local community. Data was collected at both the beginning and the end of the semester with participants in a service-learning group and a control group (participants who did not participate in service learning). ANCOVA analyses allowed for the comparison of the post-scores of these two groups while also accounting for the potential influence of preexisting differences by using their pre-scores as a covariate in the analyses. These analyses revealed positive outcomes with increases in aspects of general empathy, social responsibility, and community and personal involvement, though not with gen-

eral self-efficacy or prosocial tendencies. Specifically, scores on the overall empathy measure and its emphatic concern sub-scale were significantly higher in the service-learning group. Also, the affect and risk items included in the community and personal involvement scales of the involvement measure were significantly higher in the service-learning group. The perspective taking sub-scale from the empathy measure, the time item in the social responsibility measure, and the scores on the overall involvement measure were all marginally significantly higher in the service-learning group.

Finding that a time and energy intensive experience of involvement resulted in higher levels of these positive social constructs is congruent with student involvement theory (Astin, 1984). As described previously, this theory posits that with greater levels of involvement come greater rewards in the form of outcomes, and in the current study support was found for the outcomes of higher levels of aspects of social responsibility, empathy, and involvement. The current findings are also congruent with social identity theory (Hogg et al., 1995) as previously described. The participants who took on the role of service subsequently rated themselves as more empathic and more willing to take risks for the sake of what is right. Perhaps seeing themselves as a person in this social role contributed to a shift in how they saw themselves in terms of these personal characteristics.

Casile, Hoover, and O'Neil (2011) randomly assigned students to either complete research projects or service learning; they subsequently found at the end of the semester that those in the service-learning condition scored higher on a multiple-choice test that covered overall course content. In the current study, exam scores did not significantly differ between the self-selected service-learning and control groups, though a medium effect size was present when this comparison was made. Future studies should include similar examinations of exam scores as a measure of

cognitive learning (as opposed to affective learning, i.e., feeling as though you have learned as evidenced by self-report items).

The participants in the current study were students in a course that spanned roughly four months and over the course of that brief amount of time the experience of engaging in service-learning was enough to produce the aforementioned results, and this was the case when statistically accounting for any preexisting differences in the service and control groups with pre-test scores in the current statistical analyses. This study furthers our understanding of the impact of service learning as it pertains to students engaging with older adult populations and connecting their experiences with specific course content. Finding evidence of these positive outcomes in the current study helps to counter potential negative assumptions laypersons might make about requiring undergraduate students to complete service hours with frail older adults. For example, laypersons might assume that students would find the experience off-putting and subsequently want to be less involved with older adults and/or in their local community.

A major limitation of the current study was the low sample size due to the combination of students opting to not participate in the study, participants not attending both pre- and post-data collection sessions, missing data, and typical course enrollment numbers at the university where the study was conducted. With a larger sample size, one could reasonably expect to see more statistically significant differences on similar measures. Another major limitation was that the participants were allowed to self-select which group they were in, thus there was not random assignment to a treatment group. The lack of random assignment to the service-learning and control groups is a limitation, though collecting data at both the beginning and end of the semester and thus being able to account for any preexisting differences does bolster confidence in the current findings. Preexisting differences may have included variations in personality

traits, academic skill, meta-memory, social characteristics, and/or situational influences.

Another limitation was the use of self-report measures in assessing empathy, social responsibility, and involvement. Self-report measures have the limitations of participants potentially not being honest in their responses and/or being biased in their assessment of themselves. Future research concerning the impact of service learning on these constructs would be bolstered by the use of measures of behavioral indicators of these constructs and/or ratings provided by others (those served, those who staff agencies where service occurs, instructors, fellow students, etc.). In the current study the majority (73%) of the participants were either juniors or seniors, and this may bolster confidence in the current findings as more advanced students may be more accurate in their self-report ratings.

Another limitation of the current study is the sole focus on the impact of service learning on the student participants. In similar studies in the future, data should also be collected from those served and the staff at the service locations. This could entail both qualitative and quantitative measures to assess outcomes associated with various levels of involvement. This approach would also benefit from beginning with a needs assessment that involves both the older adult residents and the staff. Doing so would establish more of a partnership between all those involved. This would also inform researchers on constructs that should be assessed. In the current study, the participants were directed by staff to complete the aforementioned regularly scheduled tasks. Incorporating this needs assessment would involve all the major parties in the process of determining needs, activities, and desired outcomes, thus leading to more ownership of the process for everyone involved and encouraging everyone to view the experience of community engagement from multiple perspectives. It is important to address the potential benefits of service learning for the older adults themselves.

Mitchell et al. (2015) found an increase in generativity and well-being for older adult residents who participated in a series of conversations with college students engaging in service learning. Future research similar to the current study should also assess the impact of the experience for the older adults served. This could range from measures associated with psychological indicators of quality of life to physical and/or social indicators of improvement on the part of the older adult residents.

In the future, similar studies should also include measures of the impact of service learning on student knowledge of and perceptions of older adults. This would improve on merely discussing the potential benefits of intergenerational contact with the students, and directly address the bi-directional learning and positive outcomes that can occur as a result of community engagement. This would go beyond the current examination of mainly outcomes specific to characteristics of the student participants and consider the impact of this type of intergenerational contact on how students may learn about and potentially come to change their attitudes about older adulthood and older adults themselves. This would allow for a richer understanding of the impact of service learning. This would also better address one of the stated goals of this type of service learning, namely, to improve the education of students and prepare them to work with older adults.

There is also a need to investigate the potential social and cognitive benefits of service learning with active, healthy, community-dwelling older adults. In the current study, the older adult population was likely to be frail and made up of the old-old (75 to 85 years of age) and oldest-old (85 and up) segments of the older adult (those 65 and up) population. All of the community agencies were locations where students served a population in need of assistance due to poor physical and/or cognitive health (local nursing homes, assisted living facilities, etc.). Seeing a healthier and more active population may have resulted in different findings.

Future research should explore the impact of working with young-old (65 to 75 years of age) and also active older adults to investigate potentially unique aspects of working with those populations.

Service learning in higher education with older adult populations is increasingly important and needed given our aging population and subsequent demand for training, education, and experience in gerontology and working with older adults. Research addressing the positive impact of service learning on students, instructors, and communities is very diverse and large in scope (see Celio et al., 2011; Eyler et al., 2001), and the current study pertains to a specific subset of this overall body of research about service learning. The current research encourages the further exploration of potential positive impacts as they pertain to pedagogical approaches with a gerontological focus.

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