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Abstract

Purpose – The purpose is to test whether engaging in course service-learning projects can impact interpersonal oral communication confidence and skill development beyond that of traditional course research projects.

Design/methodology/approach – Three sections of a university management course were randomly assigned to have a service-learning team project, while the other three retained the traditional research team project. All projects were student-generated. Survey data was collected at the beginning of the semester and at the end four months later.

Findings – Results indicated that service-learning produces greater oral communication self-efficacy. For female students, service-learning projects also increased their interpersonal communication self-efficacy and interpersonal communication competence (but not for males).

Research limitations/implications – The sample was limited to students in a management course, service-learning projects were only completed by groups, and the study did not examine outcomes beyond 4-months. Future research could examine outcomes from projects by individuals, and examine what service-learning components create differing results between men and women.

Practical implications – Oral communication confidence can be bolstered through service-learning. Benefits may depend upon participant characteristics (like gender). Inasmuch as different service-learning projects positively impacted oral communication, students can be given flexibility in the kinds of projects they undertake.

Originality/value – This study answered the widespread calls for empirical data to support the claims of service-learning as a beneficial pedagogical tool. The experimental and measurement design overcame the limitations of some previous research. In addition, the study examined the crucial skill area of interpersonal oral communication.

Keywords: service-learning, oral communication, interpersonal, self-efficacy, empirical, gender

Service-Learning Defined

In the continual quest for and refinement of pedagogical methods to engender learning, the concept and practice of what has become known as service-learning emerged to integrate the potential benefits of experiential learning and community service (Eyler and Giles, 2007). Service-learning is considered an important and vibrant educational method, proposed to fulfil various educational goals. These include academic learning, shifting the instructor's role to facilitator, teaching ethics and social responsibility, teaching interdependence and partnership within society, and creating positive academic, personal, and civic outcomes (Bringle, Ruiz, Brown, and Reeb, 2016). Most definitions of service-learning stress similar characteristics. An example is, "a learning experience where students actively participate in service experiences that meet a real community need; the service enhances what is taught in the classroom and is integrated into the students' academic curricula; and the program provides structured time for a student to think, talk, or write about what the student did and saw during the actual service activity" (Yorio and Ye, 2012, p. 10).

There are general similarities among service-learning and other hands-on, educational-related experiences such as internships, practicums, volunteerism, and field education. Nevertheless, service-learning is accepted as a distinct pedagogical activity by professional and societal organizations such as The National Society for Experiential Education, The Corporation for National and Community Service, and the Association for Service-Learning in Education Reform (Bringle, et. al., 2006; Furco, 1996). Specifically, service-learning is distinguished by several characteristics. These include a balance between learning goals and service outcomes, an intention to equally benefit the provider and the recipient of the service, and focusing on specific classroom subjects through real-world activities. In addition, service-learning focuses on serving community/public interests, stresses reciprocal learning between the classroom and the real-world situation, and involves a relatively minimal time commitment (Furco, 1996; Simons and Cleary, 2006). On the other hand, internships for example, are more similar to having a job as an employee. As such, they instead focus on gaining career experience in a supervised setting versus serving a public interest, and involve spending a substantial amount of time at the work-site each week (Furco, 1996; Simons and Cleary, 2006).

Even with generally agreed upon definitions, the emphasis of given service-learning projects can vastly differ. Beatty (2010) observed three such categories of objectives: (1) a social change model, which focuses on empowerment and social justice (e.g., Poon, Chan, and Zhou, 2011), (2) a civic engagement model, which stresses student character development to become sensitive, active and engaged citizens (e.g., Ayub, et., al., 2015; Shumer, Lam, and Laabs, 2012; Wilson, 2011; Young and Karme, 2015), and (3) a professional growth model, which aims to increase student's cognitive learning, skill acquisition, or career training (Aldridge et. al., 2015, Casile, Hoover, and O'Neil, 2011; Shumer, Lam, and Laabs, 2012;). In addition to outcomes from the student's perspective, service-learning encompasses reciprocal interactions with community partners so that it is believed to produce mutual benefits and learning for community organizations as well (Bringle et al., 2016). Given the need to focus within any single study, the present experiment examines the experience and proposed benefits to the students (not community partners).

Recognizing the importance of the goals and outcomes of service-learning, many colleges and universities have instituted service-learning centers or departments (Steffes, 2004; Ward and Wolf-Wendel, 2000). This has spawned the incredible growth of service-learning across multiple levels of education (including integration into online / distance education courses), to adults in businesses, in private and public institutions, and to countries throughout the world (Dipadova-Stocks, 2005; Kenworthy-U'ren and Peterson, 2005; Rutti, et. al., 2106). Many articles have been published to describe, review, and summarize the nature of service learning in academia and examine it in a plethora of areas. The qualitative studies have made a profound contribution to defining, outlining, and understanding the nature and characteristics of service-learning.

From the good deal of studying and writing about service-learning, it may initially appear that we have strong empirical proof of the benefits of this pedagogy (Bringle and Hatcher, 1996; Madsen 2004). Closer scrutiny, however, reveals this may not be the case. Gray et al. (2000) observed that research related to service learning is comprised mostly of "testimonials." They argue that although service-learning programs are growing in popularity, that without reliable empirical evidence of the positive effects on student's behavioral skills, learning, or well-being, that there is little factual reason to include service-learning in courses. Others similarly state that anecdotal evidence of the benefits of service-learning is abundant, but that more rigorous testing is required in order to determine its true effect on students (Hébert and Hauf, 2015; Gibson et al., 2011). Comprehensive literary and meta-analytic reviews also conclude the need for more empirical research, and particularly for those in higher education to better understand the impact of service-learning on student behavioral skill development and learning outcomes (Dymond, Renzaglia, and Chun, 2008; Yorio and Ye, 2012). In summary then, we need more statistically sound empirical research to examine the benefits of service-learning, especially non-cognitive, behavioral skill development.

One such area of behavioral skills is communication. Many organizations suggest that interpersonal skills such as oral communication are paramount when evaluating employees and especially potential new-hires, but that most college students are lacking in these skills (Lester, et. al, 2005). Academicians have indicated that service-learning projects may contribute to practical skill development and personal growth in such areas (e.g., Toncar et al., 2003). The primary purpose of this study, then, is to empirically investigate any confidence and skill development in interpersonal oral communication that can accrue through engaging in service-learning (beyond that of traditional course research projects).

The Service-Learning Literature: Contributions and Limitations

Service-learning articles generally fall into one of five categories. One kind is conceptual: a description of benefits of service-learning based on anecdotes or logic. These articles emphasize the narrowness of higher education and argue how service-learning can expand students' experience through a broader, more robust educational activity (Godfrey, Illies, and Berry, 2005). Service-learning is thought to increase students' knowledge, skill, and social/civic natures, and provide pro-bono service to help needy people, organizations, and communities (Dipadova-Stocks, 2005; Papamarcos, 2005).

A second category are literature reviews. They include reviews and summaries of the service-learning literature according to the features, elements, activities, or participants of the service-learning (e.g., Dymond, Renzaglia, and Chun's, 2008; Rutti et. al., 2106; Tschirhart, 2002). The third category of articles are normative. They make recommendations, outlining the factors or steps to develop successful service-learning projects (e.g., Bringle, et. al., 2016; Kenworthy-U'ren and Peterson, 2005; Papamarcos, 2005). The articles in these first three categories are non-empirical (no study is done). The last two categories are comprised of empirical investigations. The fewest number of studies are in these categories.

The fourth category of studies examines the reactions or impressions from students, recipients, or community organizations participating in the service-learning experience. In general, such studies report that students and organizations believe their experience and involvement was worthwhile (e.g., Aldridge, et. al., 2015; Lester, et. al, 2005). Although such feedback is important, only the fifth (and smallest) category of articles measures outcomes or perceived benefits to students from participating in service-learning. For example, researchers have found that service-learning helps students develop greater social responsibility by recognizing the importance of ethical and moral behavior (Poon, Chan, and Zhou, 2011), and their potential for political influence (Giles and Eyler, 1994). The fewest number of studies have examined the impact of service-learning on students' knowledge, academic achievement, and behavioral skill development. For example, studies have found that service-learning can increase students overall knowledge of health needs in old age (Leung, et. al., 2012), individual taxation topics (Aldridge et. al., 2015), and general management principles (Casile, Hoover, and O'Neil, 2011).

At the same time, the findings in this smallest sub-category are sometimes inconsistent. For example, service-learning students in Gardner and Baron (1999) perceived no greater mastery of course material. Those in Lee, Rosen, and McWhirter (2014) reported multicultural competence and distress levels as more favorable, the same, and less favorable than control students. Other investigations have similarly found no significant benefit from service-learning on knowledge outcomes (Gardner and Baron, 1999; Poon, Chan, and Zhou, 2011; Strage, 2004), nor on attitudinal or behavioral outcomes (Flynn and Carter, 2016; Giles and Eyler, 1994). Thus, more research is needed that tests the proposed knowledge and skill benefits of service-learning.

There is also a need for studies that build upon and overcome systematic design factors that have limited the conclusions that can be drawn from some past research. Too often, design, measurement, and analysis choices diminish the strength of findings. For example, some studies have used restrictively small sample sizes as low as 11 to 16 (e.g., Lee, et. al, 2014). In addition, most studies examine the impact of only a single service-learning project such as service hours for a community agency, or teaching disadvantaged kids (e.g., Tucker and McCarthy, 2001). The unique characteristics of a specific project could be the cause of the findings (or lack thereof), and thus limit the potential generalizability of results to service-learning as a whole. One noteworthy exception are the students in Casile, Hoover, and O'Neil (2011) who generated 12 distinct projects. In addition, some studies do not follow preferred standards of measurement reliability and statistical analysis. For example, one-item statements are too often used to measure variables (e.g., Ocal and Altınok, 2016). Also, the analysis in some studies has been limited to calculated means or frequencies, and concluding they are "high enough" and thus that service-learning had an impact—without conducting rigorous statistical testing (e.g., Curtin, et. al., 2015). Others test large numbers of variables, and only find a couple to be significant (e.g., Aldridge, et. al., 2015). Finally, some studies have not used a control group to compare to the results of the service-learning group (e.g., Ayub, et. al., 2015).

Another factor that obscures our ability to accurately assess what we "know" about service-learning is when articles are overly sanguine when stating what other articles have found. The most common cloudiness is citing various benefits of service-learning that other studies have found, when no empirical studies were done. One example cited 19 articles to support a broad range of benefits, when in 13 of the articles no study had been done (Tschirhart ,2002).

The goal of the current study, then, is to answer the calls of previous research by conducting an experiment in the category with the fewest studies (behavior skill development), while aiming to skirt the limiting factors outlined above. Specifically, this will entail (1) completing an empirical test of the benefits of service-learning (compared to a traditional research project) on interpersonal oral communication variables, (2) following accepted design, measurement, and analysis practices (including a sufficient sample size), and (3) examining the average effect of a variety of different projects (versus a single project) to provide sufficiently generalizable results.

Service-Learning and Interpersonal Oral Communication

As described below, the behavioral skill of interpersonal oral communication was chosen because of its supreme importance within companies, its theoretical connection to service-learning, and some initial but limited research supporting those claims. For quite a while, personnel professionals have indicated that oral communication skills are among the most important competencies employers need and look for when hiring (Maes, Weldy, and Icenogle, 1997). More recent research has also validated oral communication as the number one broad-based competency sought-after by employers (Schleel and Harich, 2010). Due to the flattening of organizational structures and increased empowerment, this is even the case for new hires who can be coordinating with people from other departments, brainstorming with team members, and interacting with clients and suppliers. In fact, oral communication leads the list of applied skills and attributes most requested for entry-level jobs (85%), and becomes even more important for higher-end jobs (92%) (Schleel and Karns, 2017).

At the same time, however, feedback from companies is that the oral communication skills of employees in general and new college graduates specifically is woefully lacking (Lester, et. al, 2005). For this reason, practitioner advisory boards are recommending to university educators and administrators to include in their pedagogies ways to develop students' confidence and capability in interpersonal oral communication (Schleel and Karns, 2017). Service-learning projects have been proposed as a way to do just that (Govekar and Rishi, 2007); and thus are an important area for research investigation. Some exploratory studies have examined the relationship between service-learning and students' self-reported confidence and skill in public speaking. However, in most studies the service-learning project itself was comprised of oral communication and thus presents a possible confound (e.g., delivering an educational campaign, or presenting modules in elementary schools) (Aldridge et. al., 2015; Ayub, et. al., 2015; Tucker and McCarthy, 2001). In addition, some of these studies had no comparison to a control group, and used one-item measures.

Inasmuch as even less research has looked at interpersonal oral communication, scholars have specifically called for such studies (e.g., Tucker and McCarthy, 2001). They have theorized that community-based service learning experiences should help students develop greater interpersonal skills and sensitivity such as listening, empathy, and patience through serving non-for-profits and working to develop meaningful relationships with them (Einfeld and Collins, 2008; Lester et. al, 2005). The few studies examining similar constructs have had design limitations and/or mixed results. In one study, service-learning students reported an increase in their comfort level initiating conversations and communicating their ideas to others, but not in their perceived listening skills—all one-item measures (Govekar and Rishi, 2007). In another study teaching personal financial topics to elementary school students, neither self-ratings of listening nor empathy were statistically significant—plus, there was no control group and they used single-item measures (Sabbaghi, et al., 2013). Therefore, given the supporting theoretical arguments and yet little empirical work, it is evident that more research is needed to examine the relationship between service-learning and any impact on students' interpersonal communication.

Self-Efficacy and Skill Competency

Students have specified that one of the greatest needs to improve their oral communication, is to help them develop more self-confidence—i.e., self-efficacy (Reinsch and Shelby, 1996). Self-efficacy theory (Bandura, 1982) describes four primary sources from which people acquire information to formulate judgments of their ability in given areas. These include *enactive mastery* or actual experience, *modeling* or observing and reflecting upon others' successful behaviors, *verbal persuasion* or receiving comments regarding a person's competence, and individuals' attributions of what their *physiological states* signify about their ability. Researchers have suggested ways to create interventions that use these sources to attempt to raise persons' self-efficacy (e.g., Bandura, 1997; Gist and Mitchell, 1992). Based on a review of that literature, it seems that service-learning projects could augment students' interpersonal communication self-efficacy through oral communication mastery experiences and opportunities to view and emulate positive, similar-to-self models.

Service-learning projects often require students to communicate and interact with various groups and individuals, and possibly engage in in-class reflection activities. Plus, when students have a role in developing the service-learning projects, it expands the quantity and scope of interpersonal communication opportunities. This includes organization meetings to listen to and discuss the organization's needs, and team interactions to brainstorm, identify, design, and implement the project. Engaging in these communication activities might constitute mastery experiences that could increase their related confidence and competence. Such experiences may also provide opportunities for positive modeling of interpersonal communication from peers and service organization members (the second source for increasing self-efficacy).

Although self-efficacy theory was originally conceptualized by Bandura at the task-specific level, researchers have since broadened it to also include domain and general levels (Chen, Gully, and Eden, 2001). Domain refers to a larger topic area that specific tasks fall under; and general refers to a global disposition spanning all categories. The domain in the present study would be oral communication. Thus, in addition to benefits in specific interpersonal communication self-efficacy, benefits in domain-level oral communication self-efficacy might also accrue from service-learning projects. Based on the theory discussed in the sections above, and inasmuch as self-efficacy judgments across levels are typically correlated, it was predicted that service-learning could increase oral communication domain self-efficacy, and interpersonal communication specific self-efficacy and competence. Thus, the following hypotheses were tested:

1. Participating in a service-learning project raises students' oral communication domain self-efficacy.
2. Participating in a service-learning project raises students' interpersonal communication self-efficacy.
3. Participating in a service-learning project raises students' estimation of interpersonal communication competence.

Gender as a Moderator

Some studies suggest that student characteristics may influence their attitudes and behaviors related to service-learning. In particular, research has acknowledged that females may respond differently than males in service-learning projects. This includes being more predisposed toward getting involved in service, having a greater desire to help children, and believing service-learning experiences increase their attractiveness as a job candidate (Astin and Sax, 1998; McCarthy and Tucker, 1999). Also, for women, helping others, addressing community issues and "volunteering" are socially acceptable and rewarded behaviors. Thus, Davia and Mora (2007) found that female students tend to be more civically engaged than males, having performed more volunteer work in the preceding five years. This familiarity may assist women in taking fuller advantage of a subsequent service-learning experience.

Initial inquiry has generally supported this. One study found that female students who experienced service-learning reported more intercultural openness than did males (Engberg, 2013). Another study testing the impact of service-learning projects on end-of-semester content mastery (cumulative multiple-choice exam) found an effect for women, but not for men (Casile et. al., 2011). In still another study, in which 90% of the students were female, service-learning students reported greater improvement in an eclectic composite interpersonal skills variable (Hébert & Hauf, 2015). This sample characteristic begs the question whether gender influenced the outcome. Still in its infancy, Casile et. al. (2011) have called for future research to continue to explore gender differences in service-learning.

Related to communication, some research has identified that female and male managers and CEOs differ in their communication styles (Camden & Witt, 1983; Klein et. al., 2016). Females are likely more comfortable and confident with interpersonal communication than are males. In particular, since females tend to enjoy and spend more time in interpersonal communication than do males, during service-learning they might focus on and involve themselves more in those aspects of projects. This may cause their interpersonal communication confidence and sense of competence to be augmented more than for males. Therefore, the following hypothesis was tested:

4. Gender moderates the impact of participating in a service-learning project on interpersonal communication self-efficacy and interpersonal communication competence (more effective among females).

Methods

Sample, Measures, and Design

The sample was comprised of 188 students in one of six sections of a university management course. Fifty-six percent were Juniors, 44 percent were Seniors, and they averaged 21 years of age. Forty-one percent were females, and the vast majority were Caucasian (87.6 %). Survey data was collected at the beginning and end of the four-month semester. One hundred fifty-nine participants completed both surveys (84% response rate). Each of the sections were essentially identical, using similar amounts of discussion, lecture, in-class exercises, and videos, and similar requirements and grading criteria for exams, homework, reading, and a required group project and presentation. Three of the sections were randomly selected to have the team project be a service-learning requirement (intervention group students). The other three sections were assigned the normal group research project (control group students).

The nature of personal insight constructs such as self-efficacy or perceptions of competence lend themselves to valid measurement by self-report (Rama et. al., 2000). Thus, this was the measurement method chosen for this experiment. All variables were measured using a seven-point response scale. The two self-efficacy constructs assessed students' level of confidence to accomplish given oral communication tasks from 1=*Not at all confident* to 7=*Extremely confident. Oral communication domain self-efficacy* was measured using eight items from Betz et al.'s (2003) Expanded Communication Skills Confidence Inventory. Sample items are "Assertively present an argument" and "Express your ideas publicly" (α=.86 [t-1], and .87 [t-2]). *Interpersonal communication self-efficacy* was assessed with 12 items from the Self-Rated Communication Competence Scale (Spitzberg and Cupach, 1984). This scale was developed to tap into facets of effective interpersonal communication including empathy, listening, and support. Students rated their confidence to accomplish given tasks when communicating in conversations such as "Understand what the other person is saying and feeling" (α=.76 [t-1], and .79 [t-2]). The communication competence construct assessed students' level of agreement with given statements from 1=*Strongly disagree* to 7=*Strongly agree. Interpersonal communication competency* was measured using 12 similar items from Spitzberg and Cupach's (1984) Self-Rated Communication Competence Scale. The competence items were placed in a different order and at the end of the survey. Students were asked to visualize and then rate how they had recently been communicating in conversations. A sample item is "I have been respectful to the other person" (α=.82 [t-1], and .93 [t-2]). Finally, students also answered various demographic questions including *gender*.

Procedures and Service-Learning Intervention

Students completed the first survey on the first day of class. Project teams were comprised of four to five students (randomly assigned) who worked on their projects throughout the semester.

The primary purpose of the projects was to underscore, learn more about, and discover connections and applications between management course material and the "real world." In the control group classes, this consisted of students completing a content-based group research project that was traditionally done in the course. They chose either a topic area from the course or a business organization to research, analyze, write about, and orally report on. Intervention sections had a service-learning component instead (project and structured reflection through three journal entries as explained below). These students were given the following information:

> The purposes of this project are to integrate and apply what you are learning in this class with an actual experience, to learn more about and develop your skills, and to accomplish good within the community. You will work with your team members to design and implement a meaningful project to benefit a non-for-profit organization in meeting its service mission. This is not a passive activity where you participate in a prearranged event (such as walk-a-thons, Habitat for Humanity, etc.). Instead, this will entail identifying a nonprofit organization, meeting with the leadership of that organization to understand its mission and what service might be helpful, developing a plan to provide meaningful assistance, and implementing the service. This project will require planning, coordination, and execution of effort from all team members.

This resulted in 20 student-generated, service-learning projects. Examples of projects include: (1) Organizing and executing a 5-K race that raised $1,140 dollars for a State botanical gardens, (2) A supply drive collecting thousands of items for a local homeless shelter, (3) Interactive presentation visits with 8th grade classes connected to high drop-out-rate High Schools to teach and encourage education and how to "make it," and (4) A breast-cancer awareness and

screening event with a mobile mammogram van sponsored by the American Cancer Society. See Table I for descriptions of all service-learning projects. As explained above, students completed all phases of their projects from design and planning through implementation. Total project hours contributed by each group ranged from 26 hours to 210 hours—this total is the sum of every group member's hours (e.g., a 1-hour meeting equals 4 hours for a 4-member group). Some projects generated either cash or merchandise to be donated to their non-for-profit (ranging between $100 and $6,000). In addition, at the end of each month, students completed a structured reflection writing asking them to describe connections between what they were experiencing in their projects and concepts covered in class. During the last week of the semester, all teams (both experimental and control conditions) completed 15-20 minute in-class presentations of their project. Students then completed the second survey during the last class period.

Results

To ascertain pre-treatment similarity between students in the control and intervention groups, each of the time-1 variables was regressed on the treatment. None of the coefficients were significant, which demonstrates the similarity of the control and intervention groups at the beginning of the semester. Next, to test for any differences among classes, an ANOVA of the time-2 variables was run among the three classes within each condition. Again, none of the differences were significant; therefore, any end-of-study differences were not due to any "class effect." The descriptive statistics, reliabilities, and intercorrelations among the study variables are reported in Table II. The main effect hypotheses were tested using intercorrelations between the service-learning intervention and the dependent variables, and effect size calculations. The moderator hypothesis was tested through hierarchical moderated multiple regression (Evans, 1991). To interpret the interactions, the independent variables were centered using their means before calculating the interaction term (Stone, 1988); and the illustrative figures were created by analyzing students high and low (±1 SD) on the proposed moderator (Aiken, West, and Reno, 1991).

First, the impact of the service-learning projects was examined to test whether they bolstered students' oral communication confidence more than traditional research projects. As predicted, correlation and effect-size results indicated that the intervention was significantly related to oral communication domain self-efficacy (r=.24, $p \leq .01$; d = .49). Thus, hypothesis 1 was supported. However, the results did not show a statistically significant relationship between the intervention and interpersonal communication self-efficacy (r=.07, ns; d = .14). Nor was there a significant result when examining the impact of the service learning participation on students' estimated interpersonal communication competence (r=.13, ns; d = .26). Thus, neither hypotheses 2 or 3 were supported.

Next, moderator analyses tested the extent to which females develop greater interpersonal communication confidence and skill from participating in service learning projects than do males (results reported in Table III). Results indicated significant interaction effects for both interpersonal communication self-efficacy (β=.13, $p \leq .05$) and interpersonal communication competence (β=.17, $p \leq .05$). Further analyses of the nature of the interactions revealed that as predicted, service-learning participation did have a greater effect on females. To illustrate, graphed results for interpersonal communication self-efficacy and interpersonal communication competence are displayed as Figures I and II. They show that the intervention had no impact on the interpersonal communication confidence and competence of men, but improved these for women. Thus, hypothesis 4 was supported. Another finding from the study (that was consistent with the theory shared above but not directly hypothesized), was that women had greater self-confidence and self-assessed competence in interpersonal communication than did men. Specifically, gender (being female) was significantly related to greater interpersonal communication self-efficacy (r=.17, $p \leq .05$; d = .35) and greater interpersonal communication competence (r=.20, $p \leq .01$; d = .41).

Discussion

This section highlights some of the pedagogical and practical contributions and implications of the present study, along with limitations and directions for related future research. As outlined above, the majority of previous service-learning articles have been exploratory anecdotal accounts of the benefits of service-learning projects. Thus, one of the primary contributions of the present article is adding to the relatively small empirical literature testing potential student benefit outcomes from service-learning. Specifically, it tested (1) the broader generalizability of multiple kinds of service-learning projects, (2) the impact on important previously untested oral communication constructs (oral communication domain self-efficacy, and interpersonal communication self-efficacy and competence), and (3) the moderating effect of gender.

Overall, the findings were mixed. The service-learning projects did boost students' confidence in their ability related to oral communication in general. Inasmuch as oral communication is a crucial skill within organizations, it seems that service-learning may provide meaningful practical value for both individuals and their companies. However, for students as a whole, participating in service-learning did not benefit their interpersonal communication specifically. Service-learning did, however, significantly increase women's self-efficacy and perceptions of competence in interpersonal communication.

Why might this be? First, it is important to understand the differences between different kinds of oral communication. Whereas effective domain oral communication focuses primarily on *message sending*, on speaking and presenting ideas in public arenas; effective interpersonal communication is more a function of *message receiving*, of listening, supporting, and respecting. So, although the findings support that service-learning can benefit general oral communication for all students; specific benefits in interpersonal communication may depend upon the characteristics of the individual, such as those related to one's gender. For example, since men are typically more assertive, service-learning increased their confidence related to areas of oral communication such as expressing ideas publically, assertively presenting an argument, and presenting their approach to solving problems.

On the other hand, interpersonal communication reflects valuing people and relationships; and research has indicated that these tend to be female-oriented values (Hofstede, 1980). Women's greater value on relationships may have caused them to focus on the interpersonal aspects of the service-learning projects that allowed them to gain more from the experience. Since they are typically more aware of, and sensitive to relational aspects, they were also able to reap interpersonal communication benefits through the service-learning experiences. Specifically, their confidence and competence increased to listen to another person and understand them, to be supportive, and to be respectful and sensitive to the needs and feelings of other people. Employers overwhelmingly indicate that these skills are vitally important for obtaining employment and for job performance (Curtis, et. al., 1989); and research has shown they are connected with organizational productivity and performance (Snyder and Morris, 1984).

The present study also makes a contribution to the literature due to its design. First, inasmuch as the intervention group was compared to a control condition, the effects represent the incremental benefit of service-learning projects beyond traditional research projects. Next, testing and examining the impact of 20 different service-learning projects (versus a single project) demonstrated that many different kinds of service-learning projects can positively impact students' oral communication. Thus, a fair amount of flexibility can be given to students in the kinds of projects they undertake, and still help develop their oral communication.

Finally, there are anecdotal benefits. The projects enlivened class discussions, provided experiences to relate to concepts covered in class, and created opportunities for the students to stretch themselves personally. For example, students commented that they were initially overwhelmed and unsure; but afterwards that they felt great about being able to pull off such large, multi-faceted projects. Finally, adopting, administering, and managing this pedagogical course element can be relatively straight-forward. Students can find and direct projects themselves. It need not require any formal training by the instructor or financial expenses by the class; and the projects can be completed outside of limited in-class time.

Based on this experiment and the results, there are some limitations that present various avenues that future research could pursue. For example, researchers could investigate ways that service-learning might also increase men's interpersonal communication skills. Perhaps projects would need to be more interpersonally focused, such as working closely and more in-depth with a limited number of recipients. Or perhaps men require some instructions or training in interpersonal relationships prior to the service-project to heighten their awareness beforehand. Another question is whether using self-assessed measures was an issue in the present study. This was likely not a problem given that (1) there was no common-method variance since the relationships tested were with an experimental intervention (i.e., different sources for measurement of the IV and DVs and moderator variable), and (2) self-report is a valid and a preferred measurement method for personal insight constructs like self-efficacy (Rama et. al., 2000). Of course, the measure of interpersonal communication competence was limited to students' perceptions. Future research could include an objective measure of competence.

Next, future research could investigate whether service-learning projects conducted by individuals (versus groups as in the present study) can also produce oral communication confidence and competence development. With individual work, there would be less interaction and communication with others. Future research could also expand the longitudinal testing of service-learning past the four months tested in the present research, to shed additional light on

how long the gains made through service-learning might last. In addition, although the experiment produced results within a university class setting with traditional students, results are not inherently generalizable to other populations. Thus, future research could explore the effect with older or non-traditional students, or with employees within business organizations. Another idea is to test the effect of service-learning on other communication areas like public speaking, or on non-communication skill areas such as project management or leadership. Future research might also begin to postulate theory and design studies to test what exact mechanisms or activities within service-learning projects produce the given outcomes. This way, educators might know how they need to design their class projects in order to gain the desired skill-development benefits for their students. Finally, based on the literature review, the following two calls related to future research are extended. One, more experimental empirical research to test the proposed benefits of service-learning is still needed. Two, as authors, in our enthusiasm we need to be cautious to not overstate "findings" from past studies regarding the benefits of service-learning, so as not to promulgate the view that more is known about the benefits of service-learning than has been empirically demonstrated.

Conclusion

Researchers have suggested that to successfully build students' level of efficacy, faculty need to do more than just provide encouragement (Tucker and McCarthy, 2001). In fact, in his treatise on self-efficacy theory, Bandura (1997) indicated that educators need to design course components in ways that raise students' confidence and bring success. The results of the present experiment showed that service-learning projects can be such a pedagogical tool. Through the experience of service-learning, the students in this study used creativity, planning, organizing, group interaction, and problem-solving to complete some wonderful projects. Students benefitted through increased oral communication self-efficacy; and female students also benefited through increased confidence and competence in interpersonal communication. All then, became better prepared for the job market, and received a great feeling from having done something meaningful for others.

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Table I.

Service-learning group projects

	Organization	Description	Group Hours	Dollars Generated
1.	Homeless Sanctuary	Three drives collecting $2,670 of underwear, hygiene, and healthy snack items	61	$2,665
2.	WCA Thrift Store	Clothing drive collecting 1,000 articles to generate money for the Womens Children Alliance	78	$2,500
3.	American Cancer Society	Breast-cancer awareness event with mobile mammogram van	45	
4.	Humane Society	Dog food and item donation drives	38	$200
5.	Agency for New Americans	Organized thousands of items in four large storage units	210	
6.	Homeless Shelter	Supply drive collecting thousands of items	60	
7.	Early Education Center	Interactive instructional activity; conducted food/hygiene product drive ($350)	83	$350
8.	Book It Forward	Collected, cleaned, and donated 3,000 children's books	78	$6,000
9.	Ronald McDonald House	Toy donation drive and St. Patrick's Day activity help	41	$410
10.	Boys & Girls Club	Cleaned library and stocked it with thousands of books; created and ran two activity sessions for kids	60	
11.	State Botanical Gardens	Organized and executed inaugural 5-K race	50	$1,140
12.	Low-Income Medical Clinic	Office-related services: designed forms and filing system, and tech. training	42	$100
13.	Ronald McDonald House	Easter activity: BBQ, egg/candy hunt, craft/activity stations, and Easter Bunny visit	102	$250
14.	Homeless Center	Upscale lunch event with donated specialty vendors for 175 homeless people	72	$1,200
15.	Women's & Children Center	Created 8 film vignettes to raise awareness of teen/young adult dating violence.	120	
16.	Jr. High School	Interactive visits with 8th graders to teach and encourage education	64	
17.	Troubled Youth Thrift Store	Developed tech. tools for cataloging, spreadsheet sharing, and data management	32	
18.	Ronald McDonald House	Recreational event for families; and collected/donated 30 new sport's toys	61	
19.	The Bicycle Project	Construction work at shop, and donation drive of 13 bikes	29	$2,000
20.	American Cancer Society	Developed and ran Bark-for-Life event with Easter-egg hunt, photo area, etc.	26	

Table II.

Means, standard deviations (SD), scale reliabilities, and intercorrelations among study variables

Variables	Mean	SD	1	2	3	4	5
1. Service-learning intervention			--				
2. Oral communication domain self-efficacy	5.20	(.97)	.24	**.87**			
3. Interpersonal communication self-efficacy	5.53	(.66)	.07	.31	**.79**		
4. Interpersonal communication competency	5.51	(.69)	.13	.24	.59	**.93**	
5. Gender			.06	-.06	.17	.20	--

Note: *n* = 159 - 179. The service-learning intervention and gender are coded as 0/1. Statistics reported are from post intervention. Coefficient alpha reliability estimates are on the diagonal.

r ≥ .16, *p* < .05   *r* ≥ .20, *p* < .01   *r* ≥ .27, *p* < .001

Table III.

Regression analyses of the service-learning intervention moderated by gender

Variables	Gender	
	Step 1 Main Effect	Step 2 Interaction
Oral communication domain self-efficacy		
Service-learning intervention	.25**	
Gender	-.09	
Gender X intervention		.06
R^2	.07	.07
ΔR^2		.00
F	5.73**	3.97**
Interpersonal communication self-efficacy		
Service-learning intervention	.05	
Gender	.16*	
Gender X intervention		.13*
R^2	.03	.05
ΔR^2		.02
F	2.53	2.56*
Interpersonal communication competence		
Service-learning intervention	.10	
Gender	.18*	
Gender X intervention		.17*
R^2	.05	.08
ΔR^2		.03
F	4.12**	4.17**

n = 159-179. Entries are standardized betas (βs). * $p \leq .05$ ** $p \leq .01$

Figure I.

Interaction of the service-learning intervention and gender for interpersonal communication self-efficacy.
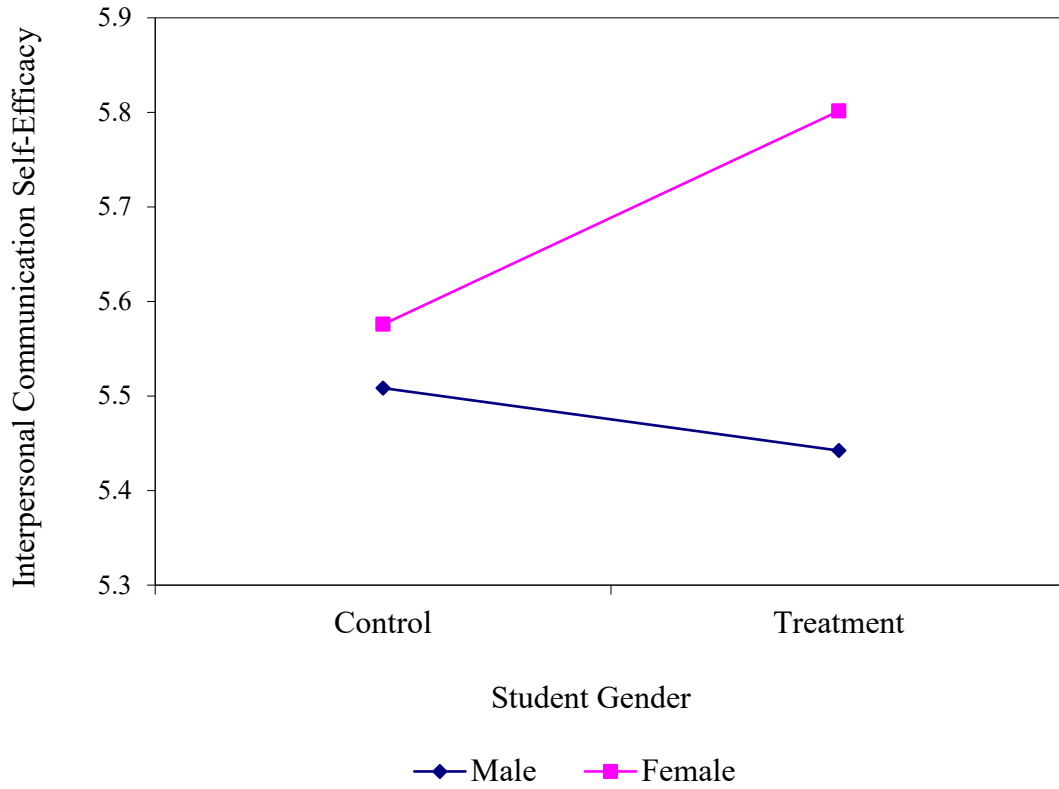
Figure II.

Interaction of the service-learning intervention and gender for interpersonal communication competence.