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Increasing Learning While Serving the Community: Student Engagement as the Key to Learning in a Basic Public Speaking Course

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Abstract

Despite the significant amount of research published regarding the effect of service-learning on attitudinal measures such as empathy and civic engagement, little is known about how service-learning influences direct student learning outcomes. This pilot study employed a repeated measures, quasi-experimental design with a comparison group to compare cognitive and behavioral learning outcomes of students in two courses: a service-learning public speaking course (n = 84) and a traditionally taught public speaking course (n = 92). No significant differences were revealed between service-learning and non-service-learning students on measures of cognitive learning. However, service-learning student groups significantly outperformed their non-service-learning counterparts on measures of behavioral learning (application/performance of a skill). The article concludes by addressing issues uncovered in this pilot project and offering suggestions for additional research.

Keywords: service-learning, experiential learning, public speaking, cognitive learning, behavioral learning, learning outcome assessment

Experiential learning is becoming increasingly popular in universities across the United States. More specifically, service-learning is being embedded in college courses in general and communication courses in particular (e.g., Morse & Brooks, 2020; Oster-Aaland et al., 2004). By definition, service-learning is a pedagogical strategy in which students engage in volunteer work that will enhance their understanding of course concepts and also enable them to contribute to their communities (Rhodes & Davis, 2001). Furthermore, Eyler and Giles (1999) suggested that successful service-learning experiences meet four criteria: (1) personal and interpersonal development, (2) understanding and applying knowledge learned in class, (3) perspective transformation, and (4) a developed sense of citizenship. A substantial amount of research has been published on service-learning related to these outcome criteria (e.g., Able et al., 2014; Astin & Sax, 1998; M. Bloom, 2008; Borden, 2007; Einfeld & Collins, 2008; Eyler & Giles, 1999; Flournoy, 2007; Gullicks, 2006; Gutheil et al., 2006; Huda et al., 2018; Lee et al., 2008; Prentice, 2007; Simons & Cleary, 2006). However, as McIntyre and Sellnow (2014) revealed, such service experiences typically enhance three of the four outcomes. Perspective transformation appears to occur infrequently. Very few studies actually examine the relationships between service-learning and direct cognitive and behavioral learning outcomes. Experiential learning theory provides a foundation upon which to do so.

Theoretical Perspective

Dewey (1938) was among the first to examine experiential learning as a pedagogical best practice. He argued that traditional education does not provide students with skill development to deal with potential present and future issues. Instead, he suggested that students need hands-on experience or to be

engaged in real-life experiences in order to facilitate comprehensive understanding of course concepts.

Kolb (1984) expanded on Dewey's notions by suggesting that students need to experience four stages of learning: (1) concrete experience, (2) reflective observation, (3) abstract conceptualization, and (4) active experimentation. In other words, students learn best when they can focus on factual material regarding a concept (concrete experience), contemplate stories and specific real-life examples that exemplify a concept (reflective observation), examine visual representations of that concept (abstract conceptualization), and engage in activities that assist them with applying that specific concept (active experimentation). Although traditional classroom pedagogies typically afford students an opportunity to engage in the first three of the aforementioned stages, these pedagogies are not conducive to achieving active experimentation (i.e., activities applying an academic concept or skill in a real-life—beyond the classroom—context).

Service-learning provides students with ways to engage in active experimentation. That is, they actually participate in real-life, hands-on experiences where they apply specific concepts that they are learning in class. Rockquemore and Schaffer (2000) discovered that, although much is known about student perceptions of learning before and after completing a service-learning course, much less is known about how or why these positive affective learning outcomes occur. Thus, based on a comprehensive mixed methods project, they proposed a three-stage theory of the student engagement process in a service-learning course: (1) shock, (2) normalization, and (3) engagement. The first stage, shock, suggests that when students begin their service experience, they are truly in shock because they are surprised by the conditions that they are expected to work in and also at the conditions that others exist in. During the second stage, normalization, the shock of the new experience eventually wears off and students adapt to the experience. During this stage, students begin to feel more comfortable with their service location and see it as a "normal" experience. Finally, the third and most important stage for the purposes of this study is the engagement stage. During the engagement stage, students begin to apply what they are learning in class to the real-life examples they are experiencing at their service location. In other words, students become truly engaged and start to make connections between their experiences and what they are learning in class. As a result, students may begin to recognize course relevance, which may then lead to increased motivation to study and, ultimately, to better cognitive learning.

To clarify, a good deal of research reveals that student engagement behaviors are positively correlated with student motivation to learn (e.g., Martin, 2010). More specific to service-learning, when students participate in and apply course material to real-life experiences, perceptions about content relevance increase (e.g., Flournoy, 2007; Moely et al., 2002). When perceptions of relevance increase, motivation to study also increases (e.g., Frymier & Schulman, 1995; Liem & Martin, 2012). Moreover, as student motivation to study increases, cognitive learning tends to increase as well. For example, both Strage (2000) and Lundy (2007) found that students involved in service-learning courses achieved higher exam scores than students involved in non-service-learning courses. Similarly, Hsieh (2014), among others, discovered that motivation can predict behavioral learning outcome achievement. In essence, students engaged in a service-learning course should experience increased perceptions of content relevance, which should increase motivation to study and, ultimately, cognitive learning (see Figure 1).

Review of Literature

To date, service-learning research has focused on affective learning outcomes such as, for example, higher order thinking (Eyler & Giles, 1999), empathy (Lundy, 2007), cultural awareness (M. Bloom, 2008; Borden, 2007; Gutheil et al., 2006), personal and interpersonal development (Gullicks, 2006), awareness of social issues (Able et al., 2014), motivation to engage in social issues (Lee et al., 2008), motivation to study (Flournoy, 2007), life skills (Astin & Sax, 1998), self-efficacy (Simons & Cleary, 2006; Stewart, 2008), and civic engagement/responsibility (Astin & Sax, 1998; Einfeld & Collins, 2008; Gullicks, 2006; Lee et. al., 2008; McIntyre & Sellnow, 2014; Prentice, 2007; Simons & Cleary, 2006). Relatively few studies are dedicated to measuring the degree to which service-learning experiences improve cognitive or behavioral learning based on direct

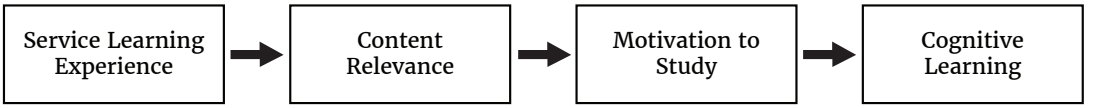

Figure 1. Service learning learning process

outcome assessment measures. To clarify, Novak et al. (2007) conducted a meta-analysis to evaluate cognitive outcomes of service-learning in higher education. Their research revealed only nine studies that examined service-learning and cognitive outcomes, and most of them were based on student self-reports or faculty testimonials. Therefore, these studies did not measure actual learning but, rather, student and faculty perceptions of learning.

The inherent challenges posed in measuring cognitive learning are well documented in both instructional communication and communication education research (Richmond et al., 2006). Further, many of the instruments used in them, such as the Learning Loss Measure (Richmond et al., 1987) and the Learning Indicators Scale (Frymier & Houser, 2000), measure student perceptions of their own learning. Although no single widely accepted measure for cognitive learning exists, Warren (2012) conducted a cross-disciplinary meta-analysis of 11 studies representing 2,129 service-learning students. The studies used a variety of student learning outcome measures ranging from self-reported data to exam scores (e.g., Strage, 2000) to major assignments (e.g., Lundy, 2007) to posttest cognition scales. Warren's (2012) analysis confirmed that, regardless of measurement tool, service-learning appears to have "a positive effect on student learning outcomes" (p. 59).

One study by Strage (2000) used exam scores rather than self-reports to measure cognitive learning among students enrolled in an introductory child development course. Exam scores from students enrolled in the service-learning course were compared with those of students who took the same course without the service-learning component. The service-learning students were required to complete a minimum of 20 hours of service at a school site. Students involved in the service-learning course scored significantly higher on all three exams than the non-service-learning students.

Lundy (2007) used exam scores along with a major assignment to measure cognitive learning in a life-span development course. Students were required to choose one of three course projects: a service-learning project, an interview project, or a research paper. Students selecting the service-learning project completed at least 2 weekly hours of service for 12 weeks for a minimum of 24 hours of service. Students who completed the service-learning project scored significantly higher on exams than their non-service-learning counterparts.

More recently, Nowell et al. (2020) examined knowledge of autism spectrum disorder (ASD) among undergraduate students using a general ASD knowledge survey and found that a service-learning approach improved cognitive learning between pre- and posttest. Another meta-analysis by Yorio and Ye (2012) revealed positive cognitive learning outcomes regarding service-learning and communication skills in business and management courses. However, no similar studies appear to have been published to date in communication courses specifically. Clearly, this gap in the literature warrants further research. As with any pedagogical strategy—and particularly one that often replaces in-class seat time with other experiences—administrators seek confirmation not only that it "works" to achieve student learning outcomes but also to potentially improve and certainly not reduce them (e.g., Baepler et al., 2014). Given that cognitive learning of communication skills has improved in conjunction with service-learning in other fields, it stands to reason that service-learning experiences may also improve them in courses dedicated solely to communication. Therefore, the current pilot study sought to begin addressing the gap by posing Research Question 1: "How does service-learning, as part of a basic public speaking course, affect students'

exam scores measuring understanding and application of public speaking concepts?"

Several studies have revealed that perception of content relevance increases student motivation to study (Frymier & Schulman, 1995; Liem & Martin, 2012). Other studies have reported positive correlations among engagement, motivation, and learning. No published studies appear to focus specifically on communication skill performance as a behavioral learning outcome in service-learning courses. It is plausible that students involved in a service-learning course may deliver better speeches than those in a non-service-learning course simply because they are more engaged and motivated even if in-class seat time is reduced or replaced with the service experience. As a result, this exploratory study also posited Research Question 2: "How does service-learning, as part of a basic public speaking course, affect students' performance on public speeches given in class?"

Method

Participants

Participants in this exploratory pilot study included 176 students enrolled in basic public speaking courses at a large public southeastern university of approximately 30,000 students. Since the basic public speaking course is required at this university, participants were already enrolled in the public speaking courses and, thus, not recruited for this pilot study. Of the 176 participants who were involved in this study, 84 were enrolled in service-learning public speaking courses and 92 were enrolled in traditional public speaking courses. Of the 176 participants, only 161 completed both the pre- and posttests, as 15 participants completed the posttest only. Approximately equal numbers of males and females participated, and the majority (approximately 71%) of the sample were freshmen and sophomore students. A variety of majors were represented in this study, ranging from accounting to art studio to social science majors. Finally, the majority of the sample (approximately 65%) did not have any previous experience with service-learning courses.

Procedures

A repeated measures, quasi-experimental study design with a comparison group was utilized in this study. Students enrolled in four service-learning public speaking courses at the university (n = 84) were compared with students enrolled in five traditional public speaking courses at the same university (n = 92). Four instructors taught these courses, and each was assigned to the classes they taught based on their availability (around their own graduate course schedules). Each instructor taught one service-learning course and one non-service-learning course to ensure better comparability across sections. One instructor taught one service-learning course and two non-service-learning courses. Additionally, instructors received training from the course director on service-learning on several occasions before the start of the school semester. Furthermore, instructors met weekly as the semester continued to ensure consistency in teaching and in grading across sections. All four instructors were doctoral students and teaching assistants. Three of the four instructors were female and one was male, and all instructors were White/non-Hispanic ethnicity. Students were not randomized into these conditions. They chose to enroll in the specific sections of the course that they were enrolled in. This study was IRB approved, and students provided consent for their data to be used for research purposes.

Gullicks (2006) found that a 10-hour service requirement provided a more effective experience for students. Therefore, students enrolled in the service-learning courses in this study participated in a 10-hour service requirement at one of five service locations, 2 hours per week over a 5-week period, as part of their course requirements, whereas traditionally taught students did not. Additionally, students were placed in teams of approximately five students. Each team visited the same service location five different times throughout the entire semester. Teams were chosen based on the students' choice of service location. On the first day of classes, representatives from all five service locations visited the students to describe their organization. All five organizations were nonprofit organizations. As a result of this discussion, students returned the following class period with a list of the organizations, in the order that they preferred, with their first choice listed first. The instructor then formed teams within the class based on students' requests for service location.

Additionally on the first day of class, stu-

dents in both the service-learning and non-service-learning courses completed a web-based pretest assessing cognitive learning of public speaking course concepts along with content relevance and previous experience with service-learning. Throughout the semester, students in both the service-learning and non-service-learning courses completed a series of speeches, one of which was used for analysis in this study. All student speeches were video and audio recorded. At the end of the semester, each group in the service-learning course presented a group symposium speech analyzing a problem associated with their service location and provided potential solutions to that problem. Students in the non-service-learning course also delivered group speeches; however, these groups analyzed a social problem not associated with a service location and provided potential solutions to that problem.

Quantitative content analysis was utilized to evaluate student speeches (Krippendorff, 2004). Two independent coders were trained to evaluate the student speeches via recording. A code sheet was initially developed based on the grading criteria used to evaluate speeches during the semester. The code sheet was then refined by the course director/researcher. Coders then met for a 3-hour training session to review the code sheet and to practice coding speeches. A total of 11 individual speeches not included in the sample for this study were coded. Coders reached 90% agreement after coding six speeches together. They coded an additional five speeches to ensure 90% interrater reliability. After training was completed, a total of 45 group speeches were evaluated. Each coder evaluated approximately half of the 45 group speeches. Once speeches were graded by coders, data was entered in SPSS and independent samples t-tests were used to examine speech score differences between students involved in service-learning versus those not involved in the service-learning course along several dimensions, including content, structure, delivery, individual score, and overall group score.

At the end of the semester, students in both courses completed a web-based posttest questionnaire assessing content relevance. The same cognitive learning measure that students completed on the pretest was included on the final exam that students completed for the course.

Measures

Cognitive Learning

For the purposes of this pilot project, cognitive learning was conceptually defined as knowledge acquisition. Operationally, cognitive learning was measured using 18 multiple choice questions that were compiled from the test bank associated with the textbook for the course. These exam questions are designed to measure multiple levels of thinking, including recall, application, synthesis, and evaluation (B. S. Bloom, 1956). The same 18 questions were asked on both the pretest and the final exam that students completed at the beginning and end of the semester. This cognitive learning measure had been tested for face validity with a group of 10 undergraduate students enrolled in a summer school course the previous semester. Students indicated that this measure made sense to them, and they did not have any problems completing the measure. Cronbach's alpha was not employed because each item measured knowledge or application of different public speaking concepts and, therefore, one would not expect the items to be internally consistent with one another.

Behavioral Learning

Behavioral learning was conceptualized for this exploratory study as the degree of skill with which students delivered their final public speech in class. In order to operationalize behavioral learning, students completed one group actuation speech. Speeches were later coded by independent coders for skill development in terms of content, structure, delivery, individual score, and overall group score. Details of this process are provided in the Procedures section.

Content Relevance

Content relevance was conceptually defined as student perception of whether instructional course content satisfied personal needs, personal goals, and/or career goals (Keller, 1983). Frymier and Shulman's (1995) 12-item content relevance scale was used in this study to operationalize content relevance on two occasions throughout the semester: at pretest and at posttest. This scale was modified for the purposes of this study in order to represent relevance of the course content and not the degree to which the instructor made the course content relevant. Questions on this scale consist of

Likert-type questions measuring content relevance on a scale from 0, *never*, to 4, *very often*. Both high-inference questions (those measuring global or generic perceptions) and low-inference questions (those measuring perceptions of specific behaviors) were included on this scale ($\propto$ = .935), and it was found to be both reliable and valid (Frymier & Shulman, 1995).

Results

To assess cognitive learning outcomes between students involved in each version of the course, independent samples *t*-tests were used to assess differences between student cognitive learning scores. Although students in the service-learning courses scored slightly higher on the posttest cognitive learning measure (M = 14.96, SD = 1.91) than those involved in the traditional courses (M = 14.82, SD = 1.72), the difference was not significant, $t(174) = .544$, $p > .05$.

As mentioned earlier, in order to assess differences in behavioral learning among students in service-learning and traditional versions of the course, two independent coders were trained to evaluate the student speeches via recording. Once speeches were graded by coders, independent samples t-tests were used to examine speech score differences between service-learning and non-service-learning students along several dimensions, including content, structure, delivery, individual score, and overall group score. Results indicated that service-learning students scored slightly higher (M = 13.96, SD = 1.19) than the non-service-learning students (M = 13.72, SD = 1.13) on the structure dimension. However, results were not significant, $t(190) = 1.43$, $p > .05$. Similarly, service-learning students also scored slightly higher on the delivery dimension (M = 22.58, SD = 2.07) than non-service-learning students (M = 22.37, SD = 2.16). Again, results were not significant, $t(186) = .68$, $p > .05$. Finally, service-learning student groups scored significantly higher overall (M = 3.25, SD = .61) than non-service-learning student groups (M =2.97, SD = .43), $t(191) = 3.75$, $p < .001$.

In order to assess differences in perceptions of relevance among service-learning and non-service-learning students, independent samples *t*-tests were used. Contrary to what was expected, non-service-learning students perceived the course as significantly more relevant (M = 3.24, SD = .55) than service-learning students (M = 2.78, SD = .74), $t(174) = -4.68$, $p < .001$.

Discussion

An ever-increasing number of colleges and universities are offering service-learning courses as an option across the curriculum. Although research suggests a number of benefits to engaging students in service-learning (e.g., Eyler & Giles, 1999; Gutheil et al., 2006; Yorio & Ye, 2012), relatively few have focused specifically on learning outcome achievement using direct assessment measures (e.g., Lundy, 2007; Strage, 2007). Even less research has been published to date on communication courses in particular and cognitive or behavioral learning outcome achievement in them (e.g., McIntyre & Sellnow, 2014; Warren, 2012). Therefore, this exploratory pilot study attempted to answer two research questions. Research Question 1 asked whether students in service-learning public speaking courses experienced increased knowledge of public speaking course concepts (cognitive learning). Research Question 2 asked whether these students performed better on their public speeches than students in traditionally taught public speaking courses (behavioral learning).

Although service-learning students performed slightly better on a cognitive learning measure at posttest than their non-service-learning counterparts, the difference was not significant. There are several potential reasons for lack of significant difference on the cognitive learning measure. First, this was a pilot study and, as such, represents a first attempt to implement a service-learning approach in the public speaking course at this university. Consequently, coordination between students and service agencies was challenging at times and did garner some negative reactions among students in the service-learning courses. It is plausible that these negative perceptions decreased motivation to study among the service-learning students and, thus, cognitive learning (e.g., Novak et al., 2007). However, we find it encouraging that service-learning students performed slightly better on the cognitive learning measure than their non-service-learning counterparts even though they spent less seat time covering material in the classroom than those in the traditionally taught sections. This result seems to suggest what has been confirmed in other

fields: that "learning outcomes were at least as good, and in one comparison significantly better than, those in a traditional classroom" (Baepler et al., 2014, p. 227). Finally, because the sample size was small, low statistical power could have contributed to the insignificant results.

Several encouraging conclusions can also be drawn regarding behavioral learning. On individual classroom speeches, for example, service-learning students performed better than non-service-learning students on two of the three dimensions of effective speaking (delivery and structure) and similarly on the other (content). Moreover, service-learning students significantly outperformed non-service-learning students in their group symposium team speeches. This conclusion extends what is known about reduced seat time in public speaking classes that employ problem-based learning (Sellnow & Ahlfeldt, 2005). To clarify, it appears that reducing seat time to allow for service experiences also does not hurt behavioral learning and, in fact, increases it on some dimensions. Our finding also extends research about improved behavioral learning outcomes among student groups enrolled in problem-based learning courses to that of service-learning courses.

Finally, non-service-learning students perceived the course material to be significantly more relevant than did their service-learning counterparts. Of note here is the fact that the communication course content was based on the same textbook and learning outcome criteria (content, structure, and delivery of effective public speaking) in all sections. Thus, this conclusion suggests that instructors of service-learning public speaking courses may need to do more to establish the relevance of service in a public speaking course.

Implications

Several implications for service-learning practice also emerged from this pilot study. First, although it was important that service-learning students not feel they were doing "extra" work by completing service hours in addition to their regular classwork, decreasing time in class was not a good way to accomplish this. Because time in class was decreased, instructors often felt they did not have enough time to cover what they needed to cover, and students felt they were not sufficiently prepared for their exams and assignments. Therefore, it is important that service-learning instructors ensure there is enough class time to cover course content, yet not overburden students with additional work beyond what a traditional public speaking class would require. This could occur in a variety of ways. For example, instructors for service-learning public speaking courses could implement lecture material online that students are required to engage with outside class. It is also possible to require that students simply complete the service-learning component of the course outside normal class time so that time in class is spent covering course content.

Next, students often were frustrated with coordination problems involving service-learning organization representatives. Nonprofit organization representatives are extremely busy and often overworked. Representatives often struggled to find time to accommodate the students' varying schedules at their organization, making it difficult for students to complete the required service hours. Therefore, it is important that educators who implement a service-learning component to their courses ensure that organization representatives will have time to work with students and involve them in meaningful projects. Communication is likely key here to ensure organization representatives understand what the course requires of students and of themselves. Integrating frequent meetings or communication with organization representatives at times convenient for them, perhaps before work hours begin or during a lunch hour, is a promising way to ensure clarity of expectations for both students and their organization partners. It is also important that service-learning instructors make the rationale for service-learning clear to students so students understand what is expected of them in the course. Finally, as results of this study suggested, service-learning students perceived significantly lower content relevance than non-service-learning students at posttest. Therefore, it is important that educators continue making the connections between course material and the service work students are performing.

Limitations

As with all research, the results of this exploratory study should be interpreted with an understanding of its limitations. First, because the sample is limited to one university, results are not necessarily gener-

alizable to students at other universities. A second limitation is the use of web-based survey methods to gather pre- and posttest data. Although web-based surveys are convenient, they have inherent weaknesses. It is difficult to ascertain whether students took the pre- and posttests seriously. The advantages of using web-based survey methods, however, outweighed the disadvantages in this study. Using web-based survey methods allowed the researcher to quickly reach all public speaking students electronically and enter and analyze the data more efficiently.

Next, service-learning students spent 1 hour per week less time physically seated in the classroom than non-service-learning students. This difference in groups could bias the results. Perhaps service-learning students would have differed significantly on measures of cognitive learning if they had spent the same amount of time in class as non-service-learning students.

Finally, although both groups of students worked in teams throughout the semester, service-learning student groups may have exhibited more cohesion than non-service-learning students because they participated in service assignments together. This difference could also influence the results related to behavioral learning in this study and is worthy of future research.

Directions for Future Research

Conclusions and limitations of this pilot study also point to several directions for future research. First, a replication study where service-learning and non-service-learning students spend equal amounts of time in class might show changes in cognitive learning outcomes. Future research might also explore why service-learning students significantly outperformed non-service-learning students on the group symposium speeches. What aspects of the service-learning experience might have improved overall speech quality? Possibilities include improved teamwork, group cohesion, or service-learning students being more motivated by or more invested in their group speech because they spent time throughout the semester working in a real nonprofit organization. Finally, future research should address best practices for working with organizations to ensure that the experience is mutually beneficial to both students and the organizations in which they serve.

Conclusion

Service-learning is increasingly prevalent among college and university classrooms in the United States, and especially in communication departments. Research confirms that service-learning may increase a number of important student outcomes such as civic responsibility, empathy, engagement, and motivation to study. Equally and perhaps even more important is assessing whether and how much service-learning influences direct student learning outcomes. This exploratory pilot study begins to fill that research void for communication courses generally and a basic public speaking course specifically. As we continue to integrate experiential learning such as service-learning into our courses, we are obligated to make informed choices based on data-driven, theoretically grounded research. Failure to do so is not only ill-advised but irresponsible.

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