THE RELATIONSHIP OF SERVICE-LEARNING AND CAMPUS INVOLVEMENT: A MULTIVARIATE LOOK AT THE PROFILE OF TODAY’S COLLEGE STUDENT

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Service-learning continues to gain in popularity across the higher education landscape and can be found in most educational institutions. Although more often found in student affairs programming, it is also viewed as a viable pedagogy. Most studies show that service-learning impacts students in various ways: academically, socially and vocationally.

The research study employed quantitative methods. It analyzed prediction of participation in community service/service-learning with students’ self-assessment on five outcomes: academic skills, social integration, community integration/alumni expectations, connection with the campus community and change in opinions, values and attitudes. A canonical correlation analysis was conducted on data collected on the Profile of Today’s College Student administered by NASPA—Student Affairs Administrators in Higher Education. The data represent a random sample \( N = 374 \) of undergraduate students enrolled at a mid-sized, private four-year university located in the south central United States. The study looked for statistical significance as well as employed effect size measures.

The study found participation in community service/service-learning predicts on all five factors in the model. Additional analysis incorporated effect size measures to further strengthen the results. The results were both statistically \( (p < .001) \) and practically significant \( (R^2_c = .101) \). Connection with the campus community and social integration were best predicted by participation in community service/service-learning.
Surprisingly, change in opinions, values and attitudes was found to be least predictive, but correlated at significant levels.

Research on service-learning has focused on service-learning related to academic performance, often neglecting the co-curricular experiences and development. Since service-learning can be found in co-curricular and academic programming, more research on community service/service-learning should focus on co-curricular service experiences.
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CHAPTER 1
INTRODUCTION

Service learning is a form of experiential education where students learn and develop their understanding and skills through actively participating in organized service meeting the community's needs (Dicke, Dowden & Torres, 2004). Service-learning builds on American traditions of volunteerism, service and social activism (Kenny & Gallagher, 2002). The specific goals of service-learning at a university vary depending on the mission of the institution (Kenny & Gallagher, 2002). The program goals typically include development of citizenship, student preparation for an active civic life, moral and religious development, career preparation and community partnership (Kenny & Gallagher, 2002).

While dating back to Dewey, today service-learning can be found in most educational institutions. Often service-learning is found in various experiences offered through student affairs, but it is currently being viewed as a viable pedagogy finding a place in the classroom. Further, an increasing number of colleges and universities are recognizing the scholarly benefits of faculty incorporating service-learning into the classrooms (Furco, 2001).

Cruce and Moore (2007) classify the benefits of community service and service-learning into three broad categories: educational, vocational and social. Conway, Amel and Gerwien (2009) found that service-learning produces
“positive change in academic, personal, social and citizenship outcomes” (p. 240). Research has provided evidence that suggests connecting service with academics enhances “the development of cognitive skills” (Vogelgesang & Astin, 2000, p. 31). Vogelgesang and Astin (2000) found statistically significant differences in GPA as well as self-reported writing skills in students who participated in a course with a service component. At least two studies (Vogelgesang & Astin, 2000; Eyler, Root & Giles, 1998) found increases in students’ critical thinking skills as well. Pragman and Flannery (2008) found statistical significance in students’ connection to the institution through their service-learning experience, while Munter (2002) found “service-learning courses provide opportunities for developing a sense of purpose and a collective solidarity with the communities in which our universities are embedded” (p. 154).

Kezar and Rhoads (2001) address the question of whether service-learning belongs solely in the classroom, as co-curricular or a blend of both. Student affairs professionals work with co-curricular service-learning which brings a focus on affective development such as promotion of citizenship, social responsibility and moral commitment. Faculty, on the other hand, focus more on cognitive development seen in the learning associated with an academic discipline. The idea that these can be separated is both difficult and unrealistic. The college experience is to develop the whole individual (Kezar & Rhoads, 2001). Students need to develop both affective and cognitive domains and this can be obtained through service-learning experiences. Having faculty and
administrators working together with the community to create service-learning experiences is ideal (Kezar & Rhoads, 2001).

Does service-learning and/or community service affect students? Most studies show that it does in various ways: academically, socially and vocationally. The extent of the effect varies depending on the study. Effects as well as statistical significance of service-learning and/or community service are considered in this study.

Most of the research conducted on community service/service-learning examines the impact of service-learning on some type of change in participants. Primarily, these changes focus on changes in students’ academic skills/knowledge and changes in attitudes and values. Students’ prediction of future community involvement is another area frequently studied. However, few consider the impact of service-learning on the students’ connection to the campus community. Even fewer studies consider the relationship between community service/service-learning experiences and changes in students (academic skills, opinions, values and attitudes), social and community integration and connection to the campus community. This study considers all of these types of changes.

The study results can confirm existing research on the impact of service-learning on students. Further, it can help faculty and administrators communicate the value of service-learning in higher education to those who may not support the concept. The results can provide the areas in which service-learning impacts
students so that goals and outcomes include these areas. Also assessments can include questions covering these areas to confirm the service-learning programming is achieving these outcomes.

Research Questions

This is a quantitative study utilizing data collected in an online survey. The data represents a random sample of undergraduate students enrolled at a mid-sized, private 4-year university located in the south central United States. The Profile of Today’s College Student (Profile) is an online survey administered by NASPA—National Association of Student Personnel Administrators. The survey is designed to grab a glimpse of what today’s college student looks like (NASPA website, n.d.). All respondents complete the demographics portion of the survey as well as four randomly selected sections from the survey. The nine sections in the survey include: academic integrity, academic involvement, campus involvement, diversity issues, health and wellness, future aspirations, media consumption, technology use, and values and beliefs (NASPA website, n.d.). The current study considers responses within the campus involvement section of the survey instrument.

The two research questions considered in this study are:

RQ₁: Does increased community service/service-learning participation predict multivariate effects in students’ Academic Skills; Social Integration; Community Integration/Alumni Expectations; Connection with the Campus Community; and/or Change in Opinions, Values, and Attitudes?
RQ$_2$: What criterion variables are most salient?

The independent variable used in this study includes self-reported levels of involvement in community service or service-learning projects identified by students. The four levels of participation used to measure community involvement include: no involvement, attending the events/activities, actively participating in the events/activities and leading these events/activities.

The dependent variables are factors comprised of 26 questions contained within the campus involvement portion of the survey. The questions are answered on a 5-point Likert scale with the option to select not applicable. A factor analysis was conducted identifying the grouping of the questions into the five factors.

Definitions of Terms

For the purposes of this study, the definition of service-learning is: “a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development” (Jacoby & Associates, 1996, p. 5). The service-learning experience could include experiences contained within an academic course. The experience could also include non-curricular community service opportunities offered through a student affairs program. It could be a one-time event for a few hours or a regular weekly occurrence taking place throughout a semester, school year or even longer.
The factor Academic Skills includes skills such as self-confidence, stress-management, time-management, communication, critical thinking/problem solving, leadership and study skills. It also includes the ability to work in a team and to learn balance between social and academic activities.

The factor Social Integration asks about the opportunities to meet people while participating in the service experience. Feeling connected to other students with different and similar interests as well as feeling a part of the campus community are all considered within the factor. Further, asking respondents if through the experience they met individuals they would not have otherwise met outside of the service experience is included as well.

For the factor Community Integration/Alumni Expectations, the respondents’ likelihood to complete their degree at this institution is considered. Advancement in their knowledge about the campus community as well as their satisfaction with their college experience are included within this factor. In considering alumni expectations, the factor includes statements about the respondents’ likelihood of donating to the institution and participating in alumni events upon graduation.

The factor Connection with the Campus Community examines connection with faculty and staff. It also includes feeling a part of the campus community and making a difference on campus through involvement in additional campus activities. Additionally, it considers relevant experience/skills gained through the service tied to the respondents’ academic major. Finally, the factor Change in
Opinions, Values and Attitudes includes self-reported changes in students' values, attitudes, life goals and understanding of diverse perspectives.

Limitations

One limitation of this study is that student responses describing their experiences may include more than their community service/service-learning project experience. While not all students who would have participated in a community service/service-learning project have participated in other campus activities, research suggests they most likely have been involved on campus in other areas such as athletics (Chalk, 2009), political activism (Yates & Youniss, 1999), student government, student organizations, religious services (McCrohan & Bernt, 2004), honor societies, and Greek life (Mathiasen, 2005).

Another limitation of the study is found in the factor analysis itself. The factor analysis conducted by the survey administrators includes statements not contained on the 2008 administration of the survey. These four statements included in the factor analysis (and subsequently found on the 2009 version of the survey) were not included on the survey used in my study. While these four statements impact the reliability scores, the additional items are theoretically grounded and do not substantively change what the instrument measures. Instead, they have only been added to improve the stability of the instrument.
Delimitations

The study is restricted to one institution. The institution is a mid-sized, private four-year university located in the south central United States. The majority of the campus comprises undergraduate students who live on-campus. Further, the study considers data collected over a limited time period, thus potentially impacting the effect of correlations.
CHAPTER 2
REVIEW OF THE LITERATURE
Theoretical Foundation

Before reviewing the effect of community service/service-learning on the areas examined in this study, a brief overview of involvement theory and student engagement is conducted. Astin articulated involvement theory several decades ago describing “student involvement refers to the amount of physical and psychological energy that a student devotes to the academic experience” (Astin, 1999, p. 518). A highly involved student is one who “devotes considerable energy to studying, spends a lot of time on campus, participates actively in student organizations and interacts frequently with faculty members and other students” (Astin, 1985, p. 36).

The theory of student involvement is based on a longitudinal study of college drop outs in the 1970s (Astin, 1999). The study attempted to determine the factors which affect student persistence. Astin (1985) found that the factors that positively impacted persistence increased involvement while factors that negatively influenced persistence reduced involvement. Students who were involved in college remained in college, but those students who dropped out lacked involvement (Astin, 1999).

The theory of involvement includes a number of virtues. First, “students learn by becoming involved” (Astin, 1985, p. 36). Secondly, the theory provides a
context for explaining the empirical knowledge obtained over the years about how the environment influences student development (Astin, 1985/1999). Third, the theory embraces concepts from a variety of sources such as psychoanalysis and classical learning theory (Astin, 1985/1999). Fourth, the concept of involvement applies equally to students and faculty (Astin, 1985/1999). Finally, the theory of involvement can be used by researchers, college administrators and faculty (Astin, 1985/1999). The theory is useful to researchers as a tool to guide investigation of student and faculty development. College administrators and faculty find it applicable when designing more effective learning environments (Astin, 1985/1999). Ultimately, involvement theory “emphasizes academic, out of class settings and extracurricular activities” (Wolf-Wendel, Ward & Kinzie, 2009, p. 412).

Influenced by Astin’s involvement theory, Kuh’s concept of student engagement represents two key components: “what the student does and what the institution does” (Wolf-Wendel, Ward & Kinzie, 2009, p. 413). The amount of time and effort students put into their studies and other activities (Kuh, 2009) directly impact their experiences and successful student outcomes (Wolf-Wendel, Ward & Kinzie, 2009). The institution’s allocation of resources—including human resources—are included as well as the way they arrange learning opportunities and services to encourage student participation (Kuh, 2009). The quality of students’ learning is directly influenced by participating in educationally purposeful activities impacting their overall educational experience (Wolf-Wendel,
Ward & Kinzie, 2009). In Wolf-Wendel, Ward and Kinzie’s (2009) interview with Kuh, they concluded “student engagement was not developed as an extension of involvement but as an expression of the importance of more explicitly linking student behaviors and effective educational practice” (p. 414). Additionally, they clarified “engagement differs from involvement in that it links more directly to desired educational processes and outcomes and emphasizes action that the institution can take to increase student engagement” (p. 414).

Service-Learning in the Classroom

A number of studies have found community service/service-learning has positive effects on students’ academic skills in a variety of disciplines. Some of the academic disciplines where research has been conducted on service-learning include nursing (Reising & Allen, 2006; Reising & Allen, 2006), engineering (Ropers-Huilman, Carwile & Lima 2005), public affairs (Lambright, 2007), social work (McClam, Diambra, Burton, Fuss & Fudge, 2008; Poulin, Kauffman & Silver, 2006), sociology (Mobley, 2007), Spanish media (Castaneda, 2008), education (McHatton, Thomas, & Lehman, 2006; Strage, 2000) and educational psychology (Simons & Cleary, 2006).

Reising, Allen and Hall (2006; 2006) conducted a study on a service project related to a students’ academic major. The researchers established a service-learning project for nursing students to perform blood pressure screening and counseling for the university community. They determined that the service-learning project was helpful in the students’ perceptions of their learning as well
as achieving the course outcomes. They also reported the community benefited from the services and found that many of the clients made adjustments to lower their blood pressure.

Ropers-Huilman, Carwile and Lima (2005) implemented service-learning in an engineering course. They utilized engineering objectives identified by the Accreditation Board of Engineering Technology to determine if the service-learning coursework met the outcomes. The outcomes included students learning about engineering and biological engineering to help them determine if this is the best career choice for them to pursue. The second object was for the students “to understand and apply conceptual engineering design principles” (p. 157). The last objectives were “to sharpen communication skills” and “to understand the explicit ties between engineering and service to society” (p. 157). Their results show that they did in fact meet these outcomes. Additionally, they found incorporating service-learning into the coursework positively impacted retention efforts as well.

Lambright’s (2007) study considers the impact of service-learning on learning outcomes for graduate public affairs students. Lambright compared student evaluations on a group project and final exam scores between two classes. One class completed a service-learning project as their group project while the other class wrote mock research proposals. Lambright found that the students who participated in the service-learning experience may have mastered the course material better by linking theory to practice. However, participating in
the service-learning project had no significant impact on student performance on the final exam (2007).

McClam, Diambra, Burton, Fuss and Fudge (2008) incorporated reflective assignments in order to investigate personal growth and understanding. The subjects were human service majors participating in a semester-long service-learning experience helping adolescents at a residential psychiatric facility. The course was an upper level case management course where students participated in the service experience toward the end of the semester. McClam et al. (2008) assessed the students’ expectations and concerns before the service experience. Four themes were found in the students’ pre-service reflections on expectations: “hands-on practical experience, translation of theory to practice, skill development and understanding and career confirmation” (McClam et al., 2008, p. 240). When students identified their concerns pre-service, three themes emerged: “building relationships and rapport, confidence, and skills” (p. 241). At the completion of the experience, students’ reflections were analyzed noting changes that occurred as a result of their participation. When looking at the themes on the value of learning in the experience students identified in their writings: “hands-on experience, gaining knowledge, translating theory into practice, and developing skills” (p. 245). McClam et al. (2008) also found students noted that as a result of their service-learning experience, they were confident of their career choice.
Castaneda (2008) conducted a service-learning project between students enrolled in a Spanish-language media course and a local Spanish language radio program marketed to Latinos. Castaneda found the students had a greater social awareness as a result of the experience (2008).

When considering the effect of community service/service-learning on the students’ connection with the campus community, experiences related to their academic major play an important part. Poulin, Kauffman and Silver (2006) discuss the creation of a social work center within a community with many social work needs but not many resources. The researchers created a center for graduate students at the university to experience service through an internship-type experience while meeting extreme needs within the community. Data was obtained through student field surveys and focus groups during academic years 2002, 2003 and 2004. Using both qualitative and quantitative data, they found that students who participated in the service experience had significantly higher macro practice scores than students placed in traditional field sites which were non-university led. Additionally, the participants felt they had a richer experience than their classmates in a traditional field placement. They felt better prepared for their career upon graduation with the broad experiences provided within their service experience at the center.

Mobley (2007) implemented a service-learning experience for students enrolled in a sociology course in policy and social change. The student participants became involved in bringing awareness to homelessness. The study
assessed changes in students’ beliefs about social justice, self-efficacy and perceptions of homelessness. The participants experienced significant positive changes in their perceptions of who is homeless. Mobley attempted to help the students advocate for the homeless. Mobley found small changes in student self-efficacy and opinions on social justice.

McHatton, Thomas and Lehman (2006) studied the inclusion of a service-learning project in a K-12 special education course. While the researchers identified a whole host of unexpected constraints identified by students, they found the students felt better prepared to work with children from diverse socioeconomic and cultural backgrounds because of their experience with the project.

Strage (2000) incorporated 20 hours of service in a large lecture-style introduction to child development class. Students were given the option of service-learning placement site choosing either a preschool, elementary, middle or high school and were required to complete a reflection journal on their experiences. Strage (2000) compared midterm and final exam scores between classes that did not have the service-learning component and ones that did. She found there were no differences on the first midterm scores between the classes. However, the students in the service-learning courses “earned significantly more points” on the second midterm and final exam than the students in classes without a service-learning requirement (Strage, 2000, p. 8). Upon further investigation, Strage discovered that students having participated in the service-
learning experience scored much higher on their essays than the non-participants. There was no difference on the multiple choice sections of the exams between the groups (Strage, 2000).

Simons and Cleary (2006) included an optional service-learning component into an educational psychology course from 2002 to 2004. Those who opted to participate (95% of the students) completed their service at an elementary school, an after-school program or a community learning program. They employed a pre-test/post-test design and found over 90% of the participants identified academic learning as a benefit of their service-learning experience (Simons & Cleary, 2006). Over 80% identified career development as an additional benefit of the course (Simons & Cleary, 2006). Another benefit identified by over 90% of the participants was increased self-efficacy or self-knowledge (Simons & Cleary, 2006). Additionally, 80% identified the program’s impact on their personal development (Simons & Cleary, 2006). Over three quarters of the participants identified developing connections to others as a result of their service-learning experience. More than 60% identified having reduced stereotyping and a development of tolerant attitudes at the completion of their service experience (Simons & Cleary, 2006). Also, more than 60% identified gaining problem-solving skills through their experience (Simons & Cleary, 2006).

The Impact of Service on Students

A number of researchers have conducted meta-analyses on published studies on community service/service-learning. Novak, Markey and Allen’s
(2007) study asks “what impact on learning outcomes does the inclusion of service-learning have on students?” (p. 151). The researchers conducted a meta-analysis on nine published studies which contain statistical information comparing two sections of the same course. One course contained a service-learning component while the other one acted as a control group and did not. The results of their meta-analysis provide evidence that community service-learning positively impacts academic understanding of the subject matter. Further, the service-learning experience improves skills learned and the ability to apply the knowledge and skills to different complex social issues. The results also show that when compared with courses or programs without a service-learning component, service-learning consistently provides improvement toward the desired outcomes.

Conway, Amel and Gerwien (2009) also performed a meta-analysis on research published on service-learning. They found 103 studies reported in 78 separate sources that fulfilled their qualifications. The first qualification was the study must utilize a pre-test/post-test design using identical quantitative measures for both samples. Secondly, participation in community service occurred between the pre- and post-tests. Thirdly, the research provided enough information so they could classify the measures. Finally, the research must report the pre-test and post-test means, pre-test standard deviation and sample size. Their first major finding was that service-learning does produce positive changes in academic, personal, social and citizenship outcomes (Conway, Amel &
Gerwien, 2009). Secondly, they found reflection generally was associated with larger effects. Their third major finding was that the effects tended to generalize across K-12 and higher education (Conway, Amel & Gerwien, 2009). They noted, however, that for adult and mixed populations little evidence was shown for changes in personal and social outcomes. Additionally, they found some evidence of smaller effects for non-curricular service (Conway, Amel & Gerwien, 2009).

Other researchers focus on determining what makes a successful service-learning program. Carver (1997) established a framework for a service-learning environment based on a six year study of experiential education combining both academic and field research. The ABC framework identifies the student experience as including three aspects. The first aspect is Agency which includes the program characteristics which allow students to become change agents in their lives and communities. The second, Belonging, considers the resources, behavior and values which create a sense of belonging with the community. While the third, Competence, refers to the student’s competence through learning skills, acquiring knowledge and applying what is learned. Carver’s framework can be used to assess how and why some service-learning programs are more beneficial than others for individual students at different times in their lives.

Much research has been dedicated to the effect service-learning has on students’ academic skills. Vogelgesang and Astin (2000) conducted a
longitudinal study comparing three student groups: service-learning participants, “generic” community service participants and non-service participants. They utilized data collected as part of the Cooperative Institutional Research Program (CIRP). CIRP collects data on entering first-year students then provides follow-up data from a survey conducted four-years later. They found the strongest predictors of participating in community service are “volunteering in high school, being a woman, tutoring other students in high school, expressing a commitment to participate in community action programs, attending religious services, and not placing a high priority on making money” (Vogelgesang and Astin, 2000, p. 29). Further, as for affective outcomes, they found “community service appears to have a stronger effect than does service-learning” (Vogelgesang and Astin, 2000, p. 29). For academic outcomes, the findings suggest “connecting service with academic course material does indeed enhance the development of cognitive skills” (Vogelgesang and Astin, 2000, p. 31). Even after controlling for entering characteristics and type of institution, they found a positive effect in participating in service—community service or service-learning—on all academic outcomes: “growth in critical thinking and in writing skills and college GPA” (Vogelgesang and Astin, 2000, p. 30). Additionally, the findings indicate that regardless of their freshman year career choice, students who participate in community service are more likely than non-participants “to say they plan to pursue a service-related career on the post-test” (p. 31).
Also utilizing data as a part of the Cooperative Institutional Research Program (CIRP), Astin and Sax (1998) collected data from 3,450 students from 42 institutions with federally funded community service programs. The data was collected as part of the CIRP Freshman Survey over 4 years from 1990 to 1994. Then they used information gathered on the 1995 administration of the follow-up survey, the 1995 College Student Survey (CSS). They found that participation in community service/service-learning “during the undergraduate years enhanced the student’s academic development, civic responsibilities and life skills” (p. 255).

Wang and Rodgers (2006) utilized Perry’s scheme to consider cognitive development changes in students in six different service-learning courses. Some of the courses had an emphasis on social justice, while others did not. The researchers administered the MER instrument in a pre-test/post-test design. They found significant increases in student MER scores from pre-test to post-test. Further, they found the students participating in a course with a social justice focus had a significantly higher MER post-test score than those in the non-social justice group. The study provides additional evidence that service-learning courses positively impact students’ thinking and reasoning. A clear pattern of change in cognitive development was found. There was a shift from lower levels of development to higher levels of development in the participants.

Service-learning programs appear to impact “student attitudes, values, skills and the way they think about social issues even over the relatively brief period of a semester” (Eyler, Giles & Braxton, 1997, p. 13). Bernacki and Jaeger
(2008) studied the moral development of students who participate in service-learning. They found that students who completed service-learning courses appeared to not use an ethic of care to resolve moral dilemmas any more frequently than students enrolled in comparative courses without the service-learning component. They did, however, find that students who completed service-learning courses perceived more positive changes in themselves than students completing the traditional course (Bernacki & Jaeger, 2008). Bordelon and Phillips (2006) found that regardless of the outcomes identified for the service-learning experience, service-learning promotes personal satisfaction among students who participate. Payne (2000) also found students experienced satisfaction in helping others through their service experience.

Einfield and Collins (2008) investigated how a university-sponsored AmeriCorps non-curricular program influenced participants in their development of “multicultural competence, understanding of and commitment to social justice, as well as understanding of and commitment to civic engagement” (p. 98). Each participant completed at least 300 hours of service to be eligible to participate. Using a constructivist theoretical perspective, Einfield and Collins interviewed the participants determining what learning and development occurred in the areas of social justice, multicultural competence and civic engagement. In the category of social justice, two themes emerged: equality and empowerment. Attitudes about equality ranged from a general belief about equal rights to a belief of “systemic inequality” found in society (Einfield and Collins, 2008, p. 100). Some participants
reported “a limited sense of empowerment” (Einfield and Collins, 2008, p. 100) while others reported having significant power to bring about change. Einfield and Collins (2008) found that length of service was an important factor to develop multicultural awareness, knowledge and skill. Awareness referred to the participants’ awareness of their own values, culture and assumptions. Knowledge considered an individual’s knowledge of other cultural groups. Finally, skill brings the awareness and knowledge together to reflect on how an individual engages with other cultural groups.

Hollis (2004) looked at differences in students’ tendency to blame the victim between those who experienced structured and those who experienced unstructured service-learning environments. Hollis conducted a comparative analysis to understand how the students’ “attitudes changed toward the clients with whom they worked, how they described the clients and the conditions in which they lived, and the way they attributed blame for the conditions they observed” (p. 581). There were essentially little differences between the groups. However, the findings suggest “that using a more focused and intentional approach to service-learning helps students to better understand how structural and institutional conditions relate to societal problems” (p. 594).

While many studies focus on long term service experiences, Reed, Jernstedt, Hawley, Reber and DeBois (2005) studied the “effects of a small scale, very short-term service-learning experience” (p. 359) on undergraduate students. They defined “very short-term” as 8 to 10 hours of service experience.
Reed et al. (2005) employed a repeated measure analysis of variance which indicated that participating students reported maintaining their sense of social responsibility. Further, when compared to non-participating students, student participants reported having an increased likelihood of choosing a service-related occupation and increased sense of meaningfulness in college. Their findings support the belief that short-term service-learning programs can provide students some of the benefits of long-term service-learning experiences. In fact, they found that small, short-term service-learning experiences covering 2-4 hours of service can impact students as well.

Summary

A review of the research suggests that community service/service-learning does effect students academically, socially, personally and civically. The effects are found in long-term as well as short-term service experiences. It is important to note that Vogelgesang and Astin (2000) found the connection of academic course material and service had a stronger effect than participation without the academic connection. Other researchers also found smaller effects for non-curricular service (Conway, Amel & Gerwien, 2009).

Participating in service-learning positively impacts academic understanding of the subject matter (Novak, Markey & Allen, 2007; Conway, Amel & Gerwien, 2009; Astin & Sax, 1998). Additional studies found growth in critical thinking and writing skills as well as overall GPA (Vogelgesang & Astin, 2000). Wang and Rodgers (2006) found including service-learning in a course
positively impacts students’ thinking and reasoning. Other studies have found the service experience improves not only skills learned, but also the ability to apply the knowledge and skills to different complex social issues (Novak, Markey & Allen, 2007).

Service-learning also impacts students’ career choices. A few studies have found that after participating in a service experience, participants were more likely planning to pursue a service-related career (Vogelgesang & Astin, 2000; Reed et al., 2005). In courses incorporating service-learning experiences, students identified the hands-on experience helped them translate theory to practice in developing their skills for their career (McClam et al., 2008; Polin, Kauffman & Silver, 2006; Lambright, 2008). For example, future special education teachers felt the service-experience better equipped them for working with children from diverse socioeconomic and cultural backgrounds (McHatton, Thomas & Lehman, 2006).

Participation in a service-learning experience can change how a student perceives themselves (Bernacki & Jaeger, 2008). It can promote personal satisfaction for the participants (Bordelon & Phillips, 2006). Service participation increases students’ sense of meaningfulness in college (Reed et al., 2005). Other studies have found participants felt they had a richer experience than the students who did not participate (Poulin, Kauffman & Silver, 2006).

Service-learning provides students with opportunities to develop relationships with people they would not interact with otherwise (Brody & Wright,
For students engaged in service with those unlike themselves, reflection is necessary for individuals to process and “make sense of the differences” between themselves and others (Brody & Wright, 2004, p. 16). Conway, Amel and Gerwien (2009) also noted the importance of reflection as it was associated with larger effects.

The research shows that inclusion of community service/service-learning improves students' learning experiences. Some of the research conducted on community service/service-learning in education is qualitative allowing for more exploration of the effects. The quantitative research conducted on the impact of community service/service-learning has primarily employed only univariate statistical methods (i.e. ANOVA, regression, MANOVA). Few studies include effect size, or practical significance, in their research. Only a few studies have considered multivariate methods which allow the researcher to identify relationships by considering multiple causes and effects without increasing the risk of Type 1 error (Sherry & Henson, 2005).
CHAPTER 3
RESEARCH DESIGN

Introduction

This is a quantitative study utilizing data collected on an online survey. The data represents a random sample of undergraduate students enrolled at a mid-sized, private 4-year university located in the south central United States. The institution’s population is primarily traditional age, undergraduate students with most students living on campus. While some institutions require service-learning to occur within the curriculum, the institution represented in this study is not one of them. However, the institution does encourage faculty to incorporate service-learning in their curriculum. Additionally, the institution does have a department housed in student affairs comprised of two full-time individuals dedicated to incorporating service-learning on campus. They assist various groups on campus (academic and co-curricular) with service-learning programming as well as lead various service activities. The institution selected a random sample of undergraduate students who were invited via email to participate in the online survey, Profile of Today’s College Student (Profile).

A canonical correlation analysis (CCA) is conducted to determine if the level of involvement in community service and/or service-learning projects predicts differences in students. A canonical correlation analysis is a multivariate statistical technique that allows the researcher to simultaneously evaluate the
relationship between several predictors and several criterion variables (Sherry & Henson, 2005).

The study includes both statistical and practical significance of the results (Henson, 2006). Following Levin and Robinson’s (2000) suggestion, I first examined the magnitude of the “p value to determine the viability of a result” (Roberts & Henson, 2002, p. 243), then considered the effect size of the result. Considering effect size provides one way to evaluate practical significance (Henson, 2006). Overall $r^2$, canonical function coefficients and structure coefficients ($r_s$) are reviewed when examining effect size.

Procedures for Collecting Data

The data represents a random sample of undergraduate students enrolled at a mid-sized, private 4-year university located in the south central United States. Undergraduate students living on campus comprise the majority of the campus population. The institution selected a random sample of undergraduate students identified by class standing. Classifying students by class standing helps identify the student groups represented in the dataset. The students were invited via email to participate in the online survey, Profile of Today’s College Student (Profile). Participation was voluntary. There were 382 respondents who completed the survey.

The data was collected on the Profile of Today’s College Student survey administered by NASPA. The Profile is administered online in the spring to the sample provided by the institutions. Spring 2007 was the Profile’s inaugural year.
It was administered at 12 colleges and universities with an overall sample size of 60,970. The response rate in 2007 was 19% with 11,747 respondents nationally (NASPA website, 2010). In 2008, 45 colleges and universities administered the Profile with a total sample size of 204,645 (NASPA website, 2010). The overall national response rate was 20% making the number of respondents nationally 40,483 (NASPA website, 2010).

The Profile of Today’s College Student is designed to get an “accurate portrait of today’s college student by understanding who they are, how they behave, and what they believe” (NASPA website, 2010). The Profile is comprised of a demographics section, which all students complete, and nine additional sections. Four of the nine additional sections are randomly selected for the participant to complete. These nine sections include: “academic involvement; academic integrity; campus involvement; health and wellness; technology use; media consumption; diversity issues; values and beliefs; and future aspirations” (NASPA website, 2010). Each institution is provided the opportunity to add mandatory or optional institution specific questions. The institution did elect to add institution-specific questions; however, these questions had no connection to the content of this study and were not included in the analysis.

Research Questions

The research questions for this study are:

RQ₁: Does increased community service/service-learning participation predict multivariate effects in students’ Academic Skills; Social Integration;
Community Integration/Alumni Expectations; Connection with the Campus Community; and/or Change in Opinions, Values, & Attitudes?

RQ2: What criterion variables are most salient?

While the entire Profile contains over 300 questions, this study considers the responses to the 26 questions within the campus involvement section of the survey. These questions were classified into five factors by the administrators of the Profile. The purported factors in the literature are: Academic Skills; Social Integration; Community Integration/Alumni Expectations; Connection with the Campus Community; and Change in Opinions, Values and Attitudes (K. Vanderlinden, personal correspondence, May 20, 2010).

The factor Academic Skill comprises nine questions on the Profile. They are: “my self-confidence has increased”; “my stress-management skills have improved”; “my time-management skills have improved”; “my communication skills have improved”; “my critical thinking/problem solving skills have improved”; “my leadership skills have improved”; “my study skills have improved”; “I have become more productive”; and “I have learned to balance social activities with academic obligations (homework, studying, group meetings, etc.)” (K. Vanderlinden, personal correspondence, May 20, 2010).

The factor Social Integration comprises five questions on the Profile which are: “I have met people I would not have otherwise met”; “I have been able to meet individuals with different interests from my own”; “I have been able to meet individuals with similar interests to my own”; “I have been able to connect with
other students”; and “I feel part of the campus community” (K. Vanderlinden, personal correspondence, May 20, 2010).

The factor Community Integration/Alumni Expectations includes four questions from the Profile and include: “I have become more knowledgeable about the campus community”; “I am more likely to donate to my college after I graduate”; “I am more likely to complete my degree at this college”; and “my satisfaction with my collegiate experience has improved” (K. Vanderlinden, personal correspondence, May 20, 2010).

The factor Connection with the Campus Community includes six questions from the Profile. These are: “I have been able to connect with faculty”; “I have been able to connect with staff members/administrators”; “I feel part of the campus community”; “I have been able to make a difference on campus”; “I have gained experience/skills relevant to my academic major”; and “I have become involved with additional campus activities” (K. Vanderlinden, personal correspondence, May 20, 2010).

The final factor, Change in Opinions, Values & Attitudes, includes three questions from the Profile. These are: “my values and attitudes have changed”; “my goals in life have changed”; and “my understanding of diverse perspectives has changed” (K. Vanderlinden, personal correspondence, May 20, 2010).

The survey administrators completed a factor analysis on the questions within the campus involvement section of the survey. A factor analysis is a technique frequently used in multivariate research (Gall, Gall & Borg, 2003).
Factor analysis provides an empirical basis to create a few factors by grouping variables that are moderately or highly correlated with each other (Gall, Call & Borg, 2003). It was expected the responses on all outcomes would be correlated; therefore, the factor analysis included oblique rotation (Promax rotation) to take factor correlation into consideration (Kieffer, 1999; K. Vanderlinden, personal correspondence, May 20, 2010). Further, all factors with eigenvalues > 1.0 were considered and scree plots were analyzed (K. Vanderlinden, personal correspondence, May 20, 2010). Ultimately, factors with eigenvalues >.3 were included to minimize the number of factors while maximizing the meaning of a given factor (K. Vanderlinden, personal correspondence, May 20, 2010). The purpose of maintaining these factors in this study is to determine if the dataset is similar to the national data as well as to strengthen the generalizability of the results.

Following the factor analysis, the Profile administrators ran reliability analyses to determine Cronbach’s alpha for each factor (K. Vanderlinden, personal correspondence, May 20, 2010). Cronbach’s alpha (α) is a widely used statistical method to determine reliability (Gall, Gall & Borg, 2003). An alpha (α) of 0.7 or higher is generally considered a good scale for internal consistency (Nunnally & Bernstein, 1994). The Cronbach’s alpha (α) for each of the factors are: Academic Skill α = .944; Social Integration α = .872; Community Integration/Alumni Expectations α = .846; Connection with the Campus
Community $\alpha = .867$; and Change in Opinions, Values & Attitudes $\alpha = .788$ (K. Vanderlinden, personal correspondence, May 20, 2010).

Procedures for Analysis of the Data

A canonical correlation analysis (CCA) was conducted to determine if the level of involvement in community service and/or service-learning projects predicts differences in students. A canonical correlation analysis is a multivariate statistical technique that allows the researcher to simultaneously evaluate the relationship between several predictors and several criterion variables (Sherry & Henson, 2005). Conducting multivariate analysis in lieu of univariate techniques has several advantages. One advantage is limiting the probability of a Type I error (Sherry & Henson, 2005). When conducting too many statistical tests on the same variable in a dataset, the risk for Type I error increases (Sherry & Henson, 2005). Another advantage of employing multivariate techniques is that it can consider multiple causes and multiple effects therefore identifying relationships that univariate methods can miss (Sherry & Henson, 2005).

Both statistical and practical significance of the results were considered (Henson, 2006). Following Levin and Robinson’s (2000) suggestion, I first examined the magnitude of the “$p$ value to determine the viability of a result” (Roberts & Henson, 2002, p. 243), then considered the effect size of the result. Considering effect size provides one way to evaluate practical significance (Henson, 2006). I analyze overall $r^2$, canonical function coefficients and structure coefficients ($r_s$) when examining effect size.
In reviewing the literature, a few studies have included effect size with statistical significance results. Most of the studies (Tomkovicz, Lester, Fluncher & Wells, 2008; Vogelgesang & Astin, 2000; Novak, Markey & Allen, 2007; Reed, Jernstedt, Hawley, Reber & DeBois, 2005; Wang & Rodgers, 2006; Keen & Hall, 2009; Simons & Cleary, 2006) report small to moderate effect sizes. Therefore, small to moderate effect size in this study is anticipated.

The variables were reviewed for missing data prior to any analysis being conducted. The author determined to employ maximum likelihood (ML) algorithms available in SPSS Missing Values. ML is “built on the assumption that the observed data contain information that can be used to infer probable values for the missing data. In simplistic terms, information is borrowed from the complete data during the estimation of parameters that involve missing values” (Enders, 2001, p. 140).
CHAPTER 4

PRESENTATION OF DATA

A canonical correlation analysis (CCA) was conducted to determine if involvement in community service and/or service-learning projects predicts differences in students on academic skills, personal and interpersonal development and engagement. Participant data ($n = 382$) were collected and analyzed using PASW 18.0. The missing data was addressed through an expectation-maximization (EM) algorithm using maximum likelihood estimation to impute any missing values. Of the responses collected, seven were removed due to substantial missing data. Means and standard deviations are reported below for each variable (Table 1).

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>participation</td>
<td>2.15</td>
<td>.902</td>
<td>.416</td>
<td>-.595</td>
</tr>
<tr>
<td>Criterion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>academic</td>
<td>35.00</td>
<td>6.44</td>
<td>-.459</td>
<td>.129</td>
</tr>
<tr>
<td>socialint</td>
<td>21.80</td>
<td>3.02</td>
<td>-.722</td>
<td>-.158</td>
</tr>
<tr>
<td>commint</td>
<td>15.72</td>
<td>3.14</td>
<td>-.561</td>
<td>-.212</td>
</tr>
<tr>
<td>connect</td>
<td>23.20</td>
<td>4.79</td>
<td>-.367</td>
<td>-.441</td>
</tr>
<tr>
<td>attitude</td>
<td>10.73</td>
<td>2.53</td>
<td>-.187</td>
<td>-.133</td>
</tr>
</tbody>
</table>

In this study, the mean value for the variable participation was attending events/activities while the national mean was no involvement/do not participate. It
appears the students at this institution are more involved in community service/service-learning activities than the national respondents. With the intentional focus the institution has on service, it was expected that students would be more involved in service.

The mean values for Academic Skills (academic), Community Involvement/Alumni Expectations (commint) and Connection with the Campus Community (connect) were neutral, but edging toward somewhat agree. The national means for each of these were neutral. It appears that the students at this institution had a slightly higher level of agreement than the national respondents on these variables. The mean value for Social Integration (socialint) was somewhat agree as was the national mean. The mean values for this dataset and the national data were both neutral for Change in Opinions, Values and Attitudes (attitude). Consequently, while the means for this dataset are slightly higher than the national dataset means for the dependent variables, they were statistically similar.

To determine if the assumption of univariate normality is met, both skewness and kurtosis coefficients were considered. The degree of skewness refers to how the data is distributed (Gall, Gall & Borg, 2003). If the data has extreme scores on one end of the scale or the other, the data is non-symmetric which can skew the results. The degree of kurtosis refers to the relative height and width of the distribution. A positive value for kurtosis means the distribution is taller or skinner than a normal distribution (leptokurtic), while a negative value for
kurtosis means the distribution is shorter and wider than a normal distribution (platykurtic). Generally, skewness values between -1.0 and +1.0 are within normal ranges (Henson, 1999). For kurtosis values, normal ranges include -2.0 to +2.0 (Henson, 1999).

In looking at the values for skewness and kurtosis for the variables, the independent variable, participation, is the only value that is slightly positively skewed (.416). The independent variable’s value for kurtosis is -.595. For the dependent variables, all five factors are slightly negatively skewed which illustrate the responses lean toward higher levels of agreement. As far as kurtosis coefficients, only the factor Academic Skills has a positive value. However, the values for both skewness and kurtosis for the entire model were found to be within acceptable ranges suggesting a reasonably normal distribution of data permitting further analysis to be conducted.

Multivariate normality was assessed using Mahalanobis distance and examined using a graphic method called MULTINORM. “Mahalanobis distance indicates a geometric distance a given case is from the vector of means” (Henson, 1999, p. 203). It standardizes the “variability of all variables” and corrects for correlations “that may exist between the variables” (p. 205) to calculate the “distance of each case from the mean vector” (Henson, 1999, p. 204). One case was found to be an outlier based on its relative distance from the linear plot of Mahalanobis distance values and was removed leaving a final sample size of \( n = 374 \). For the analysis to be considered sufficient to conduct a
canonical correlation analysis, a 10:1 ratio is required. The current study employed a 74:1 ratio making it sufficient to continue with the canonical correlation analysis.

To make comparisons about the reliability of the data and to improve generalizability of the results, Cronbach’s alpha was analyzed. When comparing Cronbach’s alpha for this dataset with the national dataset for each factor, the results yielded little difference between them. For the factor Academic Skills, the Cronbach’s alpha in the national dataset was .944 while the dataset used in the current study was .924. The factor Social Integration in the national dataset alpha was .872 while this dataset yielded .850. The biggest difference was found in the factor Community Integration/Alumni Expectations with the national dataset’s alpha (.846) while the current study’s dataset was .802. Connection with the Campus Community was the same in both datasets (.867) while Change in Opinions, Values and Attitudes had a difference of .004 between the national dataset's alpha and the alpha for the dataset used in the current study. The data appears to have a high level of reliability which was also reflected in the national dataset.

For the first research question, the results show that community service/service-learning participation does predict multivariate effects in students’ Academic Skills; Social Integration; Community Integration/Alumni Expectations; Connection with the Campus Community; and Change in Opinions, Values and
Attitudes. The most salient variable to participation is probably Connection with the Campus Community and possibly Social Integration.

Both $p$ values and effect sizes were used to evaluate for statistical and practical significance (Sherry & Henson, 2005). Statistical significance testing “assess the reliability of the relationship” (Trusty, Thompson & Petrocelli, 2004, p. 107) while “effect sizes assess the strength of the relationship” (p. 107). The model was found to be statistically significant $F (5, 368) = 8.295, p < .001$. The canonical correlation analysis yielded a canonical correlation coefficient ($R_c$) of .318 and a squared canonical correlation ($R_c^2$) of .101. Therefore, the canonical function explains approximately 10% of the variance across all variable sets (Sherry & Henson, 2005).

Effect sizes are also calculated by using $1 - \text{Wilks'} \lambda (1 - .899)$ as a measure of explained variance (Sherry & Henson, 2005). Because Wilks’ $\lambda$ represents unaccounted for variance in the model, $1 - \text{Wilks'} \lambda$ yields the squared canonical correlation ($R_c^2$) for the model (.101). Therefore, 10.1% of the variance is explained across all variables. Another measure of variance accounted for in the model is eigenvalue which is .113. The fact that each of these measures of variance are essentially equal is expected for this study. While the model is statistically significant, an effect size of 10.1% is relatively small. However, a small effect size was expected based on findings in previous research (Volgelgesang & Astin, 2000; Reed et al., 2005; Novak, Markey & Allen, 2007; Tomkovick, Lester, Fluncher & Wells, 2008) where reported effect size range
from 6% to 15% of the variance explained. Therefore, further analysis can be conducted.

Table 2 presents the standardized canonical function coefficients. These weights are “directly analogous to β weights in regression” (Sherry & Henson, 2005, p. 40). The relevant criterion variable is Connection with the Campus Community (-.419) with Social Integration (-.297) making a secondary contribution to the synthetic criterion variable. This illustrates Academic Skills, Social Integration and Community Integration/Alumni Expectations all contribute at least 66% to the total effect. While some of the variance is shared, they contribute much more than Changes in Opinions, Values and Attitude (-.072). The conclusion was supported by the squared structure coefficients.

### Table 2

**Canonical Solution for Criterion Factors**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>$r_s$</th>
<th>$r_s^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>-.216</td>
<td>-.861</td>
<td>.741</td>
</tr>
<tr>
<td>SocialInt</td>
<td>-.297</td>
<td>-.866</td>
<td>.750</td>
</tr>
<tr>
<td>CommInv</td>
<td>-.154</td>
<td>-.799</td>
<td>.639</td>
</tr>
<tr>
<td>Connect</td>
<td>-.419</td>
<td>-.929</td>
<td>.863</td>
</tr>
<tr>
<td>Attitude</td>
<td>-.072</td>
<td>-.607</td>
<td>.368</td>
</tr>
</tbody>
</table>

Structure coefficients ($r_s$) are an effect size measure that indicates the proportion of variance shared between the observed variable and the synthetic dependent variable (Sherry & Henson, 2005). They are directly analogous to Pearson r with a range of +1 to -1, inclusive (Sherry & Henson, 2005). Thompson
(1997) argues structure coefficients are “important interpretation aids” (p. 10).
Using both canonical function coefficients as well as structure coefficients provide better understanding of the results (Thompson, 1997). The structure coefficients in this model further confirm the importance of connection and also help demonstrate the importance of Social Integration. However, they do demonstrate that Academic Skills is potentially contributing more to the model than would have been otherwise assumed using only beta weights in the interpretation of results ($r_s = .861$). Additionally, the structure coefficients show that all of the variables have the same sign illustrating they are all positively related. The results are generally supportive of existing research.

In considering intercorrelations between the observed variables, the results show that a relationship exists between the predictor variable, participation, and all of the dependent variables. While this information further confirms information contained in the structure coefficients, looking at correlations between the observed variables helps us understand the relationship of the observed variables in terms of shared variance. Table 3 contains the correlation values for each variable in the model. All of the variables are positively correlated with each other which was expected. As anticipated, the dependent variables are strongly correlated to each other. The variables showing stronger correlation to participation are Connection to the Campus Community, Academic Skills, Social Integration and Community Integration/Alumni Expectations. It further confirms that Changes in Opinions, Values and Attitudes
is not as correlated and as noted by the canonical function coefficient, does not contribute as much to the shared variance.

Table 3

*Intercorrelations Between Participation and Five Factors*

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. participation</td>
<td>—</td>
<td>2. Academic Skills</td>
<td>.274**</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Social Integration</td>
<td>.276**</td>
<td>.651**</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Community Involv/Alum</td>
<td>.254**</td>
<td>.649**</td>
<td>.616**</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Connection</td>
<td>.296**</td>
<td>.733**</td>
<td>.721**</td>
<td>.677**</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>5. Attitudes</td>
<td>.193**</td>
<td>.609**</td>
<td>.433**</td>
<td>.529**</td>
<td>.461**</td>
<td>—</td>
</tr>
</tbody>
</table>

** **p < .01

Chapter V will present a summary of the study, discussion of the results, what can be concluded from the results and implications for future research.
CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Service-learning continues to gain in popularity across the higher education landscape. Many institutions have a campus-wide focus on service. For example, Miami-Dade Community College in Florida has focused on service. From 1996 to 2002, more than 200 faculty and more than 13,000 students participated in “real world” experience through course-related service-projects (Chronicle of Higher Education, 2002). After Hurricane Katrina hit New Orleans, Tulane decided to revamp the curriculum to incorporate service to help the community recover (Mangan, 2010). Many students who had volunteered in New Orleans wanted to return and attend school at Tulane when they heard of the new service requirement. When Tulane reopened after Katrina, they experienced applicants in record numbers (Mangan, 2010). When President Obama was elected, he listed service as central to his higher education agenda (Ashburn, 2009).

Despite the recent support, there are still many skeptics of service-learning. Many faculty at research institutions with less focus on applied learning need to be convinced that service-learning can enhance their research (Furco, 2001). The supporters of service-learning demand more research on the impact of service-learning to identify the benefits to these skeptics. Further, incoming students are often looking for institutions that incorporate service across the
institution. Since service-learning can be found in co-curricular and academic programming, research on community service/service-learning needs to address both sides. The majority of the research has focused on service-learning in academics often neglecting the co-curricular experiences. Further, existing research tends to focus on changes in students’ academic skills and changes in attitudes and values when both tend to emphasize changes that occur in the classroom. Fewer studies consider the impact of community service/service-learning on social and community integration or connection with the campus community often emphasized in co-curricular programming.

The focus of this study was to examine the impact of community service/service-learning on participants in five areas: changes in academic skills/knowledge, changes in opinion, values and attitudes, social integration, community integration/alumni expectations and connection to the campus community. Employing multivariate techniques allowed simultaneous evaluation of relationships between participation and the variables.

The results confirm previous research that participation in community service/service-learning activities impacts students. This supports the vast amount of research on how service-learning affects students’ academic skills (Astin & Sax, 1999; Vogelgesang & Astin, 2000); career choices (Simons & Cleary, 2006; McHatton, Thomas & Lehman, 2006); attitudes and values (Eyler, Giles & Braxton, 1997; Bordelon & Phillips, 2006; Bernacki & Jaeger, 2008; Einfield & Collins, 2008); and sense of social responsibility (Reed et al., 2005).
Future research should consider co-curricular service programming's impact on students.

The study found that participation in community service/service-learning activities does impact students on all five variables considered. The results were statistically significant at $p < .001$ level. While the results are statistically significant, practical significance should not be neglected. “Even miniscule group differences may be statistically significant at some sample size” (Henson, 2006, p. 605). Consequently, practical significance needs to be considered in the form of effect size measures. The effect size results for the entire model showed a relatively small effect. However, a small effect size was expected based on findings in previous research (Volgelgesang & Astin, 2000; Reed et al., 2005; Novak, Markey & Allen, 2007; Tomkovick, Lester, Fluncher & Wells, 2008) where reported effect size were similar to the results of this study.

When reviewing the effect size results for the dependent variables, the present study shows that participation has a strong impact on Connection with the Campus Community. Of the variables considered, Connection with the Campus Community was found to be the most impacted by participation. The relationship was identified in the effect size measurements conducted. In fact, the structure coefficient is nearing a perfect relationship (-.929). Further, participation has a moderate positive correlation with Connection with the Campus Community. Results confirm that community service/service-learning provides students’ opportunities to become connected to faculty, staff and the general
campus community and opportunities to gain experience and skills related to their academic major. Jones (2002) includes a student’s comment illustrating the importance of service-learning to experiences around her academic major:

I could go to lecture every day and hear about what characteristics make a good leader, how an organization works, or the idea of otherness. I might even crack a book in the evening and read about someone who is trying to make a difference in the world. I’d cram for the exam so that I would be able to recite the concepts, and then the material would be forgotten within a week. It is not until the knowledge I gained can be actively applied to a real-life organization that everything clicks into place. The service helps the depth of learning (p. 11-12).

The findings also suggest Social Integration is moderately impacted by participation. Participation also has a moderate positive correlation with Social Integration. It confirms other research which states service-learning provides opportunities for students to develop relationships with people who they would not have otherwise (Brody and Wright, 2004). Brody and Wright (2004) employed the self-expansion model as a motivation for what individuals are motivated to participate in service-learning. They wrote “it seems reasonable that the opportunity to interact and form meaningful relationship with others may well represent a significant aspect of the motivation to pursue and to continue service-learning experiences” (Brody & Wright, 2004, p. 21).
When considering the factor Academic Skills, participation strongly impacts academic skills as found in previous research (Astin & Sax, 1998; Conway, Amel & Gerwien, 2009). However, the variable explains less unique variance than Connection with the Campus Community and Social Integration. Additionally, Academic Skills also has a moderate positive correlation with participation. Mundy and Eyler (2002) note that service-learning emphasizes learning through “rich problem-solving” (p. 9) and in experiential environments where students can “refine complex knowledge structures” (p. 9). Students can then apply this knowledge base to new situations (Mundy & Eyler, 2002). Novak, Markey and Allen (2007) conducted a meta-analysis on nine published studies where comparisons were made between a course where one section contained a service-learning component and one section was a control group. The results show that service-learning positively impacts academic understanding of the subject matter and improves skills learned as well as the ability to apply the knowledge and skills to different complex social issues. Further, Vogelgesang and Astin (2000) found connecting service with academic course material helps develop cognitive skills. Deeley (2010) also found effects in student intellectual and personal development through the use of experiential learning, critical reflection and small group work.

When looking at the salience of each dependent variable, not all of the dependent variables contributed meaningfully to the model. In fact, while research shows participation in community service/service-learning effects
changes in opinions, values and attitudes (Eyler, Giles & Braxton, 1997; Bernacki & Jaeger, 2008), the results of this study show the effects are minimal. However, the studies reporting the relationship often do not report effect size to determine the practical significance of the findings so it is unknown whether these studies considered effect size in their analyses. In addition, an effect may exist, but participation may impact the other variables more than changes in opinions, values and attitudes. However, Jones (2002) suggests that not all students will benefit from service experiences. Jones (2002) notes that sometimes students do not benefit from the experience due to a combination of “the student’s own background (which becomes quite apparent in a service-learning activity), developmental readiness for such a learning experience, and the privileging conditions that put a college student in a community service organization as a volunteer in the first place” (p. 13). Further suggesting students do not get it because of unwillingness, but rather due to “cognitive capacity, self-knowledge, and interpersonal maturity” (Jones, 2002, p. 15). It is possible that the students in this sample may not have benefitted from the service experience.

According to Astin’s theory of student involvement (1985), service-learning could be important when considering the impact on persistence. Students who are involved are more likely to persist at the institution so participating in service-learning experiences could increase retention rates at the institution. In fact, Keup (2005) found service-learning a predictor of first-year students’ intention to re-enroll at their institution over first-year seminars and learning communities.
Involvement theory is also a useful tool in designing learning environments which include incorporation of service-learning. The two variables in the present study considered to be most impacted by participation in service-learning are also directly tied to involvement. Social Integration considers relationships students have with fellow students as well as the general campus community. Additionally, Connection with the Campus Community also considers the connection and involvement of students with faculty, staff and various campus activities. Keup (2005) also found service-learning to be a significant opportunity for first-year students to interact with faculty.

Kuh’s (2009) concept of student engagement emphasizes the institution’s role in keeping the students involved. Incorporating community service/service-learning into institutions’ culture can encourage participation in these activities and increase the quality of the students' learning at the same time. Student engagement also focuses on educational processes and outcomes. Service-learning can be an educationally purposeful activity that will not only enhance the student’s overall experience, but can also potentially improve persistence as well as learning outcomes.

Mundy and Eyler (2002) provide ten guidelines for institutions who desire to incorporate service-learning while increasing retention. As found in the current study, they suggest institutions create service-learning experiences that maximize interaction between students from diverse backgrounds. They also suggest service-learning projects that facilitate interaction between students with
faculty as well as projects that include students, administrators and faculty as suggested by the findings of the current study. Mundy and Eyler (2002) emphasize the importance of reflection in the service-learning experience to facilitate personal and cognitive growth as well as interaction with classroom peers. Reflection should also include how their community experiences relate to their development of skills and abilities in the career they desire to pursue (Mundy & Eyler, 2002). Additionally, Mundy and Eyler recommend including service-learning opportunities within the first-year experience which Kuep (2005) found to be important in re-enrollment plans for first-year students. Finally, they suggest designing service-learning experiences through meaningful experiences and activities with a focus on quality placements, reflections and applications (Mundy & Eyler, 2002).

One of the limitations of the study focuses on the dependent variables. The instrument is designed such that the respondents' answers to the questions of impact were based on their campus involvement in general. Consequently, the respondents could be referring to a variety of campus activities such as campus events (movies, concert, speakers), athletics/sports, Greek life, orientation, performing arts, political activism, residential life, student government, student media, student clubs and/or organizations, spiritual/religious services, and/or honor societies (NASPA, n.d.) not solely community service/service-learning. While not all students who would have participated in a community service/service-learning project have participated in other campus activities,
research suggests they most likely have been involved on campus in other areas such as athletics (Chalk, 2009), political activism (Yates & Youniss, 1999), student government, student organizations, religious services (McCrohan & Bernt, 2004), honor societies, and Greek life (Mathiasen, 2005). Consequently, the results could have been impacted depending on what campus activity each individual respondent was considering when responding to the survey.

Another limitation is the factors used for the dependent variables. The factors used as the dependent variables were deducted through a factor analysis conducted by NASPA. The factors were designed with the 2009 version of the instrument, while this study is based on the 2008 administration of the instrument. The 2009 version contains questions not found on the 2008 administration. However, the Cronbach’s alpha analyses noted few differences in the reliability coefficients between the two versions. But, the factor most impacted by questions not on the 2008 survey was Academic Skills. While the factor still contained nine questions, there were three additional questions on the 2009 administration. Incorporation of these additional questions in the analysis could have clarified the results as Academic Skills was found to have a small beta weight, but a large effect.

Conclusions of the Findings

According to the multivariate analysis conducted in the present study, participation in community service/service-learning impacts students’ Academic Skills, Social Integration, Community Integration/Alumni Expectations,
Connection with the Campus Community and Change in Opinions, Values and Attitudes. The results were statistically significant. Additional analysis incorporated effect size measures to further strengthen the results. Connection with the Campus Community and Social Integration were the variables most impacted by participation in community service/service-learning. Surprisingly, Change in Opinions, Values and Attitudes was found to be least impacted. Although the effect size for the entire model was relatively small, effect sizes reported in similar studies also report small effect sizes and were expected in this study. While the sample was taken from a single institution, the reliability coefficients for the dependent variables were strong. Even though reliability coefficients are difficult to compare between different samples, the national dataset had similar means and reliability coefficients as the sample used in this study.

Recommendations for Future Research

Service-learning’s influence in higher education is continuing to increase. The present study raises several areas for conducting future research.

- So few studies consider the impact of service-learning through co-curricular experiences, yet community service/service-learning permeates throughout universities’ and colleges’ student affairs programming. More studies need to consider the impact of these experiences on students.

- The instrument used in this study, The Profile of Today’s College Student, should be employed in more studies. While the survey is long for students
to complete, it includes more than campus involvement and could contain rich information not being utilized.

- The chances of students participating in a short-term service experience are fairly high across most campuses through various student affairs programming. More study of short-term experiences needs to be conducted to determine what programmatic elements should be included to ensure students are impacted through the service experience.

- Additional research on the types of students who participate in service activities should be conducted to determine the variables found to be impacted by service-learning. Are these characteristics or strengths found in the students who select service activities? Or are they brought about due to the service experience? This may focus more on the co-curricular programming rather than academic programming, however, students’ academic major may also play a part in the decision to participate in service experiences.

- Much of the research on service-learning employs univariate analyses. Due to the nature of service-learning, more research should be conducted employing multivariate analyses to investigate multiple effects simultaneously.

- The present study found participation strongly impacts students’ connection with the campus community; however, little research mentions this. Previous research identifies connection with persistence so future
research on how service-learning can facilitate connection and potentially persistence should be conducted.

- A study comparing students’ development through the use of Perry’s Scheme for Intellectual Development and service-learning should be conducted. It could help clarify the questions raised on why some students understand and grow from the service experience and some do not.

By studying service-learning programming further, institutions can learn how to best ensure students are impacted by the experiences.
REFERENCE LIST


