

# Benefits of Using Service-Learning in the Preparation of Teachers: An Analysis of Agricultural Education Teacher Educators' Beliefs and Intentions

Richie Roberts<sup>1</sup>, M. Craig Edwards<sup>2</sup>, and J. Shane Robinson<sup>3</sup>

## Abstract

*In the 1990s, higher education institutions began to dedicate substantial resources to support the integration of service-learning (SL) in courses across university campuses. However, a dearth in the knowledge base endures in regard to understanding how faculty members', and especially agricultural education teacher educators', underlying beliefs about the benefits of SL may influence their intentions and associated planned behaviors. This study, therefore, sought to understand the behavioral beliefs and intentions of agricultural education teacher educators regarding their use of SL as a method of instruction. To accomplish this, we used descriptive statistics to describe results derived from measures of relationships among the variables of interest. Overall, the teacher educators perceived that SL could provide benefits to classrooms and communities. Findings also revealed statistically significant relationships ( $p < .05$ ) among the dependent variables and participants' prior SL experiences. Despite reporting positive beliefs about the method, participants generally indicated they did not intend to use or highlight SL in their teaching methods courses. Future research should explore the chasm that exists between teacher educators' beliefs and their intentions to use the method in the preparation of agricultural education teachers.*

**Keywords:** higher education; pedagogy; service-learning; teacher preparation

## Introduction

At the close of the 20th century, the Kellogg Commission on the Future of State and Land-Grant Universities (1999) released *Returning to Our Roots*; a report that called for higher education institutions to begin to reemphasize *engagement, community partner-building, and practical educational experiences*. As the report gained national attention, many faculty members in higher education *chose to implement service-learning (SL) to address the principles outlined by the Kellogg Commission (Speck & Hoppe, 2004)*. It is important to note that faculty members who decided to invest in SL meant a fundamental pedagogical change occurred at individual levels, and preceded the method diffusing more broadly and becoming routinized (Rogers, 2003) over time at their respective institutions (Vogel, Seifer, & Gelmon, 2010). Thereafter, the popularity of SL grew immensely across many university campuses. However, confusion remains regarding its meaning. For instance, *community service* and *SL* are frequently used interchangeably and overlap considerably in the

---

<sup>1</sup> Richie Roberts is an Assistant Professor of Agricultural Education in the Department of Agricultural Education and Extension and Evaluation at Louisiana State University, 131 J.C. Miller Hall, Baton Rouge, LA, 70803; roberts3@lsu.edu

<sup>2</sup> M. Craig Edwards is a Professor of Agricultural Education and Coordinator of Graduate Studies in the Department of Agricultural Education, Communications, and Leadership at Oklahoma State University, 448 Ag Hall, Stillwater, OK, 74068-6032; craig.edwards@okstate.edu

<sup>3</sup> J. Shane Robinson is a Professor of Agricultural Education in the Department of Agricultural Education, Communications and Leadership and the Associate Director of the Institute for Teaching and Learning Excellence at Oklahoma State University, PIO Building, Stillwater, OK, 74078; shane.robinson@okstate.edu

literature. Despite sharing an element of volunteerism, SL scholars (Eyler, 2002; Giles & Eyler, 1994) have argued the two practices should be understood independently. In differentiating between the terms, *community service* is often conceptualized as a voluntary act and independent of coursework or related learning assignments (Astin & Sax, 1998; Astin, Sax, & Avalos, 1999). In contrast, SL is integrated into the curriculum and seeks to foster academic achievement while also generating greater social and cultural understanding through student reflection and subsequent actions (Crews, 2002).

From university students' perspectives, courses that involve a SL element have a number of unique benefits. Those benefits include (a) opportunities to apply learning to a real-world setting, (b) deeper relationships with instructors, (c) opportunities for personal growth and development, and (d) a heightened sense of social and civic responsibility (Eyler & Giles, 1999; Eyler, Giles, Stenson, & Gray, 2001). Although students' institutions have woven *civic engagement* and *service* into the framework of their missions, Wade and Demb (2009) theorized faculty members' beliefs about the perceived benefits and barriers associated with using SL could be categorized as one of three factors: (1) institutional, (2) professional, or (3) personal.

During the 1990s, higher education institutions began to dedicate substantial amounts of resources to support the integration of SL into their courses (Butin, 2010; Hinck & Brandell, 2000). To guide administrators and other decision-makers in this process, scholars (Abes, Jackson, & Jones, 2002; Antonio, Astin, & Cress, 2000; Vogel et al., 2010) articulated the *role of SL support offices and their importance* in assisting faculty with incorporating the method so student learning and university-community partnerships could be enriched. Bringle and Hatcher (1996) provided case examples to assist universities in (a) providing training and professional development for SL, (b) developing SL mentorship programs, and (c) publicizing faculty members' SL successes. The manifestation of these institutional changes positively influenced faculty members' use of SL at some schools (Abes et al., 2002).

Another area of particular emphasis portrayed throughout the SL literature is the role of faculty members' *professional factors* such as their academic ranks – a variable yielding mixed results. In particular, some studies reported faculty members in lower ranking positions were more predisposed to using SL as an instructional approach (Abes et al., 2002; Banerjee & Hausafus, 2007); however, other investigators (Furco & Moely, 2012; Russell-Stamp, 2015) indicated non-statistically significant relationships regarding this professional attribute. One reason for this inconsistency was that an interaction existed between faculty members' professional characteristics and their perceptions of impediments to using the method, such as the *time commitment* needed to produce high-quality SL experiences (Abes et al., 2002). For example, Abes et al. (2002) reported faculty members at research-focused institutions often articulated that they found it difficult to balance their professional roles when using time-consuming instructional methods. And because service is often the least rewarded aspect of the tenure process, many faculty members viewed SL as a *distraction* (Banerjee & Hausafus, 2007). In addition, these perceived barriers negatively influenced the likelihood of faculty members pursuing resources for SL (Kezar, 2013), a notion also connected to their *unique personal characteristics*.

To identify the personal characteristics of faculty members more likely to implement SL in their courses, McKay and Rozee (2004) conducted in-depth interviews. Using Rogers' (2003) diffusion of innovations theory, the researchers found faculty members were more predisposed to implement SL if they viewed it as complementary or *compatible* with their teaching philosophies. Moreover, the instructors perceived SL offered unique benefits to their classrooms as well as to the local community (McKay & Rozee, 2004), i.e., it held *relative advantage* (Rogers, 2003) over other teaching methods. Building on these findings, Pribbenow (2005) explored the impacts SL had on faculty members and found they expressed having more meaningful teaching experiences, deeper relationships with students, and that students had higher academic achievement. These findings have fueled calls for teacher

educators to purposefully integrate SL into their courses while also outlining its use as a pedagogy for preservice teachers – a notion emphasized by recent literature in agricultural education (Roberts, 2017; Roberts & Edwards, 2015, 2018; Roberts, Edwards, & Robinson, in press).

Existing empirical evidence also demonstrates that SL may improve the perceived *career readiness* of teacher candidates (Anderson, 2000; Meaney, Griffin, & Bohler, 2009). However, teacher educators of agricultural education perceive that deterrents exist at the classroom level, which influences their intentions to use the method in teacher preparation programs (Roberts et al., in press). In addition to classroom barriers, agricultural education teacher educators also articulated that lack of understanding, restrictive teacher credentialing policies, and time constraints were obstacles to implementing the method (Roberts & Edwards, 2018). Even though we now better comprehend factors that discourage SL's adoption in agricultural education, a dearth of knowledge endures in understanding how agricultural education teacher educators' underlying beliefs about the benefits of SL may influence their intentions and associated planned behaviors (Ajzen, 1991).

### Theoretical/Conceptual Framework

Deficiencies in the literature reflect the complicated space occupied by SL in teacher education. In the current study, Ajzen's (1991, 2002) theory of planned behavior (TPB) was used as a basis for investigating the beliefs and intentions expressed by teacher educators of agricultural education about SL as an instructional method for them *and* their preservice students. TPB lies at the intersection of work regarding individuals' beliefs, decision-making behaviors, and motivations (Ajzen, 1991). Through the lens of TPB, Ajzen (2006) posited that behaviors are the product of an individual's underlying beliefs and intentions. Ajzen (1991) also theorized that beliefs are understood best by viewing them through three distinct lenses: (1) behavioral, (2) normative, and (3) control. Behavioral beliefs reflect the attitudes individuals have toward behaviors, whether positive or negative (Ajzen & Fishbein, 1980).

Meanwhile, normative beliefs refer to the level of social pressure individuals perceive (Ajzen, 1991, 2006). Finally, control beliefs represent the level of difficulty individuals perceive involved with actualizing specific behaviors. Ajzen (1991) maintained such beliefs foreground the intentions individuals hold about future actions. TPB has been used to analyze a range of planned behaviors such as college retention (Sutter & Paulson, 2017), environmental consciousness (DeLeeuw, Valois, Ajzen, & Schmidt, 2005), and instructional practices (Kumar, Karabenick, & Burgoon, 2015), among others. For this study, we examined the behavioral beliefs of teacher educators of agricultural education regarding SL by using the Web-based Faculty SL Beliefs Inventory [wFSLBI] (Hou, 2010). Their intentions were assessed by collecting participants' course syllabi and analyzing such using Gelmon's, Holland's, Driscoll's, Spring's, and Kerrigan's (2001) Service-Learning Syllabus Analysis Guide (SLSAG). In addition, it should be noted that existing SL literature was important in shaping the conceptual basis of this study. For instance, through previous research on faculty members' SL beliefs, we identified six variables, i.e., the external variables for this study, which influence the planned behaviors of faculty members (Abes et al., 2002; Banerjee & Hausafus, 2007; Barth, Bent, Fischer, Richter, & Rieckmann, 2014; Bringle & Hatcher, 1996; Bulot & Johnson, 2006; Butin, 2006; Colbeck & Wharton-Michael, 2006; Conway, Amel, & Gerwien, 2009; Cooper, 2014; Hou, 2010; Hou & Wilder, 2015). The variables included faculty members' (a) SL experience, (b) gender, (c) age, (d) education, (e) tenure/rank, and (f) institution type. Based on Ajzen's (1991) TPB and the identified external variables, a conceptual model (see Figure 1) was developed to guide this investigation. The conceptual framework was comprised of the six external variables as well as four factors consistent with the TPB (Ajzen, 1991).

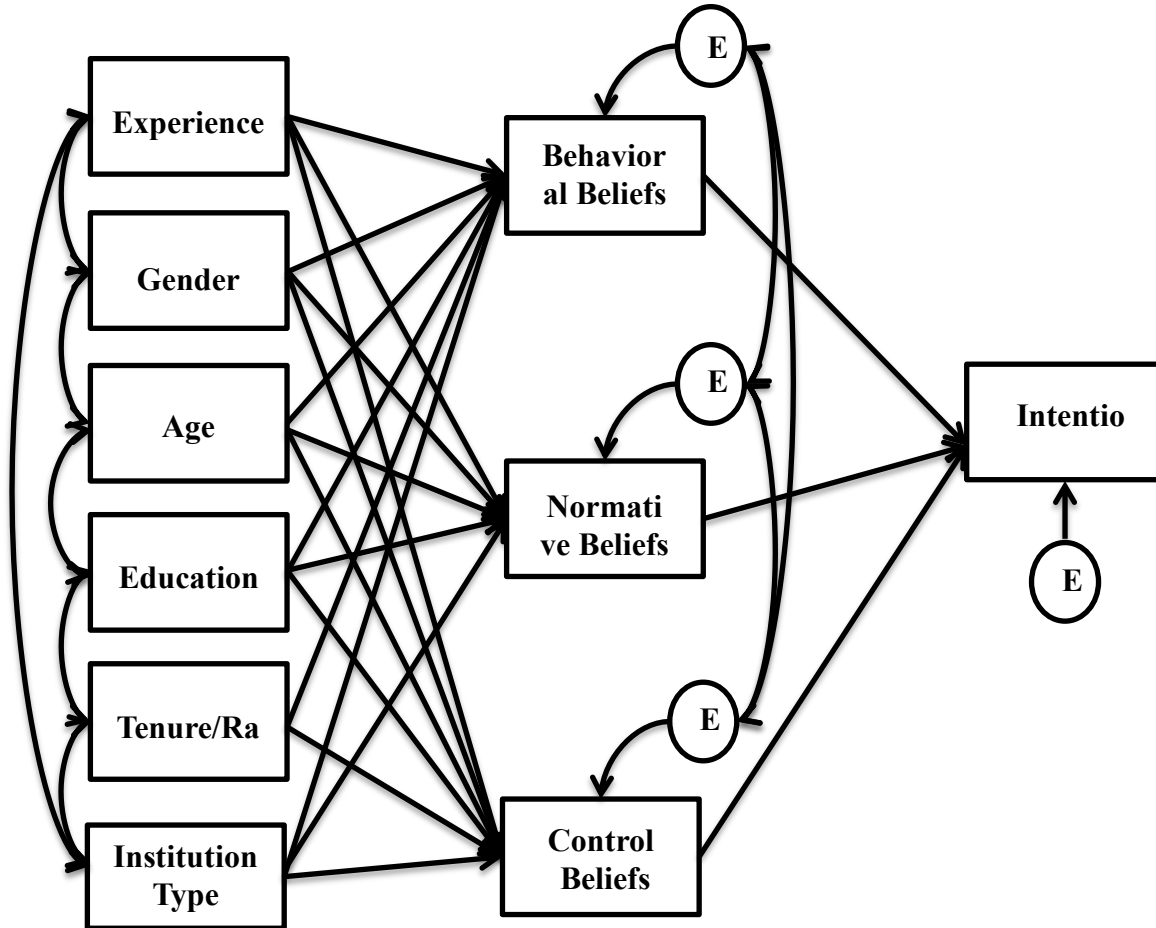


Figure 1. The conceptual framework for this study as derived from Ajzen’s (1991) theory of planned behavior and related SL literature. Note. “E” represents the study’s external variables in regard to influencing the beliefs of agricultural education teacher educators.

### Purpose and Objectives

This investigation sought to describe the *behavioral beliefs* and *intentions* of teacher educators of agricultural education as related to using SL as a method of instruction. The manuscript features one aspect of a larger investigation. Participants’ *normative* and *control* beliefs were reported in a separate work (Roberts et al., in press). Because this study was positioned to examine teacher educators’ views about a method of instruction, i.e., SL, which could be used to assist in building the capacity of communities, it addressed the American Association for Agricultural Education’s Research Priority Area 6: *Vibrant, Resilient Communities* (Graham, Arnold, & Jayaratne, 2016). Three research objectives guided the study: 1. Describe agricultural education teacher educators’ *behavioral beliefs* about using SL as a method of instruction; 2. Describe agricultural education teacher educators’ *intentions* in regard to using SL as a method of instruction; and 3. Describe the relationships among agricultural education teacher educators’ *behavioral beliefs*, *intentions*, and the study’s *external variables*.

### Methods and Procedures

We conducted a national census of agricultural education teacher educators’ *behavioral beliefs* and *intentions* regarding SL’s use as a method of instruction. To accomplish such, the American

Association for Agricultural Education's (AAAE's) membership directory provided the study's respondent frame. In addition, we employed Dillman's, Smyth's, and Christian's (2014) tailored design method to collect data using a web-based instrument, which was created using Qualtrics™ online software and administered through AA AE's electronic mail listserv. The agricultural education teacher educators were requested to upload course syllabi to the web-based instrument or transmit it to the lead researcher by electronic mail to assess their *intentions* about using SL as a method of instruction.

### Data Collection and the Population

More than 80 higher education institutions in the United States prepare school-based, agricultural education (SBAE) instructors (Birkenholz & Simonsen, 2011; Kantrovich, 2010). To ensure the population of interest was identified, we requested that participants indicate if they "taught at least one agricultural education teaching methods course during the three previous academic years or would do such in the spring academic term of 2017" (Roberts, 2017, p. 14). The responses to this item were used as a sorting variable to determine whether their participation should end or if the teacher educators were eligible to complete the instrument. Using this procedure, we identified 46 (59%) usable responses from 43 institutions across the United States. Of note, from a total of 77 responses, 31 were disregarded for analysis because they did not meet one or more of three criteria: (1) completion of the instrument, (2) submission of a course syllabus, or (3) the relevant contact information required to link data, as warranted by the larger study, was not provided. In accord with Dillman et al. (2014) tailored survey design, we sent a pre-notice message as well as a formal invitation and three reminders at timed intervals to optimize participation in the study.

Agricultural education teacher educators exhibited a variety of personal, professional, and institutional characteristics, but similarities among participants were also reported. For example, the population included 33 males (71.7%) and 13 females (28.3%) with a(n) racial/ethnic composition of 97.8% White ( $f = 45$ ) and 2.2% African American ( $f = 1$ ). A wide range of diversity, however, was reported in regard to participants' ages, which varied from 29 to 71 years of age. Slightly more than one-third of the teacher educators were 31 to 40 years old ( $f = 17$ ) and 13 (28.3%) ranged from 41 to 50. Participants represented 26 states. Of all states, 15.2% ( $f = 7$ ) of the respondents were from Texas; Kentucky, North Carolina, Oklahoma, and Tennessee had three representatives or 6.5% each.

When asked about their professional characteristics, 45 (97.8%) indicated they had earned doctoral degrees and 22 (47.8%) held the rank of assistant professor. More than 40% ( $f = 20$ ) were either associate professors or professors. Moreover, nearly one-half ( $f = 22$ ) were tenured, and 18 (39.1%) reported navigating the tenure track. To gain deeper insight about the teacher educators' institutional factors, the participants were asked whether their universities were land-grant institutions and how they ranked on the Carnegie Classification for Higher Education Institutions. Of the 46 participants, 31 (67.4%) specified they were employed by a land-grant institution, and 15 (32.6%) were not. Regarding their Carnegie Classification, 58.7% ( $f = 27$ ) of the participants indicated they worked at Research 1 Institutions, and 26% ( $f = 12$ ) were employed at doctoral-granting institutions classified as either Research 2 or Research 3.

In the literature (Abes et al., 2002; Hou, 2010; Russell-Stamp, 2015), experience has been noted as a variable that influences university faculty members' SL beliefs. As such, this variable was examined at three different levels: (a) teaching experience, (b) experience as a student at the postsecondary level, and (c) experience as a student at the secondary level. In the current study, more than 50% ( $f = 26$ ) of the teacher educators indicated they had taught using SL as a method of instruction; the other participants had not. On the other hand, 31 participants or more than two-thirds (67.4%) did not experience SL as a student at the postsecondary level; however, almost one-third ( $f = 15$ ) had.

Personal experience was more scant at the secondary level with 76.1% ( $f = 35$ ) of the participants reporting no SL experience at that point in their schooling.

### Instrumentation and Analysis of Data

The web-based instrument used in this study consisted of two major sections: (1) items modified slightly from Hou's (2010) wFSLBI, and (2) items designed to collect the participants' personal, professional, and institutional characteristics. Further, teacher educators submitted course syllabi through Qualtrics™ or by electronic mail, which were assessed by three raters using Gelmon et al. (2001) SLSAG. Hou (2010) created the wFSLBI as a way to more intimately understand faculty members' SL beliefs through the lens of Ajzen's (1991) TPB. Using factor analysis procedures, Hou (2010) confirmed four unique factors: (1) perceived benefits at the classroom level (PROS\_CLS), (2) perceived benefits at the community level (PROS\_COMM), (3) perceived barriers at the institutional level (CONS\_INST), and (4) perceived barriers at the classroom level (CONS\_CLS). Based on Hou's (2010) recommendations, PROS\_CLS and PROS\_COMM were conceptualized as participants' *behavioral beliefs*. Findings related to the other two subscales, CONS\_INST and CONS\_CLS are reported in Roberts et al. (in press). Through instrument validation procedures, Hou (2010) indicated that all four subscales of the wFSLBI yielded satisfactory reliability estimates. In accord, post hoc reliability estimates for this study demonstrated that each of the subscales produced a Cronbach's alpha of .71 or larger and, thus, were considered acceptable (Field, 2013). On the web-based instrument, we presented the wFSLBI using a five-point, Likert-type scale to determine participants' levels of agreement: 1 = *Strongly agree*, 2 = *Agree*, 3 = *Neutral*, 4 = *Disagree*, and 5 = *Strongly disagree* (Hou, 2010).

We also inquired about the educators' personal, professional, and institutional characteristics, as reported above. The variables in this section were primarily categorical and dichotomous. The participants' syllabi were used to examine their *intentions* to implement SL as a method of instruction, and assessed using Gelmon et al. (2001) SLSAG. The SLSAG was developed to evaluate faculty members' intentions to integrate SL into their courses using 10 quality indicators. In this study, we slightly modified the instrument's items to more closely reflect the context of agricultural education. The lead researcher recruited two other raters to assist in scoring syllabi and assigning the educators' *intention* scores (Bornmann, Mutz, & Daniel, 2010). To improve interrater reliability, the lead researcher provided a training session for the raters to explain best practices associated with using the SLSAG. During this session, raters practiced by scoring a randomly selected syllabus as well as discussed and negotiated their discrepancies to enhance reliability. When scoring syllabi, raters followed Gelmon et al. (2001) recommendations by which syllabi were analyzed using the 10 quality indicators of SL. A score was assigned for each indicator, as described by the SLSAG: "1" if present and "0" if not. We used intraclass correlation coefficients [ICCs] (Shrout & Fleiss, 1979) to determine interrater reliability, which resulted in a *satisfactory* ICC of .88.

To analyze the data, we used the Statistical Package for the Social Sciences (SPSS) version 20 for Macintosh computers. It should be noted that because this study used a census approach, no attempt was made to account for nonresponse error that may have resulted from a sampling procedure (Field, 2013). For research objectives one and two, findings are reported using descriptive statistics, including percentages and measures of central tendency, such as means and standard deviations. Regarding research objective three, we conducted bivariate correlational analysis to describe relationships (Gay, Mills, & Airasian, 2012) among teacher educators' behavioral beliefs, intentions, and the study's external variables. Due to the range of variables tested (categorical, dichotomous, and ordinal), point bi-serial and Spearman's rho bivariate correlational analyses were computed. To report the magnitude of the correlation coefficients, Davis' conventions (as cited in Miller, 1994) were used:

$01 \geq r \geq .09 = \text{Negligible}$ ;  $.10 \geq r \geq .29 = \text{Low}$ ;  $.30 \geq r \geq .49 = \text{Moderate}$ ;  $.50 \geq r \geq .69 = \text{Substantial}$ ; and  $.70 \geq r \geq .99 = \text{Very High}$ .

### Findings

Research objective one sought to describe agricultural education teacher educators' *behavioral beliefs* for using SL as a method of instruction. For this study, behavioral beliefs were measured through benefits to the classroom (PROS\_CLS) and benefits to the community (PROS\_COMM) subscales on the wFSLBI. Both were assessed on a Likert-type scale ranging from 1 = *Strongly agree* to 5 = *Strongly disagree* and positively worded. The PROS\_CLS subscale was composed of seven items. For the purpose of interpretation, the real limits of the subscales were 1.00 to 1.49 = *Strongly agree*, 1.50 to 2.49 = *Agree*, 2.50 to 3.49 = *Neutral*, 3.50 to 4.49 = *Disagree*, and 4.50 to 5.00 = *Strongly disagree*. For the PROS\_CLS items, the subscale produced an overall mean score of 2.08 ( $SD = .53$ ) or *agree* that benefits existed to using SL at the classroom level. Table 1 presents the individual items for the PROS\_CLS subscale and response percentages for each corresponding item.

Table 1

*Item Response Percentages for the PROS\_CLS Subscale of the wFSLBI*

Items	1	2	3	4	5
Service-learning enriches classroom discussions and lectures in my courses.	52.2%	43.5%	4.3%	0.0%	0.0%
I enjoy teaching more when the class involves service-learning.	15.2%	50.0%	32.6%	0.0%	2.2%
Service-learning helped me to understand my professional strengths and weaknesses.	23.9%	37.0%	32.6%	6.5%	0.0%
Using service-learning helped me clarify areas of focus for my scholarship.	10.9%	32.6%	32.6%	21.7%	2.2%
Using service-learning in courses has resulted in a change in my teaching style(s).	23.9%	54.3%	21.7%	0.0%	0.0%
Using service-learning is an important component of my professional portfolio.	26.1%	43.5%	28.3%	2.2%	0.0%
I was able to develop a good relationship with the students in my service-learning course(s) because of the community work.	37.0%	43.5%	17.4%	2.2%	0.0%

*Note.* 1 = *Strongly agree*; 2 = *Agree*; 3 = *Neutral*; 4 = *Disagree*; and 5 = *Strongly disagree*

The PROS\_COMM subscale, comprised of six items, was used to assess participants' behavioral beliefs regarding SL's benefits to the community. Overall, participants reported agreement

( $M = 1.74$ ;  $SD = .47$ ) with items on the PROS\_COMM subscale. Table 2 presents the individual items for the PROS\_COMM subscale and response percentages for corresponding items.

Table 2

*Item Response Percentages for the PROS\_COMM Subscales of the wFSLBI*

Item	1	2	3	4	5
The service my students completed was beneficial to the community.	45.7%	41.3%	13.0%	0.0%	0.0%
I value working with community partners to structure and deliver the service-learning experience for students.	30.4%	52.2%	15.2%	2.2%	0.0%
I learned something new about the community from my community partners.	63.0%	28.3%	8.7%	0.0%	0.0%
The community members with whom I partner play an active role in the planning or development of my service-learning course(s).	37.0%	30.4%	30.4%	2.2%	0.0%
The work my students and I performed enhanced my ability to communicate my ideas in the community.	26.1%	52.2%	21.7%	0.0%	0.0%
I can make a difference in the community.	56.5%	39.1%	4.3%	0.0%	0.0%

Note. 1 = Strongly agree; 2 = Agree; 3 = Neutral; 4 = Disagree; and 5 = Strongly disagree

For research objective two, three raters evaluated the participants' course syllabi on 10 quality indicators of SL using Gelmon et al. (2001) SLSAG. The raters assigned "0" if an element was not present in a syllabus and "1" if it was present. Thereafter, raters' item selections were examined through composite means and standard deviations to allow direct comparison of the SLSAG items. The item "time dedicated to outlining the use of service-learning as an instructional method" emerged as the criterion identified most frequently ( $M = 4.00$ ;  $SD = .27$ ) by the raters. However, items "course objectives that are directly related to the teaching and learning of service-learning as an instructional method" and "course objectives that identify teaching the *philosophy* of service-learning as an instructional method" were not identified by the raters for any of the 46 syllabi assessed. To evaluate participants' intention scores, the SLSAG items were summed and averaged across raters. The following quality standards were used to interpret the scores: 0 = *Nonexistent*; 1 to 2 = *Poor*; 3 to 5 = *Fair*; 6 to 7 = *Strong*; 8 to 9 = *Excellent*; 10 = *Outstanding* (Gelmon et al., 2001). As such, one participant's course syllabus received a rating of *fair*, 18 received a *poor* rating, and 27 of the syllabi did not have any SL elements present. Using this procedure, we calculated the composite mean of the agricultural education teacher educators' intentions, which resulted in a score of 0.70 ( $SD = .85$ ). Therefore, the teacher educators' intentions to use SL were largely *nonexistent* (Gelmon et al., 2001), as evinced by their course syllabi.

Regarding the study's third objective, we investigated relationships between participants' beliefs, intentions, and the study's external variables. Two bivariate correlational analyses, i.e., Spearman's rho and point-biserial, were employed to address this research objective. To interpret the strength of relationships, Davis' conventions (as cited in Miller, 1994) were used to interpret the magnitude of associations. The relationships between participants' beliefs and intentions about the use of SL as a method of instruction were analyzed. A substantial and positive association ( $r_s = .553$ ;  $p < .01$ ) existed between PROS\_CLS and PROS\_COMM (see Table 3). However, the relationship between PROS\_CLS and Intentions ( $r_s = -.201$ ) was not statistically significant ( $p > .05$ ). Further, no statistically significant relationships ( $p < .05$ ) existed between PROS\_COMM and the other variables of interest.

Table 3

*Spearman's rho Correlation Matrix for Agricultural Education Teacher Educators' SL Beliefs and Intentions*

Variables	1	2	3
1. PROS_CLS <sup>a</sup>	-		
2. PROS_COMM <sup>a</sup>	.553**	-	
3. Intentions <sup>b</sup>	-.201	-.098	-

*Note.* \*\*Significant correlation coefficient at the 0.01 level. <sup>a</sup>PROS\_CLS and PROS\_COMM were derived from the wFSLBI and presented on a five-point, Likert-type scale: 1 = *Strongly agree* to 5 = *Strongly disagree* (Hou, 2010). <sup>b</sup>Intentions were calculated by averaging three raters' scores of the participants' course syllabi as assessed using 10 quality indicators of SL, i.e., assigning "0" if an element was not present and "1" if it was present.

Relationships among the dependent variables, which measured agricultural education teacher educators' SL beliefs and intentions, as well as their personal, professional, and institutional characteristics were assessed using point-biserial correlational analysis. As a result, several statistically significant relationships were found at  $p < .01$ . For example, Intentions ( $r_{pb} = -.736$ ) yielded a very high and negative relationship with SL teaching experience, as well as moderate and positive relationships with PROS\_CLS ( $r_{pb} = .388$ ) and PROS\_COMM ( $r_{pb} = .319$ ). In addition, PROS\_CLS exhibited moderate and positive associations with experience as a student at the postsecondary ( $r_{pb} = .323$ ) and secondary ( $r_{pb} = .347$ ) levels, indicating that SL experiences as students were positively related to how teacher educators perceived the benefits of SL in their classrooms. Other relationships between the variables were not statistically significant at  $p < .05$  (see Table 4).

Table 4

*Point-biserial Correlations for Dependent Variables Measuring the Agricultural Education Teacher Educators' Beliefs and Perceptions of Barriers Regarding SL as a Method of Instruction and their Personal and Professional Characteristics*

Dependent Variables	Gender	SL <sup>c</sup> Teaching Experience	SL <sup>c</sup> Postsecondary Experience	SL <sup>c</sup> Secondary Experience	Land-grant Institution Employment
PROS_CLS <sup>a</sup>	-.214	.388**	.323**	.347**	.254
PROS_COMM <sup>a</sup>	-.051	.319**	.155	.241	-.293
Intentions <sup>b</sup>	.253	-.736**	-.185	-.282	-.098

*Note.* \*\*Significant correlation coefficient at the 0.01 level. <sup>a</sup>PROS\_CLS and PROS\_COMM were derived from the wFSLBI and presented on a five-point, Likert-type scale: 1 = *Strongly agree* to 5 = *Strongly disagree* (Hou, 2010). <sup>b</sup>Intentions were calculated by averaging three raters' scores of the participants' course syllabi as assessed using 10 quality indicators of SL, i.e., assigning "0" if an element was not present and "1" if it was present. <sup>c</sup>Dichotomous items were coded as "0" if participants did not have experience and "1" if they reported having SL experience.

### Conclusions

The study's purpose was to describe the *behavioral beliefs* and *intentions* (Ajzen, 1991) of agricultural education teacher educators in regard to using SL as a method of instruction. Responding to the first subscale, PROS\_CLS, a participants *agreed* ( $M = 2.08$ ;  $SD = .53$ ) that benefits to the classroom existed (see Table 1). Regarding the PROS\_COMM subscale, the respondents also generally *agreed* ( $M = 1.74$ ;  $SD = .47$ ) that SL could provide benefits to the community. To examine the teacher educators' intentions to use SL as a method of instruction, Gelmon et al. (2001) SLSAG was applied. The composite mean of the teacher educators' intention scores was 0.70 ( $SD = .85$ ), or largely *nonexistent* as based on an analysis of their course syllabi.

Findings also revealed a substantial and positive relationship ( $r_s = .553$ ;  $p < .01$ ) between PROS\_CLS and PROS\_COMM suggesting that participants who perceived SL as benefitting the classroom also viewed it as a way to make contributions in their local communities. Regarding the point-biserial relationships, a very high and negative association ( $r_{pb} = -.736$ ) was found between SL teaching experience and teacher educators' intentions to use the method. Even though teacher educators indicated having personal experience with SL as instructors, their intention to use the method, as identified in course syllabi, was inversely related. Further, SL teaching experience exhibited moderate and positive relationships with PROS\_CLS ( $r_{pb} = .388$ ) and PROS\_COMM ( $r_{pb} = .319$ ). Finally, moderate and positive relationships also existed between SL experience as a student at the postsecondary ( $r_{pb} = .323$ ) and secondary levels ( $r_{pb} = .347$ ) and PROS\_CLS, indicating that participants' SL experiences as students positively influenced how they viewed the benefits of SL to their classrooms.

### Limitations of the Study

Several potential limitations of this study existed. First, the data reported were collected through an online questionnaire and as such were self-reported by the participants. Therefore, threats to validity may exist (Gay et al., 2012). Further, the possibility of coverage error (Dillman et al., 2014) was also a possibility. For example, AAAE's listserv provided this investigation's respondent frame. Before completing the instrument, individuals were asked to self-identify as an agricultural education teacher educator. However, it is possible that educators who matched the parameters of the population did not receive an invitation to participate because they were not subscribed to the listserv. In addition, some participants may have misinterpreted the population parameters and chose to participate, despite not fitting the study's criteria.

### Implications and Recommendations

During the past three decades, SL has been used on various U.S. university campuses to *enhance, fortify, and infuse* didactic experiences by which students apply course-based knowledge to benefit their local communities (Banerjee & Hausafus, 2007; Smith, 2008). As gatekeepers of curricular and pedagogical decisions, faculty members are central to the method's diffusion (McKay & Rozee, 2004). Therefore, understanding faculty members', including teacher educators', beliefs and intentions regarding the use of SL as a method of instruction is critical to developing the support needed to promote its widespread adoption. In this study, agricultural education teacher educators recognized the benefits, i.e., their behavioral beliefs (Ajzen, 1991), SL could provide to *classrooms and communities*. However, despite these beliefs, their intentions and associated planned behaviors (Ajzen, 1991) to use the method were mostly *nonexistent*. Related literature highlights four key strategies for achieving greater faculty buy-in for educational innovations such as SL: (1) clearly communicate the purpose of the innovation; (2) allow faculty to gain experience by trying out the change in a safe, non-judgmental environment; (3) demonstrate that institutional commitment is high; and (4) provide opportunities for faculty to personally observe the advantages of adoption (Boice, 1990; Davidson-Shivers, Salazar, & Hamilton, 2005; Eisen & Barlett, 2006). Therefore, future research should explore how implementing such strategies might help bridge the chasm between teacher educators' beliefs versus their intentions regarding SL as a method of instruction. Investigators should also explore the role that *self-efficacy* may play in mediating the relationship between teacher educators' beliefs and intentions about their use of SL.

The lack of intentions to use SL also indicates the need for more understanding about opinion leaders (Rogers, 2003) in the professional networks of agricultural education teacher educators, i.e., who may influence their decisions most profoundly regarding curricular choices for teaching methods courses intended to prepare SBAE instructors. Such research may reveal aspects of teacher educators' perceptions about subjective norms (Ajzen, 1991) influencing their intentions to use SL. Perhaps this knowledge could help explain the ways in which educators' actual behaviors are presaged by the influence of opinion leaders within the discipline. This lack of intention also illuminates the need for more awareness about the method and its usefulness for preservice and inservice teachers of agricultural education. Because teacher educators' beliefs about SL were generally positive, perhaps future research also should explore the *value* they assign to the method in comparison to other instructional approaches. By understanding better the worth teacher educators assign to SL, a basis could be established to articulate more effectively its utility for achieving *student and community outcomes* as well as improving the *relevance* of the teacher education curriculum. Equipped with this knowledge, the discipline should also consider what may be the implications of stifling SL's use in its pedagogical curriculum regarding the future outcomes and impacts of SBAE programs (Graham et al., 2016).

In addition, this study found that prior experiences, such as SL teaching experiences and personal involvement with the method as students, affected teacher educators' beliefs (Ajzen, 1991) about using SL to instruct preservice students of agricultural education. The view that previous SL experience influences the beliefs of university faculty members is well-situated in existing literature outside of agricultural education (Abes et al., 2002; Hou, 2010; Russell-Stamp, 2015). However, unique to this study, agricultural educators' experiences as students at the secondary and postsecondary levels were examined, which revealed statistically significant relationships with their beliefs. Therefore, these findings expand both the SL and agricultural education literature regarding the influence of students' and teacher educators' prior experiences with SL and their predispositions toward using the method.

Other than illuminating the fracture between teacher educators' SL beliefs and intentions, this investigation also revealed the critical role that prior experience plays in shaping their perspectives on this method of instruction. Therefore, future investigations should explore the types and intensities of experiences that foreground agricultural education teacher educators' use of the method in the preparation of SBAE instructors. By more intimately understanding such experiences, additional work could be done to align their beliefs and intentions.

### Discussion

In the analysis of teacher educators' *behavioral beliefs* (Ajzen, 1991), it was apparent they viewed SL as a benefit to classrooms and communities. Perhaps this optimistic view has created unrealistic perceptions of SL, i.e., regarding *control beliefs* (Ajzen, 1991), by which teacher educators perceive they do not have the resources, support, or time required to facilitate such an in-depth learning approach given the confines of higher education. As such, additional questions warrant further consideration. First, should SL be operationalized as a method of instruction in teacher preparation or rather viewed as an educational philosophy for proffering, measuring, and explaining the long-term goals and impacts of agricultural education? If the latter, how should teacher educators balance SL's valuable attributes against its potential limitations or shortcomings to arrive at an appropriate philosophical stance?

### References

- Abes, E. S., Jackson, G., & Jones, S. R. (2002). Factors that motivate and deter faculty use of service-learning. *Michigan Journal of Community Service Learning, 9*(1), 5-17. Retrieved from <http://hdl.handle.net/2027/spo.3239521.0009.101>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decisions Processes, 50*(1), 179-211. doi:10.1016/0749-5978(91)90020-T
- Ajzen, I. (2002). *Constructing a TpB questionnaire: Conceptual and methodological considerations*. Amherst: University of Massachusetts System. Retrieved from <http://www.people.umass.edu/aizen/pdf/TpB.measurement.pdf>
- Ajzen, I. (2006). *Behavioral interventions based on the theory of planned behavior*. Amherst: University of Massachusetts System. Retrieved from <http://www.people.umass.edu/aizen/pdf/tpb.intervention.pdf>
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Anderson, J. B. (2000). *Learning in deed: Service-learning and preservice teacher education*. Denver, CO: Education Commission of the States.

- Antonio, A. L., Astin, H. S., & Cress, C. M. (2000). Community service in higher education: A look at the nation's faculty. *Review of Higher Education, 23*(4), 373-398. doi:10.1353/rhe.2000.0015
- Astin, A.W., & Sax, L. J. (1998). How undergraduates are affected by service participation. *Journal of College Student Development, 39*(3), 251-263. Retrieved from <http://digitalcommons.unomaha.edu/slcehighered/7>
- Astin, A. W., Sax, L. J, & Avalos, J. (1999). Long-term effects of volunteerism during the undergraduate years. *Review of Higher Education, 22*(2), 187-202. Retrieved from <https://muse.jhu.edu/article/30068/summary>
- Banerjee, M., & Hausafus, C.O. (2007). Faculty use of service-learning: Perceptions, motivations, and impediments for the human sciences. *Michigan Journal of Community Service Learning, 14*(1), 32-45. Retrieved from <http://hdl.handle.net/2027/spo.3239521.0014.103>
- Barth, M., Bent, M., Fischer, D., Richter, S., & Rieckmann, M. (2014). Learning to change universities from within: A service-learning perspective on promoting sustainable consumption in higher education. *Journal of Cleaner Production, 62*(1), 72-81. doi:10.1016/j.jclepro.2013.04.006
- Birkenholz, R. J., & Simonsen, J. C. (2011). Characteristics of distinguished programs of agricultural education. *Journal of Agricultural Education, 52*(3), 16-26. doi:10.5032/jae.2011.03016
- Boice, R. (1990). Faculty resistance to writing-intensive courses. *Teaching of Psychology, 17*(1), 13-17. doi:10.1207/s15328023top1701\_3
- Bornmann, L., Mutz, R., & Daniel, H. D. (2010). A reliability-generalization study of journal peer reviews: A multilevel meta-analysis of inter-rater reliability and its determinants. *PLoS ONE, 5*(12), 1-10. doi:10.1371/journal.pone.0014331
- Bringle, R. G., & Hatcher, J. A. (1996). Implementing service learning in higher education. *Journal of Higher Education, 67*(2), 221-239. doi:10.2307/294398
- Bulot, J. J., & Johnson, C. J. (2006). Rewards and costs of faculty involvement in service-learning. *Educational Gerontology, 32*(8), 633-645. doi:10.1080/03601270500494121
- Butin, D. W. (2006). The limits of service-learning in higher education. *The Review of Higher Education, 29*(4), 473-498. doi:10.1353/rhe.2006.0025
- Butin, D. W. (2010). *Service-learning in theory and practice: The future of community engagement in higher education*. New York, NY: Palgrave
- Colbeck, C. L., & Wharton-Michael, P. (2006). Individual and organizational influences on faculty members' engagement in public scholarship. *New Directions for Teaching and Learning, 2006*(105), 17-26. doi:10.1002/tl.220
- Conway, J. M., Amel, E. L., & Gerwien, D. P. (2009). Teaching and learning in the social context: A meta-analysis of service learning's effects on academic, personal, social, and citizenship outcomes. *Teaching of Psychology, 36*(4), 233-245. doi:10.1080/009862 80903172969

- Cooper, J. R. (2014). Ten years in the trenches: Faculty perspectives on sustaining service-learning. *Journal of Experiential Education*, 37(4), 415-428. doi:10.1177/1053825913513721
- Crews, R. J. (2002). *Higher education service-learning: Sourcebook*. Westport, CT: Oryx Press.
- Davidson-Shivers, G. V., Salazar, J., & Hamilton, K. M. (2005). Design of faculty development workshops: Attempting to practice what we preach. *College Student Journal*, 39(3), 528-539. Retrieved from <https://eric.ed.gov/?id=EJ725588>
- DeLeeuw, A., Valois, P., Ajzen, I., & Schmidt, P. (2015). Using the theory of planned behavior to identify key beliefs underlying pro-environmental behavior in high-school students: Implications for educational interventions. *Journal of Environmental Psychology*, 42, 128-138. Retrieved from <https://doi.org/10.1016/j.jenvp.2015.03.005>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). Hoboken, NJ: John Wiley & Sons.
- Eisen, A., & Barlett, P. (2006). The Piedmont project: Fostering faculty development toward sustainability. *The Journal of Environmental Education*, 38(1), 25-35. doi:10.3200/JOEE.38.1.25-36
- Eyler, J. (2002). Reflection: Linking service and learning: Linking students and communities. *Journal of Social Issues*, 58(3), 517-534. doi:10.1111/1540-4560.00274
- Eyler, J., & Giles, D. E. (1999). *Where's the learning in service-learning?* San Francisco, CA: Jossey-Bass.
- Eyler, J., Giles, D. E., Stenson, C. M., & Gray, C. J. (2001). *At a glance: What we know about the effects of service-learning on college students, faculty, institutions, and communities, 1993-2000* (3rd ed.). Nashville, TN: Vanderbilt University.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Thousand Oaks, CA: Sage.
- Furco, A., & Moely, B. E. (2012). Using learning communities to build faculty support for pedagogical innovation: A multi-campus study. *Journal of Higher Education*, 83(1), 128-153. doi:10.1353/jhe.2012.0006
- Gay, L. R., Mills, G. E., & Airasian, P. W. (2012). *Educational research: Competencies for analysis and applications* (10th ed.). Boston, MA: Pearson.
- Gelmon, S. B., Holland, B. A., Driscoll, A., Spring, A., & Kerrigan, S. (2001). *Assessing service learning and civic engagement: Principles and techniques*. Providence, RI: Campus Compact.
- Giles, D. E., Jr., & Eyler, J. (1994). The theoretical roots of service-learning in John Dewey: Toward a theory of service-learning. *Michigan Journal of Community Service Learning*, 1(1), 77-85. Retrieved from <http://hdl.handle.net/2027/spo.3239521.0001.109>

- Graham, D. L., Arnold, S., & Jayaratne, K. S. U. (2016). Research priority 6: Vibrant, resilient communities. In T. G. Roberts, A. Harder, & M. T. Brashears (Eds.), *American Association for Agricultural Education national research agenda: 2016-2020* (pp. 49-56). Gainesville: Department of Agricultural Education and Communication, University of Florida.
- Hinck, S. S., & Brandell, M. E. (2000). The relationship between institutional support and campus acceptance of academic service learning. *American Behavioral Scientist*, 43(5), 868-881. doi:10.1177/00027640021955522
- Hou, S. I. (2010). Developing a faculty inventory measuring perceived service-learning benefits and barriers. *Michigan Journal of Community Service Learning*, 16(2), 78-89. Retrieved from <http://hdl.handle.net/2027/spo.3239521.0016.206>
- Hou, S. I., & Wilder, S. (2015). How ready is higher education faculty for engaged student learning? Applying transtheoretical model to measure service-learning beliefs and adoption. *SAGE Online Journal*, 5(1), 1-9. doi:10.1177/2158244015572282
- Kantrovich, A. J. (2010). *The 36th volume of a national study of the supply and demand for teachers of agricultural education 2006-2009*. West Olive, MI: American Association for Agricultural Education. Retrieved from <http://aaaeonline.org/Resources/Documents/2010%20Supply%20and%20Demand%20study%20report%20v5.pdf>
- Kellogg Commission on the Future of State and Land-Grant Universities. (1999). *Returning to our roots: The engaged institution*. Washington, DC: National Association of State Universities and Land Grant Colleges. Retrieved from <https://eric.ed.gov/?id=ED426676>
- Kezar, A. (2013). Departmental cultures and non-tenure track faculty: Willingness, capacity, and opportunity to perform service-learning at four-year institutions. *Journal of Higher Education*, 84(2), 153-183. doi:10.1353/jhe.2013.001
- Kumar, R., Karabenick, S. A., & Burgoon, J. N. (2015). Teachers' implicit attitudes, explicit beliefs, and the mediating role of respect and cultural responsibility on mastery and performance-focused instructional practices. *Journal of Educational Psychology*, 107(2), 533-545. Retrieved from <http://psycnet.apa.org/doi/10.1037/a0037471>
- McKay, V. C., & Rozee, P. D. (2004). Characteristics of faculty who adopt community service learning pedagogy. *Michigan Journal of Community Service Learning*, 10(2), 21-33. Retrieved from <http://hdl.handle.net/2027/spo.3239521.0010.202>
- Meaney, K., Griffin, K., & Bohler, H. (2009). Service-learning: A venue for enhancing pre-service educators' knowledge base for teaching. *International Journal for the Scholarship of Teaching and Learning*, 3(2), 1-17. doi:10.20429/ijstl.2009.030221
- Miller, L. E. (1994). Correlations: Description or inference? *Journal of Agricultural Education*, 35(1), 5-7. doi:10.5032/jae.1994.01005
- Pribbenow, D. A. (2005). The impact of service-learning pedagogy on faculty teaching and learning. *Michigan Journal of Community Service Learning*, 11(2). Retrieved from <http://hdl.handle.net/2027/spo.3239521.0011.20>

- Roberts, R. (2017). *Agricultural teacher educators' beliefs and intentions regarding service-learning as a method of instruction: A mixed methods study* (Doctoral dissertation). Retrieved from [https://www.researchgate.net/publication/336881120\\_The\\_Beliefs\\_and\\_Intentions\\_of\\_Agricultural\\_Education\\_Teacher\\_Educators\\_Regarding\\_Service-Learning\\_as\\_a\\_method\\_of\\_instruction\\_A\\_Mixed\\_Methods\\_Study](https://www.researchgate.net/publication/336881120_The_Beliefs_and_Intentions_of_Agricultural_Education_Teacher_Educators_Regarding_Service-Learning_as_a_method_of_instruction_A_Mixed_Methods_Study)
- Roberts, R., & Edwards, M. C. (2015). Service-learning's ongoing journey as a method of instruction: Implications for school-based, agricultural education. *Journal of Agricultural Education*, 56(2), 217-233. doi:10.5032/jae.2015.02217
- Roberts, R., & Edwards, M. C. (2018). Imaging service-learning in *The Agricultural Education Magazine* from 1929-2009: Implications for the method's reframing and use. *Journal of Agricultural Education*, 59(3), 15-35. Retrieved from <https://doi.org/10.5032/jae.2018.03015>
- Roberts, R., Edwards, M. C. & Robinson, J. S. (in press). Deterrents to service-learning's use as a method of instruction in the preparation of agricultural education teachers: The beliefs and intentions of teacher educators. *Journal of Agricultural Education*.
- Roberts, R., Terry, R., Jr., Brown, N. R., & Ramsey, J. W. (2016). Students' motivations, value, and decision to participate in service-learning at the National FFA Days of Service. *Journal of Agricultural Education*, 57(2), 187-202. doi:10.5032/jae.2016.02187
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: The Free Press.
- Russell-Stamp, M. (2015). Faculty use of community-based learning: What factors really matter? *Michigan Journal of Community Service Learning*, 21(2), 37-48. Retrieved from <http://hdl.handle.net/2027/spo.3239521.0021.203>
- Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86(2), 420-428. doi:10.1037/0033-2909.86.2.420
- Smith, C. P. (2008). *Perceptions, motivations, and concerns of post-secondary faculty regarding implementing service-learning pedagogy into curriculum* (Doctoral dissertation). Available from ProQuest. (UMI No. 3444942)
- Speck, B. W., & Hoppe, S. L. (2004). *Service learning: History, theory, and issues*. Westport, CT: Praeger Press.
- Sutter, N., & Paulson, S. (2017). Predicting college students' intention to graduate: A test of the theory of planned behavior. *College Student Journal*, 50(3), 409-421. Retrieved from <https://www.ingentaconnect.com/contentone/prin/csj/2017/00000050/00000003/art00013>
- Vogel, A. L., Seifer, S. D., & Gelmon, S. B. (2010). What influences the long-term sustainability of service learning? Lessons from early adopters. *Michigan Journal of Community Service Learning*, 17(1), 59-76. Retrieved from <http://hdl.handle.net/2027/spo.3239521.0017.105>
- Wade, A., & Demb, A. (2009). A conceptual model to explore faculty community engagement. *Michigan Journal of Community Service Learning*, 15(2), 5-16. Retrieved from <http://hdl.handle.net/2027/spo.3239521.0015.201>