Journal of Agricultural Education, 60(4), 164-180
https://doi.org/10.5032/jae.2019.04164

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

Richie Roberts[1], M. Craig Edwards[2], and J. Shane Robinson[3]

Abstract

Service-learning (SL) appears to have influenced school-based, agricultural education (SBAE) since its early inception. And current trends suggest the method may be gaining increased interest in the discipline. However, little is known about the role that agricultural education teacher educators' beliefs and intentions play in deterring SL's use as a method of instruction in the preparation of agricultural education teachers. This study's purpose, therefore, was to understand teacher educators' normative and control beliefs as well as their intentions regarding SL as a method of instruction. Participants reported that barriers existed at the classroom level, which influenced their intentions. SL teaching experience was also found to have a negative and statistically significant ($p < .01$) relationship with agricultural education teacher educators' beliefs about the challenges they associated with using the method. It is recommended that future research explore diffusion methods that could stimulate more widespread adoption of SL by teacher educators of agricultural education.

***Keywords*:** inservice professional development; pedagogy: service-learning; teacher preparation

Introduction

Our world is growing and evolving in complex ways. These changes have necessitated reconsidering how we conceptualize the nature of knowledge, knowing, teaching, and learning (Brownlee, Schraw, & Berthelsen, 2011). As a consequence, scholars (Barnes, 2016; Butcher et al., 2003) have called for teacher preparation programs to prepare graduates to work in *more diverse*, *challenging*, and *resource-poor settings*. In response, teacher education programs have begun to place increasing emphasis on introducing preservice teachers to instructional methods intended to facilitate higher-order thinking skills, collaborative learning, as well as the ability to address ambiguous and complex social problems (Yang, Chang, & Hsu, 2008). Because service-learning (SL) as a method of instruction is positioned to assist in achieving such outcomes, it has received growing attention in universities, including teacher education programs (Ball & Geleta, 2012; Barnes, 2016; Butcher et al., 2003; Chambers & Lavery, 2012; Hart & King, 2007; Swick, 1999, 2001). SL has been operationally defined as an educational approach by which students learn through providing service in their

[1] 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

[2] 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

[3] 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

communities while connecting curricular concepts to real-world issues with embedded opportunities for reflection (Bringle & Hatcher, 1995).

In agricultural education, SL appears to have influenced the discipline since its inception (Roberts & Edwards, 2015, 2018). And current trends suggest the method may be gaining increased interest among teachers and other stakeholders of school-based, agricultural education (SBAE). For instance, recent initiatives promoted by the National Council for Agricultural Education (NCAE), such as the Agricultural SL Supervised Agricultural Experience and National FFA Days of Service initiative, may demonstrate a pivot occurring in the discipline with this method of instruction becoming increasingly used and celebrated (NCAE, 2018; Roberts, Terry, Brown, & Ramsey, 2016). To this point, Roberts and Edwards (2015) called for agricultural education teacher educators to begin to emphasize SL as a method of instruction in SBAE. However, doing such remains entangled in a web of social, cultural, and historical forces that complicate the method's acceptance and future possibilities as a substantial and respected instructional tool for SBAE (Roberts & Edwards, 2018). For example, although the aims of SL appear noble in *form* and *function*, Ward (1998) noted that gaining faculty members', including teacher educators', commitments to embrace *engagement* in their local communities remains a critical barrier, especially in regard to implementing SL as a method of instruction. As a result, much of the SL research focuses on the particular factors that either motivated or deterred faculty members from using the method.

The literature demonstrates that perspectives and orientations of academic institutions can negatively influence faculty members' adoption of SL (Moore & Ward, 2010). For example, the type of institution – *teaching* or *research* – can affect decisions to incorporate the method when designing courses (Aldersley, 1995; Pollack, 1999). At institutions emphasizing *research*, expectations for high scholarly productivity along with prioritizing traditional scientific discovery often discourages community engagement (Moore & Ward). In comparison, faculty members working at institutions stressing *teaching* often have more freedom to engage in instructional methods allowing them to facilitate students' learning experiences in their surrounding communities (Aldersley). Faculty members at higher education institutions also possess distinctive professional characteristics – including educational backgrounds, training, appointments, and rank – that have been shown to shape their beliefs and intentions regarding SL as a method of instruction (Abes, Jackson, & Jones, 2002; Banerjee & Hausafus, 2007; Colbeck & Wharton-Michael, 2006; Ward, 2003). Moreover, Abes et al. (2002) reported that faculty members at research-focused institutions frequently found it difficult to balance their professional roles with using time-consuming instructional methods. And because service may be the least rewarded aspect of the tenure process, many faculty members viewed SL as a *distraction* (Jaeger & Thornton, 2006; Russell-Stamp, 2015; Ward).

Other characteristics also stand to inhibit faculty members' intentions regarding SL. To this point, Kezar (2013) identified faculty members' skepticism about the method's effectiveness, an absence of related resources and support, insufficient time, and late hiring as barriers to their intentions to implement SL. Therefore, more intimately understanding how teacher educators' beliefs shape their decisions to use SL in a variety of contexts is a crucial need. Although the existing SL literature provides some insight about deterrents to SL's use in higher education, scant evidence exists regarding the *beliefs* and *intentions* that most profoundly influence how SL is conceptualized and practiced by teacher educators who prepare agricultural education teachers. This deficit in the discipline's knowledge base motivated the study presented here.

Theoretical Lens

In this investigation, we chose to study *human behavior* through the prism of the theory of planned behavior (TPB). TPB, as articulated by its chief architect, Icek Ajzen (1991), posits that an

individual's engagement in a behavior precipitates from underlying *beliefs* and *intentions* toward such action. In the TPB, individuals' views are guided by three underlying belief systems: (a) behavioral (attitudes), (b) normative (subjective or social norms), and (c) control (perceived behavior controls). *Behavioral beliefs* are views that an individual may hold about the consequences, positive or negative, of exercising a behavior. As such, behavioral beliefs have been shown to greatly influence the development of attitudes about related endeavors (Ajzen, 2006). *Normative beliefs* refer to the social pressures an individual perceives regarding a behavior (Ajzen, 2002). The final belief construct, *control beliefs*, is linked to the amount of difficulty perceived to be associated with executing a behavior. Another antecedent of actualized behaviors are individuals' intentions; however, by altering their intentions, behaviors also can be modified (Ajzen, 2006).

Smith (2008) found faculty members' SL beliefs were related to their perceived abilities to navigate the challenges of implementing the method. Studies have also demonstrated statistically significant relationships between *normative* and *control beliefs* and faculty members' SL *intentions*, especially regarding the method's perceived deterrents (Abes et al., 2002; Bagnardi, 2006). In this investigation, behavioral beliefs were operationalized as agricultural education teacher educators' perceived beliefs about SL's benefits to communities and secondary school classrooms. Normative beliefs were interpreted as the barriers study participants may have perceived at the institutional level. Meanwhile, we analyzed participants' control beliefs as their perceived *barriers at the university classroom level*. Beliefs (behavioral, normative, and control) were analyzed using Hou's (2010) Web-based Faculty Service-Learning Beliefs Inventory (wFSLBI). Intentions were measured by analyzing teacher educators' course syllabi. It should be noted other researchers (Abes et al.; Banerjee & Hausafus, 2007; Frolow, 2010; Hou, 2010) have asserted that several key *external variables* may also influence the behaviors of university faculty regarding SL. Therefore, the influence of the most consistently reported extraneous variables were explored in this study. The external variables included participants' (a) experience, (b) gender, (c) age, (d) education, (e) tenure/rank, and (f) institution type. Application of TPB in the study is displayed in Figure 1.

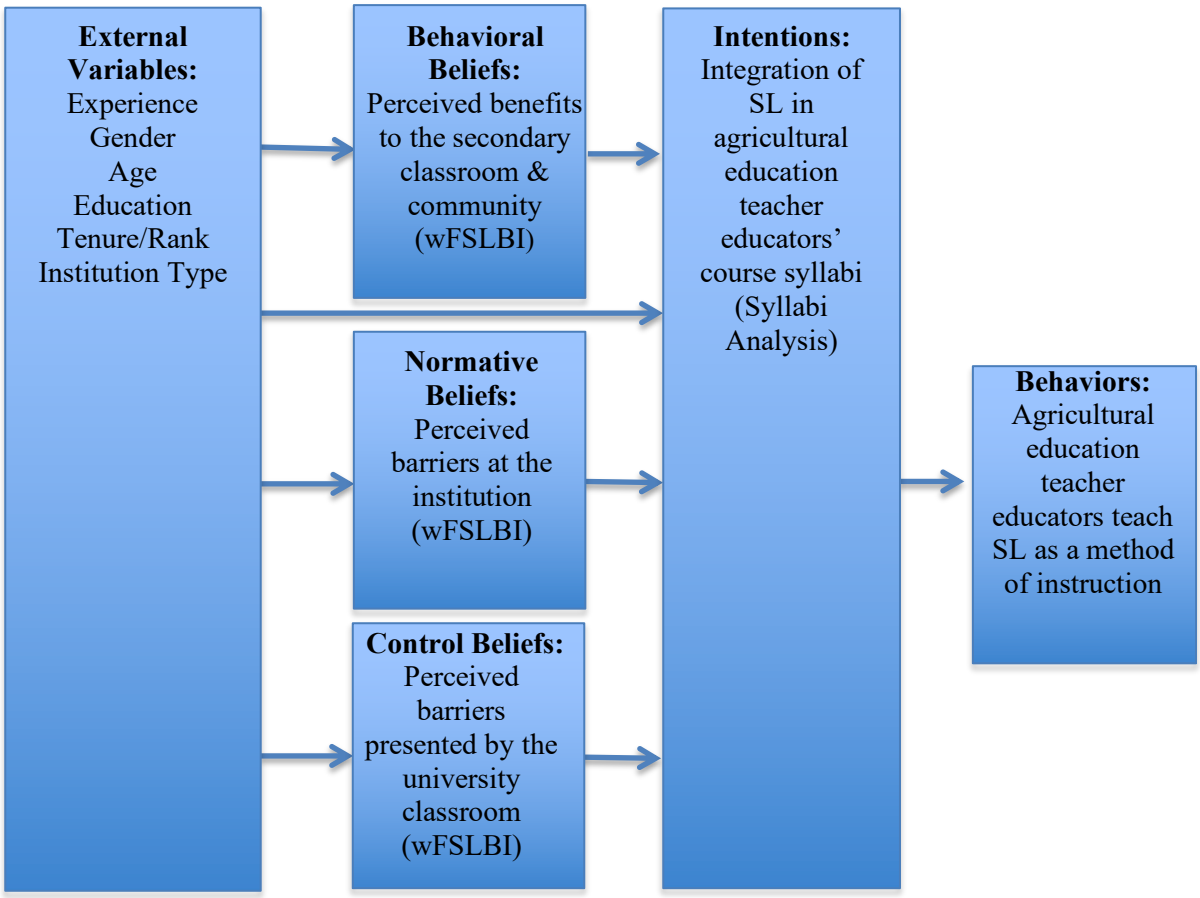

Figure 1. Application of the theory of planned behavior (Ajzen, 1991), as contextualized to agricultural education teacher education.

Purpose and Objectives

The study's purpose was to understand agricultural education teacher educators' *normative* and *control* beliefs as well as their *intentions* regarding SL as a method of instruction. Data reported were derived from a larger investigation; participants' *behavioral beliefs* were also examined but are not portrayed here. Because emphasis was placed on understanding factors that deter SL's use in the preparation of agricultural education teachers, this study addresses the American Association for Agricultural Education's Research Priority Area 6: *Vibrant, Resilient Communities*. This priority calls for investigations into educational methods that can be used to help communities build the capacity needed to "deal with community problems without relying on external resources" (Graham, Arnold, & Jayaratne, 2016, p. 51). To fulfill the study's purpose, three objectives guided the investigation: 1. Describe the *normative* and *control beliefs* of agricultural education teacher educators regarding SL; 2. Describe the *intentions* of agricultural education teacher educators regarding SL; and 3. Describe the relationships that existed among agricultural education teacher educators' *normative* and *control beliefs, intentions,* and selected *external variables* regarding SL.

Methods and Procedures

In this study, data were collected through the Qualtrics™ online survey system and in accord with Dillman's, Smyth's, and Christian's (2014) tailored design method's procedures. To begin the data collection process, a pre-notice message was sent as an electronic mail message to the AAAE

listserv inviting members to participate in the study. This message included a brief description of the study. Three days later, we distributed an electronic mail message invitation to AAAE members. The invitation message included three components: (a) description of the study, (b) questions regarding participants' characteristics, and (c) a link to the instrument. After two weeks, a follow up notice was sent to potential respondents as an electronic mail message. The second reminder notice was sent 10 days later. The final notice was sent one week thereafter. After participants completed the online survey instrument, they were asked to upload a course syllabus for one of their teaching methods courses to a Qualtrics™ digital dropbox or to send the document to the lead researcher as an electronic mail attachment. The 46 participants who completed the survey instrument and submitted their course syllabi qualified for one of the study's incentives, two $50 gift cards.

Description of the Study's Population and Recruitment Procedures

The population for this study was a census of agricultural education teacher educators who were active members of AAAE and taught at least one teaching methods course to preservice agricultural education students in the past three years or would during the spring academic term of 2017. The respondent frame for this study was derived from AAAE's listserv and corroborated by the organization's membership directory and membership secretary (AAAE, 2016). Participants were required to self-identify as agricultural education teacher educators before responding; however, it is possible that individuals who matched the population parameters did not receive an invitation to participate, especially if they were not members of AAAE at the time of the study. Therefore, those individuals would not have had the opportunity to provide responses; thus, coverage error may have occurred (Dillman, et al., 2014). As a result of the study's recruitment procedures, 77 individuals responded. However, 31 did not meet the study's a priori requirements: (a) completion of the instrument, (b) submission of a course syllabus from a teaching methods course, and (c) providing contact information for follow up procedures. As such, it was determined that 46 individuals (59%) provided usable responses for analysis.

The a priori respondents included 33 males and 13 females. Forty-five (97.8%) teacher educators reported they were White and one respondent (2.2%) self-identified as African American. Despite exhibiting similarity regarding gender with 71.7% (f = 33) identifying as male and 97.7% (f = 45) identifying as white, participants were more diverse in age: 17 (36.9%) were 31 to 40 years of age and 13 (28.3%) were 41 to 50 years of age. The study included participants from 26 states. More participants were from Texas (f = 7; 15.2%) than other states; however, Kentucky, North Carolina, Oklahoma, and Tennessee each had three (6.5%) representatives. More than 97% (f = 45) of the participants held doctoral degrees. In addition, 22 (47.8%) held the rank of assistant professor, and 20 (43.5%) were either associate professors or professors. Twenty-two (47.8%) participants had earned tenure, 18 (39.1%) were on a tenure track, and five (10.9%) not. To understand better the educators' institutional characteristics, they were asked to provide information concerning their universities' land-grant institution and Carnegie Classifications for Higher Education statuses. In response, 67.4% (f = 31) indicated they were employed at a land-grant institution and 32.6% (f = 15) not. And more than 58% (f =27) worked at a Research 1 Institution. The agricultural education teacher educators were also asked to reveal their SL experiences. Twenty-six (56.5%) participants indicated they had teaching experiences involving SL. However, two-thirds (67.4%) did not experience SL as students during their postsecondary education and 76.1% had not at the secondary level.

Instrumentation

The study's web-based instrument consisted of items slightly modified from Hou's (2010) wFSLBI and questions about the educators' personal and professional characteristics. Participants also submitted course syllabi on Qualtrics™ or by electronic mail that were evaluated by three independent

raters using a slightly modified version of the *Service-Learning Syllabus Analysis Guide* [SLSAG] (Gelmon, Holland, Driscoll, Spring, & Kerrigan, 2001). The wFSLBI was designed to understand faculty members' SL beliefs and is theoretically grounded in Ajzen's (1991) TPB. Hou's (2010) instrument contains four distinct subscales: (1) perceived benefits at the classroom level (PROS_CLS) with seven items, (2) perceived benefits at the community level (PROS_COMM) with seven items, (3) perceived barriers at the institutional level (CONS_INST) with three items, and (4) perceived barriers at the classroom level (CONS_CLS) with four items. In this manuscript, however, only findings from CONS_INST and CONS_CLS are reported.

The wFSLBI was presented on a five-point, Likert-type scale using five anchors to measure agreement: *1 = Strongly agree*, *2 = Agree*, *3 = Neutral*, *4 = Disagree*, and *5 = Strongly disagree* (Hou, 2010). During the instrument validation phase, Hou (2010) administered the wFSLBI to 449 tenured and tenure-track faculty members at a U.S. research university. Because of the importance of SL teaching experience, Hou (2010) conducted validation measures on each of the four subscales regarding this variable. As a result, Hou (2010) reported the instrument demonstrated satisfactory reliability estimates on all items with Cronbach's alphas ranging from .65 to .85 for participants with SL teaching experience and from .74 to .91 for those individuals without. Post hoc reliability estimates in the current study were .71 or larger and considered acceptable (Field, 2013).

The second instrument employed in this investigation was the SLSAG (Gelmon et al., 2001), which was used to analyze the agricultural education teacher educators' *intentions* in regard to using SL as a method of instruction. Gelmon et al. (2001) designed the SLSAG to assess whether faculty members had intentions to incorporate quality indicators of SL into their courses. For the purpose of this investigation, we slightly modified the SLSAG to more appropriately fit the agricultural education teacher education context. To improve the reliability of this analysis, two external raters and the lead researcher scored participants' syllabi (Bornmann, Mutz, & Daniel, 2010). Before the rating process began, a training session for the raters was conducted regarding proper use of the SLSAG to score the syllabi. Thereafter, each rater scored a randomly selected syllabus to identify scoring differences so recommendations could be provided to improve consistency among the raters. Raters individually assigned a "1" to items on the instrument if the syllabus contained the SL element and a "0" if it did not. Interrater reliability of the SLSAG was assessed using intraclass correlation coefficients (ICCs), i.e., the most widely accepted measure for interrater reliability (Shrout & Fliess, 1979). In this study, interrater reliability analysis yielded an ICC of .88, which was considered satisfactory (Whitehurst, 1984).

In addition to the wFSLBI and SLSAG, we also obtained the participants' personal and professional characteristics. These items were mostly dichotomous or categorical; for example, we inquired about participants' SL teaching experiences, experiences with SL at the postsecondary and secondary levels, ages, genders, home states, tenure statuses, institution types, whether their institutions were land-grant universities, and the ranking of their universities on the Carnegie Classification of Higher Education Institution's scale.

Data Analysis

To address objectives one and two, descriptive statistics were performed to report measures of central tendency, including frequencies, means, and standard deviations (Gay, Mills, & Airasian, 2012). For objective three, bivariate correlational analysis was conducted to describe relationships between participants' beliefs and intentions in regard to using SL as a method of instruction based on Gay et al. (2012) recommendations. Depending on the variables tested – dichotomous, categorical, or ordinal – bivariate correlational analyses were computed, including point bi-serial correlational coefficient and Spearman's rho. Davis' conventions (as cited in Miller, 1994) were used to describe the magnitudes of

the correlation coefficients: 01 ≥ *r* ≥ .09 = *Negligible*; .10 ≥ *r* ≥ .29 = *Low*; .30 ≥ *r* ≥ .49 = *Moderate*; .50 ≥ *r* ≥ .69 = *Substantial*; and .70 ≥ *r* ≥ .99 = *Very High.*

Findings

Objective One

To operationalize normative and control beliefs, Hou's (2010) wFSLBI was employed. The instrument used a Likert-type scale with anchors ranging from 1 = *Strongly agree* to 5 = *Strongly disagree.* As such, the real limits 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*. Responding to the CONS_INST items, the subscale score yielded a *neutral perspective* (*M* = 2.92; *SD* = .953) regarding participants' beliefs about institutional barriers to using SL as a method of instruction. Item response percentages for the CONS_INST subscale, as used to measure participants' normative beliefs (Ajzen, 1991), are provided in Table 1.

Table 1

Teacher Educators' Item Response Percentages for the CONS_INST Subscale of the wFSLBI

Items	1	2	3	4	5
Faculty promotion and tenure policies do not support or encourage my use of service-learning as a method of instruction.	10.9	28.3	26.1	21.7	13.0
Administrative leaders actively work to make service-learning a visible and important part of institutional work.	15.2	26.1	28.3	23.9	6.5
My colleagues understand and value service-learning in promotion, tenure, and annual evaluation decisions.	10.9	23.9	28.3	30.4	6.5

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

For the CONS_CLS subscale, participants indicated they *agreed* (*M* = 2.28; *SD* = .682) that barriers existed at the classroom level in regard to integrating SL as a method of instruction. Table 2 provides item response percentages for the CONS_CLS subscale, which was used to measure agricultural education teacher educators' control beliefs (Ajzen, 1991).

Table 2

Teacher Educators' Item Response Percentages for the CONS_CLS Subscale of the wFSLBI

Items	1	2	3	4	5
Time constraints interfere with my ability to teach a service-learning course.	19.6	47.8	30.4	2.2	0.0

Table 2

Teacher Educators' Item Response Percentages for the CONS_CLS Subscale of the wFSLBI Continued…

I feel that I am giving up control of the learning experience when teaching a service-learning course.	19.6	60.9	13.0	4.3	2.2
I have a harder time assessing student learning and work in a service-learning course than in a traditional course.	21.7	30.4	34.8	10.9	2.2
I experience challenges with the reduced time for classroom instruction in my service-learning course.	17.4	43.5	19.6	17.4	2.2

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

Objective Two

The second objective sought to assess participants' intentions in regard to using SL as a method of instruction. To accomplish this, Gelmon et al. (2001) SLSAG was used. The distribution of raters' composite item selections were expressed through means and standard deviations. When scoring syllabi, raters assigned a score of "0" if a syllabus did not contain a particular SL element and "1" was assigned if the element was present (Gelmon et al., 2001). Next, to calculate the distribution of raters' item selections for the SLSAG, item frequencies were summed across raters and averaged by the total number of raters. Thereafter, item frequency was reported through composite means and standard deviations to allow direct comparison of SLSAG items based on raters' selection frequencies. "Time dedicated to outlining the *use* of service-learning as an instructional method" emerged as the most frequently identified item ($M = 4.00$; $SD = .266$) in the agricultural education teacher educators' syllabi, as determined by the raters. The raters also identified "time dedicated to outlining partner-building techniques that might be employed when using service-learning as an instructional method" ($M = 3.00$; $SD = .206$) and "time dedicated to describing the *philosophy* of service-learning as an instructional method" ($M = 2.67$; $SD = .225$) more frequently than other items. Two of the 10 scoring criteria – "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 found in any of 46 course syllabi (see Table 3).

Table 3

Composite Means and Standard Deviations of Raters' Frequencies for the SLSAG Items: Agricultural Education Teacher Educators' Course Syllabi

Service-Learning Course Elements	Composite Mean	*SD*
Time dedicated to outlining the *use* of service-learning as an instructional method.	4.00	.266

Table 3

Composite Means and Standard Deviations of Raters' Frequencies for the SLSAG Items: Agricultural Education Teacher Educators' Course Syllabi Continued…

Time dedicated to outlining partner-building techniques that might be employed when using service-learning as an instructional method.	3.00	.206
Time dedicated to describing the *philosophy* of service-learning as an instructional method.	2.67	.225
Course objectives that directly relate to teaching the *use* of service-learning as an instructional method.	2.33	.201
Time dedicated to outlining techniques that might be used to *evaluate student learning* when using service-learning as an instructional method.	2.00	.150
Time dedicated to outlining *reflection techniques* that might be used to complement service-learning as an instructional method.	1.00	.083
The course description identifies service-learning as a topic to be addressed.	1.00	.108
Targeted readings/guest speakers/out-of-class assignments designed to augment learning regarding service-learning as an instructional method.	0.33	.049
Course objectives that are directly related to the teaching and learning of service-learning as an instructional method.	0.00	0.00
Course objectives that identify teaching the *philosophy* of service-learning as an instructional method.	0.00	0.00

Note. When scoring syllabi, raters assigned a score of "0" if a syllabus did not contain a particular SL element and "1" was assigned if the element was present (Gelmon et al., 2001); so, a possible overall score ranged from "0" to "10." Thereafter, intention scores were calculated using Gelmon et al. (2001) SLSAG by which the distribution of raters' composite item scores were expressed through means and standard deviations. To calculate an average score, item scores were summed across raters and divided by the total number of raters.

To evaluate participants' intentions regarding their use of SL as a method of instruction, items on the *SLSAG* were summed and averaged across raters. Thereafter, individual mean scores were assessed using the following standards: *0 = Nonexistent*; *1* to *2 = Poor*; *3* to *5 = Fair*; *6* to *7 = Strong*; *7* to *9 = Excellent*; and *10 = Outstanding*. In total, one participant received a rating of *fair*, 18 *poor*, and 27 did not have any SL elements incorporated into their course syllabi, as specified by the SLSAG and expressed by averaging the three raters' scores. As such, the participants' overall mean intentions score was 0.70 (*SD* = .846) suggesting that agricultural education teacher educators' intentions to integrate SL into their methods courses were mostly *nonexistent*.

Objective Three

The study's third objective sought to examine the relationships between participants' beliefs, intentions, and selected external variables. As such, this section is organized by the appropriate bivariate correlational analysis (Field, 2013) used to describe the associations: (a) Spearman's rho and (b) point-biserial. Each relationship was interpreted using conventions outlined by Davis (as cited in Miller, 1994) to describe magnitudes of association. Relationships were examined regarding agricultural education teacher educators' beliefs and intentions about SL as a method of instruction. A moderate and positive relationship ($r_s = .376$; $p < .01$) was found between CONS_CLS and Intentions, suggesting that participants' future behaviors were influenced by their views of existing barriers to using SL at the classroom level. No other statistically significant relationships ($p < .05$) were revealed among the variables examined (see Table 4).

Table 4

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

Variables	1	2	3
1. CONS_CLS[a]	-		
2. CONS_INST[a]	.164	-	
3. Intentions[b]	.376**	.236	-

Note. **Significant correlation coefficient at the 0.01 level. [a]CONS_CLS and CONS_INST from the wFSLBI were presented on a five-point, Likert-type scale using five anchors to measure agreement: *1 = Strongly agree*, *2 = Agree*, *3 = Neutral*, *4 = Disagree*, and *5 = Strongly disagree* (Hou, 2010). [b]When scoring syllabi, raters assigned a score of "0" if a syllabus did not contain a particular SL element and "1" was assigned if the element was present (Gelmon et al., 2001); so, a possible overall score ranged from "0" to "10." Thereafter, intention scores were calculated using Gelmon et al. (2001) SLSAG by which the distribution of raters' composite item scores were expressed through means and standard deviations. To calculate an average score, item scores were summed across raters and divided by the total number of raters.

Point-biserial correlational analysis between dependent variables measuring the agricultural education teacher educators' beliefs and perceptions of barriers regarding the use of SL as a method of instruction and their selected personal and professional characteristics revealed two statistically significant relationships at $p < .01$. In particular, SL teaching experience demonstrated a very high and negative relationship with Intentions ($r_{pb} = -.736$), and a moderate and negative relationship with CONS_CLS ($r_{pb} = -.483$). These findings suggest that as teacher educators of agricultural education gain more SL teaching experience they perceive the barriers associated with using the method as less significant, and their intentions to use it increase. The other relationships tested between the variables were not statistically significant at $p < .05$ (see Table 5).

Table 5

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 selected Personal and Professional Characteristics

Dependent Variables	Gender	SL[c] Teaching Experience	SL[c] Postsecondary Experience	SL[c] Secondary Experience	Land-grant[d] Institution Employment
CONS_CLS[a]	.136	-.483**	-.243	.093	.254
CONS_INS[a]	-.051	-.286	-.044	.097	-.118
Intentions[b]	.253	-.736**	-.185	-.282	-.098

Note. **Significant correlation at the 0.01 level. [a]CONS_CLS and CONS_INST, as derived from the wFSLBI, were presented on a five-point, Likert-type scale using five anchors to measure agreement: *1 = Strongly agree*, *2 = Agree*, *3 = Neutral*, *4 = Disagree*, and *5 = Strongly disagree* (Hou, 2010). [b]When scoring syllabi, raters assigned a score of "0" if a syllabus did not contain a particular SL element and "1" was assigned if the element was present (Gelmon et al., 2001); so, a possible overall score ranged from "0" to "10." Thereafter, intention scores were calculated using Gelmon et al. (2001) SLSAG by which the distribution of raters' composite item scores were expressed through means and standard deviations. To calculate an average score, item scores were summed across raters and divided by the total number of raters. [c]Items were dichotomous and coded as "0" if participants did not have experience or "1" if they reported having SL experience. [d]Item was dichotomous; therefore, it was coded "0" if participants were employed at a non land-grant institution or "1" if they indicated employment at a land-grant institution.

Conclusions and Implications

We aimed to understand agricultural education teacher educators' *normative* and *control* beliefs as well as their *intentions* regarding SL as a method of instruction. The study's results indicated that participants held a *neutral perspective* about existing barriers to SL at the institutional level, i.e., their *normative beliefs* (Ajzen, 1991). However, they generally *agreed* that control beliefs (Ajzen, 1991), or barriers to the classroom, served as a deterrent to SL's use in the preparation of agricultural education teachers. These findings are consistent with the existing SL literature in regard to faculty members' beliefs (Banerjee & Hausafus, 2007; Jaeger & Thornton, 2006; Ward, 2003). However, such findings have not been reported previously in agricultural education.

Through the analysis of participants' course syllabi, it was determined that the intentions of agricultural education teacher educators regarding the use of SL as a method of instruction were mostly *nonexistent*. This finding is not present in the existing agricultural education literature, however, if considering the issue more broadly, other research indicates several critical reasons why university faculty members resist pedagogical innovations such as SL. For example, Koslowski (2006) argued faculty rejected educational innovations because they did not understand the related aims and purposes, perceived their academic freedom was being abridged, or held the position that they were too overwhelmed with other responsibilities to adopt a new practice.

A moderate and positive relationship was found between participants' conceptions of existing classroom challenges associated with SL and their intentions to implement the method. In a path analysis study, Bagnardi (2006) noted that control beliefs (challenges) exhibited a strong path to the

intentions of faculty members regarding their use of SL as a method of instruction. Therefore, this study's related finding is consistent with Bagnardi's (2006) results and adds a new dimension to agricultural education's literature base. A very high and negative relationship was also found in regard to agricultural education teacher educators' prior SL teaching experiences and their intentions to use SL to instruct preservice students of agricultural education – a view not currently reflected in the literature. Prior SL teaching experience also yielded a moderate and negative relationship with participants' beliefs that barriers to implementing SL existed at the classroom level. The view that previous SL experience influences the beliefs of university faculty members is well-situated in existing literature (Abes et al., 2002; Hou, 2010; Russell-Stamp, 2015). However, this finding provides new insight regarding the role that SL teaching experience may play in shaping how agricultural education teacher educators view challenges perceived as inherent to using the method.

Recommendations

Findings from this study provide important opportunities for future research and practice. For example, we recommend future research explore the diffusion methods and techniques (Rogers, 2003) which may help stimulate more widespread adoption of SL for teaching methods courses in agricultural education given the finding that participants perceived their control beliefs (Ajzen, 1991) influenced the decisions to use SL. Results from this study also call attention to the need for more understanding regarding which opinion leaders (Rogers, 2003) in the professional networks of agricultural education teacher educators most profoundly influence their decisions about curricular choices for teaching methods courses intended to prepare SBAE instructors. Perhaps a better understanding of these influentials and their sway could provide implications for addressing educators' beliefs and intentions (Ajzen, 1991) about the best methods to use when preparing teachers of SBAE.

Because of the importance of SL teaching experience, professional development models should be explored to determine which would best prepare agricultural education teacher educators to use SL as a method of instruction with their preservice students. Due to the lack of intentions to integrate SL as a method of instruction, as evinced by the participants' course syllabi, more research is also needed to understand how agricultural education teacher educators prioritize and select the various teaching methods used in their teacher preparation programs. Further, more understanding is needed about why the use of SL appeared to be a planned behavior (Ajzen, 1991), but it was excluded from being allocated instructional time, as expressed by the teacher educators' intentions.

Discussion

Across academic disciplines, university faculty members have been called to turn their attention to community-based learning and renewal efforts to create mutual respect while also balancing relations of power (Hoy & Johnson, 2013). As community revitalization efforts and SL continue to intersect, Butin (2006) theorized these linkages could create a new movement in higher education institutions by which *communities* and *schools* become transformed in positive and generative ways. However, Roncolato (2013) argued the integration of SL and community renewal efforts do not usually occur in bounded contexts. Instead, advocates often emerge individually to create a formidable base to diffuse the concept more broadly (Jacoby, 2009). For example, it was the early proponents of SL who developed programming, drafted policies, created awards, and provided additional support to encourage its institutionalization (Stanton et al., 1999). These efforts, however, remain somewhat formative and are still taking shape in teacher education programs (Chambers & Lavery, 2012). Nevertheless, proponents of the method in teacher education (Barnes, 2016; Hildenbrand & Schultz, 2015; Tatebe, 2013) have called for SL to be a central focus, i.e., a critical *planned behavior* (Ajzen, 1991), regarding teacher preparation and credentialing.

At some teacher credentialing institutions, this call has been answered by implementing expectations for growth in preservice students' *leadership* and *service* as core components of their professional development and to better align such with standards established by the Council for the Accreditation of Educator Preparation (2017). As a working example, Oklahoma State University's teacher educators include a *service orientation* and *community outreach* expectation in their professional education units by which preservice students must demonstrate a commitment to service before entering the classroom (Oklahoma State University, 2017). The students must also provide evidence of service experiences as well as articulate the ways they intend to weave service-based endeavors into their future careers as educators (Oklahoma State University).

In addition, this study provided insights into beliefs and intentions that deter SL's use in teacher preparation programs of agricultural education. And it suggests implications for exploring how the *silencing of SL in teacher preparation* may limit students' learning experiences as well as the welfare of their communities. Perhaps these trends in teacher education present opportunities for *opening new possibilities* by which to implement SL in teacher education, i.e., using the method to facilitate service-based outcomes while also integrating related curricular aims. This implication appears to be especially important if considering Roberts' and Edwards' (2015) proposition that instructors could use the method in each component of SBAE's comprehensive, three-circle model to enhance students' learning experiences. Although Roberts and Edwards (2015) illuminated new possibilities for the method in the context of agricultural education, at least two questions remain: *How could we best prepare preservice students to integrate the major components of SBAE's three-circle model by using SL as a method of instruction?* and *Is this an appropriate aim worthy of garnering the attention of teacher educators, teachers, and other stakeholders in agricultural education?* As such, more contemplation by and action from researchers and practitioners of agricultural education are needed regarding the use of SL as a method of instruction to fulfill the broad aims of SBAE.

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

Aldersley, S. F. (1995). Upward drift is alive and well: Research/doctoral model still attractive to institutions. *Change*, *27*(5), 50-56. doi:10.1080/00091383.1995.9936448

American Association for Agricultural Education (AAAE). (2016). *Membership information*. Author. Retrieved from http://www.aaaeonline.org/join

Bagnardi, M. (2006). *Faculty intention to use service learning as pedagogy in higher education*

(Doctoral dissertation). Available from ProQuest Dissertations and Theses Database. (UMI No. 3217559)

Ball, D., & Geleta, N. (2012). A delicate balance: Service-learning in teacher education. *Journal of the Scholarship of Teaching and Learning*, *5*(1), 1-17. Retrieved from http://files.eric.ed.gov/fulltext/EJ910337.pdf

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

Barnes, M. E. (2016). The student as teacher educator in service-learning. *Journal of Experiential Education*, *39*(4), 238-253. doi:10.1177/1053825916643831

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. (1995). A service-learning curriculum for faculty. *Michigan Journal of Community Service Learning*, *2*(1), 112-122. Retrieved from http://hdl.handle.net/2027/spo.3239521.0002.111

Brownlee. J., Schraw, G., & Berthelsen, D. (2011). *Personal epistemology and teacher education*. New York, NY: Routledge.

Butcher, J., Howard, P., Labone, E., Bailey, M., Groundwater, S., McFadden, . . . & Martinez, K. (2003). Teacher education, community service learning, and student efficacy for community engagement. *Asia-Pacific Journal of Teacher Education*, *31*(1), 109-124. doi:10.1080/13598660301612

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

Chambers, D. J., & Lavery, S. (2012). Service-learning: A valuable component of pre-service teacher education. *Australian Journal of Teacher Education*, *37*(4), 99-108. Retrieved from http://search.informit.com.au/documentSummary;dn=767781396834335;res=IELAPA

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

Council for the Accreditation of Educator Preparation. (2017). *Accreditation and program review*. Washington, DC: Author. Retrieved from http://www.caepnet.org/accreditation/about-accreditation/what-is-accreditation

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.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Thousand Oaks, CA: Sage.

Frolow, M. (2010). *Determinants of a professor's decision to include service-learning in an academic course* (Unpublished doctoral dissertation). Seton Hall University, South Orange, NJ. Retrieved from http://scholarship.shu.edu/cgi/viewcontent.cgi?article=1366&context=dissertations

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.

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.

Hart, S. M., & King, J. R. (2007). Service learning and literacy tutoring: Academic impact on pre-service teachers. *Teaching and Teacher Education*, *23*(4), 323-338. doi:10.1016/j.tate.2006.12.004

Hildenbrand, S. M., & Schultz, S. M. (2015). Implementing service learning in pre-service teacher coursework. *Journal of Experiential Education*, *38*(3), 262-279. doi:10.1177/1053825915571748

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

Hoy, A., & Johnson, M. (2013). *Deepening community engagement in higher education: Forging new pathways.* New York, NY: Palgrave MacMillan.

Jacoby, B. (2009). *Civic engagement in higher education: Concepts and practices.* San Francisco, CA: Jossey-Bass.

Jaeger, A. J., & Thornton, C. H. (2006). Neither honor nor compensation: Faculty and public service. *Educational Policy*, *20*(2), 345-366. doi:10.1177/0895904805284050

Kezar, A. (2013). Departmental cultures and non-tenure track faculty: Willingness, capacity, and opportunity to perform at four-year institutions. *Journal of Higher Education*, *84*(2), 153-183. doi:10.1353/jhe.2013.0011

Koslowski, F. (2006). *Overcoming faculty resistance to assessment*. Raleigh: North Carolina State University Press. Retrieved from www.ncsu.edu/assessment/symposium/presentations/A.10_Koslowski.pdf

Miller, L. E. (1994). Correlations: Description or inference? *Journal of Agricultural Education*, *35*(1), 5-7. doi:10.5032/jae.1994.01005

Moore, T. L., & Ward, K. (2010). Institutionalizing faculty engagement through research, teaching,

and service at research universities. *Michigan Journal of Community Service Learning*, *17*(1), 44-58. Retrieved from http://hdl.handle.net/2027/spo.3239521.0017.104

National Council for Agricultural Education (NCAE). (2018). *Supervised agricultural experience (SAE) philosophy and guiding principles.* Lexington, KY: Author. Retrieved from https://www.ffa.org/thecouncil/sae

Oklahoma State University. (2017). Oklahoma State University LEADS core values. Stillwater: Author. Retrieved from https://education.okstate.edu/peu/leads

Pollack, S. (1999). Early connections between service and education. In T. K Stanton, D. E. Giles, & N. I. Cruz (Eds.) *Service-learning: A movement's pioneers reflect on its origins, practice, and future* (pp. 12-32). San Francisco, CA: Jossey-Bass Publishers.

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 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., 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.

Roncolato, D. (2013). Building deep partnerships and community-centered centers. In A. Hoy & M. Johnson (Eds.), *Deepening community engagement in higher education* (pp. 83-94). New York, NY: Palgrave-Macmillan US.

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., & Fliess, 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)

Stanton, T. K., Giles, D. E., & Cruz, N. I. (1999). *Service-learning: A movement's pioneers reflect on its origins, practice, and future*. San Francisco, CA: Jossey-Bass.

Swick, K. J. (1999). Service learning helps future teachers strengthen caring perspectives. *The Clearing House*, *73*(1), 29-32. doi:10.1080/00098659909599635

Swick, K. J. (2001). Service-learning in teacher education: Building learning communities. *The Clearing House*, *74*(5), 261-264. doi:10.1080/00098650109599204

Tatebe, J. (2013). Bridging gaps: Service learning in teacher education. *Pastoral Care in Education*, *31*(3), 240-250. doi:10.1080/02643944.2013.774044

Ward, K. (1998). Addressing academic culture: Service learning, organizations and faculty work. In R. Rhoads & J. Howard (Eds.), *Academic service learning: A pedagogy of action and reflection* (pp. 73-80). San Francisco, CA: Jossey-Bass.

Ward, K. (2003). Faculty service roles and the scholarship of engagement. *Higher Education Report*, *29*(5), 1-8. Retrieved from http://files.eric.ed.gov/fulltext/ED476222.pdf

Whitehurst, G. J. (1984). Interrater agreement for journal manuscript reviews. *American Psychologist*, *39*(1), 22-28. doi:10.1037/0003-066X.39.1.22

Yang, F. Y., Chang, C. Y., & Hsu, Y. S. (2008). Teacher views about constructivist instruction and personal epistemology: A national study in Taiwan. *Educational Studies*, *34*(5), 527-542. doi:10.1080/03055690802288486