Developing a Faculty Inventory Measuring Perceived Service-Learning Benefits and Barriers

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The purpose of this study was to develop a Web-based Faculty Service-Learning Beliefs Inventory (wFSLBI) assessing faculty members' views of the benefits and barriers involved with service-learning (SL) pedagogy. Analyses of the responses of 362 faculty members showed that Inventory items loaded consistently on four sub-scales: Perceived benefits at classroom (PROS_CLS) and community levels (PROS_COM), and perceived barriers at classroom (CONS_CLS) and institutional levels (CONS_INST). The wFSLBI showed satisfactory reliability and validity among faculty groups with and without SL experience. The wFSLBI will be useful in assessing and understanding salient beliefs motivating or discouraging faculty involvement in SL.

Despite the extensive research regarding student involvement with service-learning (SL), there is limited research in the area of faculty participation with this pedagogical approach. Studies have shown student benefits through reciprocal community-campus partnerships that offer an innovative pedagogical approach to engage student learning, strengthen openness to diversity, and encourage civic responsibility (Bringle, Hatcher, & Games, 1997; Butin, 2006). To encourage faculty service-learning involvement, it is necessary to have a better understanding and assessment of the benefits and barriers perceived by faculty.

Currently, there is limited information about faculty involvement and use of the service-learning approach. One of the principal sources of information is the Faculty Survey of Student Engagement (FSSE, 2007). This survey is a project coordinated by the National Survey of Student Engagement (NSSE) at Indiana University and is designed to assess faculty member's expectations of student engagement in those educational practices empirically associated with high degrees of student learning and advancement (NSSE, 2009). Although the FSSE includes questions about service activities, internships, and community involvement, it does not explicitly examine faculty perceptions toward the integration of service-learning into their teaching.

While limited research exists about faculty perceptions of SL, existing studies have pointed to some general motivating factors. Abes, Jackson, and Jones (2002) examined factors motivating and deterring faculty use of service-learning among 500 faculty members from 29 higher education institutions affiliated with Ohio Campus Compact. They identified five factors most strongly motivating the use of ser-

vice-learning, including increased student understanding of course material, increased student personal development, increased student understanding of social problems as systemic, provision of useful service in the community, and creation of university-community partnerships. Another study surveyed project directors of 66 institutions of higher education participating in the Association for Gerontology in Higher Education / Generations Together grants, and discovered similar perceived benefits (Bulot & Johnson, 2006). Salient motivating factors were the greater relevance of course material with the service-learning approach as well as the enhanced connections among faculty, community, and students. In addition, increased awareness of community issues, opportunities to develop closer working relationships with communities, improved student learning outcomes, and more meaningful engagement and commitment to teaching have been identified as faculty-perceived benefits of such pedagogy (Bulot & Johnson; Hammond, 1994; Pribbenow, 2005).

Research has been limited regarding barriers faculty encounter when integrating service-learning into instruction. Some common challenges reported include time constraints leading to difficulty balancing professional responsibilities and coordination of the service component, challenges of adjusting for different levels of student readiness, and challenges in assessing student work (Abes et al., 2002; Hammond, 1994). Other barriers include logistical challenges, insufficient relationships with community partners, or inadequate knowledge of ways to use the SL approach effectively (Bulot & Johnson, 2006; Driscoll, 2000; Hammond). Finally, the lack of institutional recognition of service-learning as scholarship has been recognized as an important issue that

needs to be further examined (Hammond; Morton & Troppe, 1996).

Although existing studies have pointed to some general factors encouraging or discouraging faculty SL participation, currently there is no systematically developed measurement tool available to examine factors influencing faculty SL participation. While some belief or perception scales are being used (Community-Campus Partnerships for Health (CCPH), 2001; Corporation for National and Community Service (CNCS) Faculty Fellows Survey, 2007; Loyola University Office of Service Learning Faculty Post-Survey, 2004; Shinnamon, Gelmon, & Holland, 1999), the psychometrics of these scales are often not available. In addition, no systematically developed instrument is currently available to assess service-learning perceptions among faculty who vary in service-learning experience. To better develop resources and to encourage faculty participation in service-learning pedagogy, it is essential to understand benefits and barriers that faculty members across different service-learning involvement statuses perceive. Through such efforts, we can identify key beliefs that can encourage, motivate, and sustain faculty involvement in service-learning.

The purpose of this study was to develop and validate a Web-based Faculty Service-Learning Belief Inventory to assess faculty perceived benefits and barriers toward service-learning adoption. The overall guiding theoretical framework for survey development was the Transtheoretical Model (TTM; Prochaska, Redding, & Evers, 2002). TTM is a model of intentional change which focuses on the individual decision-making process. Individuals weigh pros and cons before adopting a new behavior. According to the TTM, behavior change is gradual and viewed as a process rather than an all-or-none event. Items for the wFSLBI were developed and organized utilizing key constructs on perceived benefits and barriers from the TTM's decision balance scale, which are important factors influencing stages of behavioral adoption. The innovation and key contribution of this study was the development in the wFSLBI of corresponding measurement items to be used with faculty who have taught service-learning courses and those who have not had experience with service-learning. The wFSLBI could then be used to assess and compare faculty groups varying in SL involvement.

Method

Research Participants

A representative sample of 1200 faculty members from each college/school at a major research university in the Southeastern U.S. was invited to partici-

pate in the study. Faculty members who have instructional responsibility or who had taught a course in the previous academic year were eligible to participate. An administrative memo was first sent out in spring 2008 to deans, directors, and chairs informing them of the upcoming survey, followed by an invitation email sent directly to faculty members. Participants were informed that they were selected to provide the university with a better understanding of current SL practice among faculty and identify perceived challenges and barriers for future faculty development and support. Participation was voluntary and confidential. The invitation also noted that even if they might have no experience with service-learning, their responses would still be valuable for planning faculty development opportunities. As our appreciation for their time, participants were given the option of entering a drawing of SL publications or teaching resources. Participants had a three-and-a-half-week window to respond to the online survey. The first email reminder was sent out a week after the invitation email, and the second email reminder was sent out a week before the survey was due. Participants needed to click through the consent page before taking the survey. The survey took about 12-15 minutes to complete. All phases of the research were conducted with the approval of the Institutional Review Board for the Protection of Human Subjects at the principal investigator's university.

A total of 449 faculty members participated in the study, a response rate of 37.4%. Excluding 87 faculty members who indicated that they didn't know what service-learning is, the current analysis included 362 participants (102 with service-learning experience and 260 without). Faculty with SL experience referred to those who had taught at least one course with an SL component or were teaching SL for the first time at the time of the survey ($n = 102$). Faculty without SL experience referred to those who were aware of SL pedagogy but had not yet taught a course with an SL component at the time of the survey. This group included faculty who were either interested or not interested in using SL, as well as those exploring ways to incorporate SL into their teaching but had not yet taught such courses ($n = 260$). The proportions of faculty from each college/school participating in the survey were representative of the overall institutional sample and of faculty with instruction responsibilities at the institution. Table 1 describes demographic and background information of those who completed the survey including the SL faculty, non-SL faculty, and unaware faculty groups. As shown there, members of the service-learning faculty group were more likely to be females; less likely to be younger than 40 years; more likely to be at associate professor rank; less likely to come from art

Table 1
Demographic and Background Information for Participants

	Current Analyses Sample		Excluded	All
	Experienced	**Non-Experienced**	**Unaware**	**All**
Overall	*N*=102	*N*=260	*N*=87	449
Gender				
Women	56 (54.9%)	92 (35.4%)	28 (32.2%)	176 (39.2%)
Age				
<40 years	17 (16.3%)	73 (28.1%)	24 (27.5%)	114 (25.4%)
40~50 yr	37 (36.3%)	58 (22.3%)	22 (25.3)	117 (26.1%)
50~60 yrs	37 (36.3%)	98 (37.7%)	30 (34.5%)	165 (36.7%)
>60 years	11 (10.8%)	31 (11.9%)	11 (12.6%)	53 (11.8%)
Tenure Status				
Tenured/Tenure track	77 (75.5%)	217 (83.5%)	62 (71.3%)	356 (79.3%)
Non tenure track	25 (24.5%)	43 (16.5%)	25 (28.7%)	93 (20.7%)
Rank				
Assistant	18 (17.6%)	64 (24.6%)	23 (26.4%)	105 (23.4%)
Associate	42 (41.2%)	81 (31.2%)	20 (23.0%)	143 (31.8%)
Full	29 (28.4%)	90 (34.6%)	31 (35.6%)	150 (33.4%)
Other	13 (12.7%)	25 (9.6%)	13 (14.9%)	51 (11.4%)
College				
Art / Science	15 (14.7%)	95 (36.5%)	43 (49.4%)	153 (34.1%)
Ag / Environ (Forest / Eco)	14 (13.7%)	32 (12.3%)	8 (9.2%)	54 (12.0%)
Pharmacy / Vet	7 (6.9%)	31 (11.9%)	22 (25.3%)	60 (13.3%)
Education	28 (27.5%)	35 (13.5%)	8 (9.2%)	71 (15.8%)
Law / Business	7 (6.9%)	19 (7.3%)	4 (4.6%)	30 (6.7%)
Social Science related	31 (30.4%)	48 (18.5%)	2 (2.3%)	81 (18.4%)

and science college, pharmacy, or veterinary schools; and more likely to be faculty from education or social science related colleges. Faculty of the arts and sciences, as well as pharmacy/veterinary schools, were more likely to be unaware of service-learning pedagogy. Overall, respondents from the current study were similar to those participated in the FSSE studies conducted among faculty at higher education institutions: both the current and FSSE samples consisted of higher proportions of males, full-time faculty members, and faculty in the arts and humanities (FSSE, 2007).

Measurement

The research instrument was an online survey developed through a review of existing assessment tools on service-learning (CCPH, 2001; CNCS Faculty Survey, 2007; Loyola University OSL Faculty Post-Survey, 2004; Shinnamon et al., 1999), adapting and modifying items relevant to perceptions related to benefits or barriers toward SL pedagogy, and developing new items including creating corresponding items to assess perceptions among faculty with or without prior service-learning experience. Based upon lessons learned from existing literature, we grouped common motivat-

ing and barrier factors into four areas that could be relevant for assessment regardless of prior SL experience among faculty. Two corresponding levels of perceived benefits were developed: Perceived benefits of SL at classroom (PROS_CLS: 7 items) and community (PROS_COM: 6 items) levels. Similarly, two levels of perceived barriers to SL were developed: Perceived barriers at classroom (CONS_CLS: 5 items) and institutional (CONS_INST: 3 items) levels. The sub-scales included institutional barriers rather than benefits, reflecting existing evidence that participants tend to view institutional level factors as barriers (Hammond, 1994; Morton & Troppe, 1996). The wFSLBI did not query barriers at the community level, as the majority of faculty without prior service-learning experience likely would have had a hard time responding to statements concerning such barriers.

The definition of service-learning that the university adopted was provided for all faculty for reporting their service-learning involvement statuses. The survey stated: "For the purpose of this survey, service-learning (SL) is defined as '*an experiential education method which integrates academic instruction, meaningful community service, and reflection to enhance the learning experience.*'" Analyses of

wFSLBI items excluded faculty who indicated they were not aware of what service-learning was, as service-learning perception statements would not be applicable to this group.

All of the scale items used 5-point Likert scales to assign meaningful values to an underlying continuum of ratings (Meyers, Gamst, & Guarino, 2006). Response options ranged from 1 (strongly disagree) to 5 (strongly agree). Values were later recoded to maintain consistency with the hypotheses, with higher scores indicating more positive views for the PROS items, and higher scores representing more negative responses for the CONS items. Detailed item descriptions can be found in Table 2.

The wording of each item was chosen accordingly for the experienced vs. no experienced group to measure the same concept or perception among faculty in various stages of SL involvement. For example, the statement, "The service my students completed was beneficial to the community" written for experienced service-learning faculty, was reworded as "I believe the service my students will complete will be beneficial to the community," to measure comparable perceptions of faculty without prior SL experience.

Feedback for an initial version of the measure was sought from three key stakeholder groups: (1) the Office of Service Leadership (OSL) leadership team, including higher administrators for instruction and public service outreach and the Office for Institutional Research; (2) the SL Curriculum Committee – a campus-wide committee consisting of 18 faculty members across disciplines interested in SL; and (3) SL Interest Group – a campus-wide network consisting of faculty, staff, and community partners who meet monthly discussing issues related to SL. Suggestions were incorporated into a revision, and the resulting survey instrument was pilot tested with a small sample of faculty members before it was finalized and converted into the online format. The final survey consisted of 5 main sections: Demographics, current SL practice, perceived benefits of SL, perceived barriers of SL, and directions for planning future SL training opportunities. Data from the last section were open-ended responses concerning faculty interests and needs for future SL training opportunities and are not included in the analyses presented here.

Data Analysis

Before data were analyzed, some items were reverse-coded to reflect positive expressions in their corresponding scales (see Table 2). Descriptive statistics, item-total correlation, and Cronbach's *alpha* coefficients were calculated for each scale to evaluate internal consistencies among faculty with and without prior SL experience.

Confirmatory factor analysis was then applied to examine the proposed four-factor model among each group (faculty with or without SL experience). The purpose of this process was to determine whether or not there was sufficient empirical evidence that the model, as specified, was a viable representation of the true relationships between observed and latent variables (Mueller, 1996). Judgments about model fit were made jointly by assessing the ratio of chi-square to degrees of freedom (X^2/df), root mean square error of approximate (RMSEA), incremental fit index (IFI), and comparative fit index (CFI). The criteria used to determine if the model fits the data were the X^2/df less than three (Bollen, 1989), RMSEA no more than .08 (Raykov, 2001), and values of IFI, and CFI at least .90 (Byrne, 1998). Factor loadings were considered statistically significant if the ratio of the factor loading to its standard error was greater than 1.96 or less than -1.96 (Joreskog & Sorbom, 1996). The structure of factor loadings is provided in Figure 1.

Finally, item-discrimination analysis was conducted to examine whether the scores of the inventory discriminated faculty with favorable beliefs toward SL from faculty with less favorable beliefs (Hou, 2009). This analysis was also done separately for faculty with or without SL experience. Each sample was divided into two groups based on the scores on each scale. Faculty members scoring in the top one-third of each scale were compared with those scoring in the bottom one-third of that scale. Independent *t* test was used to compare item means between these two groups for each scale.

Results

Reliabilities

Table 2 provides psychometric information for the wFSLBI items. The analysis of the reliability coefficients from the online survey showed that Cronbach *alphas* ranged from .65 to .85 among faculty with prior SL experience (*n* = 102), and ranged from .74 to .91 among faculty without SL experience (*n* = 260). The corrected item-total correlations (CITC) of the wFSLBI items in the respective four sub-scales were all greater than .20, ranging from .34 to .73 for the SL experienced faculty and from .29 to .81 for the no SL experience faculty, indicating sufficient item corrections among both faculty groups. The correlation matrix among items is available upon request. Statistics for both faculty groups are provided, with statistics for the group without SL experience highlighted in italic. Item descriptions in Table 2 represented statements used for faculty with prior SL experience.

Validity Evidence: Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) then was done to test the wFSLBI four-factor model: perceived ben-

Table 2
Psychometric Information for the wFSLBI

Scale[c]	Item description With prior SL experience[a] No prior SL experience (*Italic*)[b]	Mean (SD)	CITC	Alpha if item deleted
PROS-CLS	PROS-Classroom level (with experience) (*Cronbach Alpha* [7-item] = .85; *n*=102) *PROS-Classroom level (no experience) (Cronbach Alpha [7-item] = .90; n=260)*			
PROS-CLS_1	Service-learning enriches classroom discussions and lectures in my course.	4.50 (.70) *3.45 (1.06)*	.48 *.72*	.85 *.88*
PROS-CLS_2	I enjoy teaching more when the class involves service-learning.	4.12 (.87) *3.29 (.92)*	.57 *.74*	.84 *.88*
PROS-CLS_3	Service-learning helped me to understand my professional strengths and weakness.	3.66 (.97) *3.01 (.99)*	.73 *.71*	.82 *.88*
PROS-CLS_4	Participating in service-learning helped me clarify areas of focus for my scholarship.	3.41 (1.02) *2.79 (1.06)*	.70 *.71*	.82 *.88*
PROS-CLS_5	Teaching service-learning courses has resulted in a change in my teaching style(s).	3.65 (.99) *3.50 (.94)*	.61 *.54*	.83 *.90*
PROS-CLS_6	Participation in service-learning is an important component of my professional portfolio.	3.79 (1.07) *2.08 (1.06)*	.69 *.76*	.82 *.87*
PROS-CLS_7	I was able to develop a good relationship with the students in my service-learning course(s) because of the community work.	4.06 (.83) *3.50 (.90)*	.50 *.73*	.85 *.88*
PROS-COM	PROS-Community level (with experience) (*Cronbach Alpha* [6-item] =.79; *n*=102) *PROS-Community level (no experience) (Cronbach Alpha [6-item] =.91 ; n=260)*			
PROS-COM_1	The service my students completed was beneficial to the community.	4.47 (.61) *3.85 (.83)*	.46 *.74*	.78 *.90*
PROS-COM_2	I value working with community partners to structure and deliver the service-learning experience for students.	4.45 (.71) *3.62 (.95)*	.60 *.81*	.74 *.89*
PROS-COM_3	I learned something new about the community from my community partners.	4.33 (.69) *3.92 (.78)*	.64 *.79*	.74 *.89*
PROS-COM_4	The community members with whom I partner play an active role in the planning or development of my service-learning course(s).	3.65 (.97) *3.42 (.94)*	.38 *.65*	.82 *.91*
PROS-COM_5	The work my students and I performed enhanced my ability to communicate my ideas in the community.	3.87 (.82) *3.58 (.88)*	.66 *.76*	.73 *.90*
PROS-COM_6	I can make a difference in the community	4.41 (.60) *3.61 (.82)*	.61 *.79*	.75 *.89*

CONS-CLS

CONS-Classroom level (with experience) *(Cronbach Alpha [4-item] = .65; n=102)*
CONS-Classroom level (no experience) (Cronbach Alpha [4-item] = .74; n=260)

		Mean (SD)		
CONS-CLS_1	Time constraints interfere with my ability to teach a service-learning course.	3.60 (1.14)	.50	.58
		3.90 (.90)	*.48*	*.68*
CONS-CLS_2	I feel that I am giving up control of the learning experience when teaching a service-learning course.	2.00 (.96)	.39	.63
		2.69 (.89)	*.46*	*.68*
CONS-CLS_3	I have a harder time assessing student learning and work in a service-learning course than in a traditional course.	2.72 (1.15)	.34	.66
		3.22 (1.03)	*.57*	*.64*
CONS-CLS_4	I experience challenges with the reduced time for classroom instruction in my service-learning course.	2.70 (1.02)	.55	.57
		3.57 (.97)	*.61*	*.62*
CONS-CLS_5	Using service-learning required more of my time as a teacher.[e]	4.01 (1.01)	.36	.65
		3.87 (.89)	*.29*	*.74*

CONS-INST

CONS-Institution level (with experience) *(Cronbach Alpha [3-item] = .66; n=102)*
CONS-Institution level (no experience) (Cronbach Alpha [3-item] = .72; n=260)

		Mean (SD)		
CONS-INST_1	Faculty promotion and tenure policies do not support or encourage my service-learning.[d]	3.74 (1.13)	.44	.62
		3.55 (1.07)	*.52*	*.66*
CONS-INST_2	Administrative leaders actively work to make service-learning a visible and important part of institutional work.[d]	3.23 (1.00)	.39	.67
		3.11 (.94)	*.46*	*.72*
CONS-INST_3	My colleagues understand and value service-learning in promotion, tenure, and annual evaluation decisions.[d]	3.57 (1.08)	.61	.37
		3.43 (1.04)	*.65*	*.48*

Notes:

[a] Faculty with SL experience referred to those who have taught at least one course with SL component or were teaching it for the first time at the time of the survey. The sample size of this group was 102.

[b] Faculty without SL experience referred to those who were aware of the SL pedagogy but had not yet taught a course with SL at the time of the survey. The sample size of this group was 260.

[c] "PROS" refers to "perceived benefits of service-learning," "CONS" refers to "perceived barriers of service-learning." The wording of each item in these scales was chosen accordingly for the experienced vs. no SL experienced group. For easier reading, item descriptions in the table were statements used for participant who had prior SL experience. Statistics for the no SL experience group were indicated in italics.

[d] Items were reverse coded in the analysis.

[e] Item was excluded from the final scale due to non-significant factor loading to the underlying construct.

Figure 1
The structure and item loadings of the wFSLBI (Faculty without SL Experience)
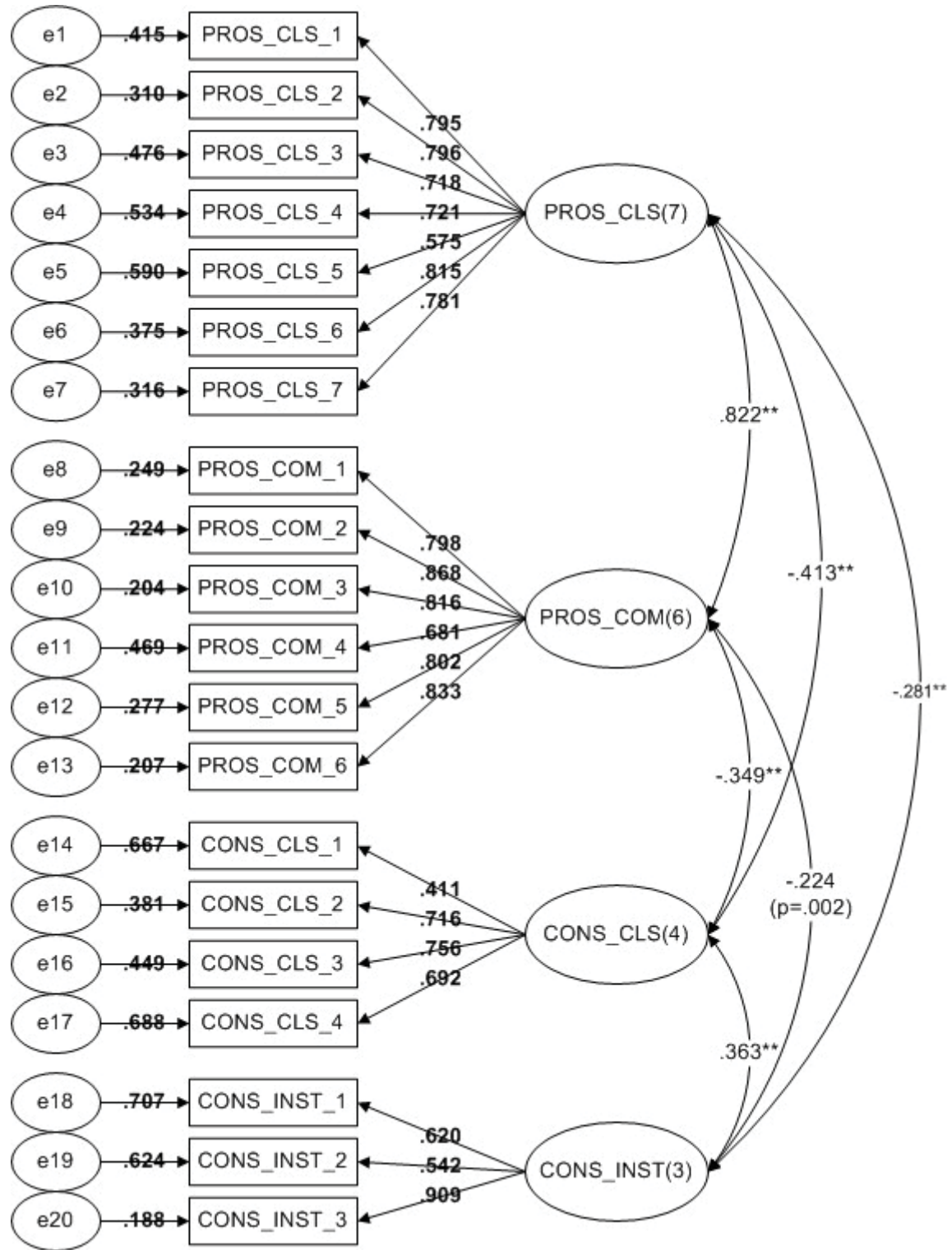
efits at classroom (PROS_CLS; 7-item) and community levels (PROS_COM; 6-item), and perceived barriers at classroom (CONS_CLS; 5-item) and institutional levels (CONS_INST; 3-item). CFA showed that all of the wFSLBI items were loaded significantly and in a way consistent with the four specified constructs for each faculty group, except that one item (CONS_CLS_5) did not load significantly to any of the four factors. After removing this item, CFA then was done again to confirm the 20-item wFSLBI with four-factor model.

Model fit index obtained from Amos output showed that, among faculty with prior SL experience group ($n = 102$), the values of the Incremental Fit Index (IFI) and the Comparative Fit Index (CFI) were .86 and .85, respectively, with X^2/df of 1.60, indicating satisfactory fit (Bollen, 1989). Furthermore, the Root Mean Square Error of Approximation (RMSEA=.077) and Standardized Root Mean Square Residual (SRMR=.069) were both small, which also indicated a good fit (Raykov, 2001). Among faculty without SL experience ($n = 260$), model fit index also showed satisfactory fit index, with X^2/df of 2.64, and IFI, CFI, RMEA as .91, .91, and .079 respectively. Figure 1 summarized the interrelations among the four constructs (latent variables, identified using circles) and the relations between each latent variable and observed indicators (i.e., individual belief items identified using rectangles) among faculty without prior SL experience. (The same figural summary for the SL experienced faculty group is available upon request.) Examination of the factor loadings for both the SL experienced and no experienced groups revealed that all of the 20 items in wFSLBI loaded significantly to their corresponding factor or construct ($p <.001$).

Validity Evidence: Item Discriminate Validity

Analyses showed significant discriminate validities for all of the items in the PROS_CLS, PROS_COM, CONS_CLS, and CONS_INST scales (all $p < .001$), indicating that the wFSLBI successfully discriminated faculty with favorable beliefs

toward SL pedagogy (i.e., those scored in the top one-third of the scale) from those with less favorable SL beliefs (i.e., those scored in the bottom one-third of the scale).

Validity Evidence: Group Comparison

Preliminary analyses showed that, except for the perceived barriers at the institutional level, service-learning faculty scored higher on perceived SL benefits and lower on SL barriers compared with non-SL faculty. The perceived institutional barriers were similar in both faculty groups. Table 3 provides summary statistics of the group comparison.

The final validated wFSLBI, consisting of 20 items in 4 sub-scales, with separate forms for SL and non-SL faculty, is given in Table 4.

Discussion

The study showed satisfactory evidence for the reliability of each scale in the wFLSBI as well as preliminary evidence for the validity of the instrument among faculty with and without service-learning experience. The wFSLBI assesses beliefs about perceived benefits and barriers toward service-learning that are salient among faculty (Abes et al., 2002; Bulot & Johnson, 2006; Driscoll, 2000; Hammond, 1994; Pribbenow, 2005). The new contribution of this instrument lies in its ability to systematically examine perceived service-learning benefits and barriers at different levels, as opposed to general encouraging or discouraging variables. In addition, this validated instrument provides corresponding measurement items to assess and compare these service-learning perceptions across faculty at different service-learning involvement statuses.

The perceived SL benefits measured by the wFSLBI include those at the classroom levels such as enriching classroom discussions, enhancing teaching and learning experience, relationship building with students, etc. Benefits were also measured at the community level, such as the purpose and meaning found in interaction with and service to the community. Key barriers to SL included those at the class-

Table 3
Perceived Benefits and Barriers among Faculty with and without Service-Learning Experience.

SL Experience	N	PROS_CLSM** Mean (SD)	PROS_COMM** Mean (SD)	CONS_CLS** Mean (SD)	CONS_INST Mean (SD)
Faculty with SL experience	102	27.19 (4.75)	25.19 (3.12)	15.02 (3.48)	10.53 (2.48)
Faculty without SL experience	260	22.23 (5.46)	22.00 (4.35)	17.26 (3.21)	10.09 (2.45)
T-Test		$T_{(360)}=8.05; p<.001$	$T_{(256)}=7.78; p<.001$	$T_{(360)}=-5.82; p<.001$	$T_{(360)}=1.54; p=.126$

*Note: ** p<.001*

Table 4
The Final Validated wFSLBI 20-item Forms for Faculty with and without Prior SL Experience

Scale	Item description - With prior SL experience	Item description - No prior SL experience
PROS-CLS		
PROS-CLS_1	Service-learning enriches classroom discussions and lectures in my course.	I believe service-learning will enrich classroom discussions and lectures in my course.
PROS-CLS_2	I enjoy teaching more when the class involves service-learning.	I anticipate enjoying teaching more when the class involves service-learning.
PROS-CLS_3	Service-learning helped me to understand my professional strengths and weakness.	I expect that service-learning will help me to better understand my professional strengths and weaknesses.
PROS-CLS_4	Participating in service-learning helped me clarify areas of focus for my scholarship.	I anticipate that participating in service-learning will help me to clarify areas of focus for my scholarship.
PROS-CLS_5	Teaching service-learning courses has resulted in a change in my teaching style(s).	I believe teaching service-learning will result in changes in my teaching style(s).
PROS-CLS_6	Participation in service-learning is an important component of my professional portfolio.	I foresee participation in service-learning will become an important component of my professional portfolio.
PROS-CLS_7	I was able to develop a good relationship with the students in my service-learning course(s) because of the community work.	I believe that I will be able to develop good relationships with the students in my service-learning course(s) because of the community work.
PROS-COM		
PROS-COM_1	The service my students completed was beneficial to the community.	I believe the service my students will complete will be beneficial to the community.
PROS-COM_2ã	I value working with community partners to structure and deliver the service-learning experience for students.	I believe I will value working with community partners to structure and deliver the service-learning experience for students.
PROS-COM_3	I learned something new about the community from my community partners.	I anticipate that I will learn something new about the community from my community partners.
PROS-COM_4	The community members with whom I partner play an active role in the planning or development of my service-learning course(s).	I expect that the community members with whom I partner will play an active role in the planning or development of my service-learning courses.

Item		
PROS-COM_5	The work my students and I performed enhanced my ability to communicate my ideas in the community.	I expect that the work my students and I perform will enhance my ability to communicate my ideas in the community.
PROS-COM_6	I can make a difference in the community.	I believe I will be able to make a difference in the community.
CONS-CLS		
CONS-CLS_1	Time constraints interfere with my ability to teach a service-learning course.	I expect time constraints will interfere with my ability to teach a service-learning course.
CONS-CLS_2	I feel that I am giving up control of the learning experience when teaching a service-learning course.	I feel that I will be giving up control of the learning experience when teaching a service-learning course.
CONS-CLS_3	I have a harder time assessing student learning and work in a service-learning course than in a traditional course.	I anticipate having a harder time assessing student learning and work in a service-learning course than in a traditional course.
CONS-CLS_4	I experience challenges with the reduced time for classroom instruction in my service-learning course.	I foresee challenges with the reduced time for classroom instruction in my service-learning course.
CONS-INST		
CONS-INST_1	Faculty promotion and tenure policies do not support or encourage my service-	Faculty promotion and tenure policies do not support or encourage my service-learning endeavors.
CONS-INST_2	Administrative leaders actively work to make service-learning a visible and important part of institutional work.	Administrative leaders actively work to make service-learning a visible and important part of institutional work.
CONS-INST_3	My colleagues understand and value service-learning in promotion, tenure, and annual evaluation decisions.	My colleagues understand and value service-learning in promotion, tenure, and annual evaluation decisions.

room levels, such as time constraints in coordination of the service-learning experiences, balancing classroom instruction, and challenges in student assessment. In addition, institutional barriers to SL were measured, including recognition of service-learning during the promotion and tenure process as well as support from colleagues and administrative leaders.

One limitation of the study is the relatively small size of the service-learning faculty sample ($n = 102$), so that CFA model fits, although considered to be good, were a little below ideal. Researchers are encouraged to test the instrument with larger samples to confirm the scale structure. It should also be noted that results from the current study came from a majority tenured or tenure track faculty sample. Additional studies are encouraged to apply the wFSLBI among faculty with different characteristics to further confirm the generalized utility and psychometrics of the instrument. Nevertheless, the current study reports substantial evidence for reliability and validity of each subscale, among both service-learning faculty and those without prior service-learning experience.

Preliminary comparison of scale means between SL faculty and non-SL faculty groups showed that SL faculty perceived higher benefits both at the classroom and community levels, where non-SL faculty tended to perceive higher barriers at the classroom level. It was interesting to note that both SL and non-SL faculty groups showed similar high levels of perceived institutional barriers. Future studies should further investigate motivations of SL faculty who still engage in the service-learning approach even though they perceive similar high level of institutional barriers compared with non-SL faculty. Reasons and motivations encouraging these SL faculty members warrant further examination.

Future study also could expand the use of the wFSLBI to other types of institutions to examine similarities and differences of service-learning perceptions among faculty across institutions. In addition, studies could utilize the wFSLBI to examine motivations for and barriers to service-learning adoption among faculty at different SL involvement stages, in different disciplines, or in varied career tracks. Studies are also needed to examine whether negative beliefs or attitudes are a consequence of unfamiliarity, lack of direct contact, misinformation, preconceptions, or the results of failed experimentation with SL. This research tool has implications for evaluating the effectiveness of tailored faculty development programs via assessing changes in SL-related beliefs, attitudes, and adoption behaviors.

In sum, the current study is the first to develop and validate a research instrument of this kind on service-learning-related beliefs and perceptions. Data were obtained via online survey responses, so the instrument can be easily adopted for other service-learning research projects. Reliable and validated measurement tools are urgently needed, not only to help researchers and administrative leaders better assess and understand faculty motivators and barriers, but also to provide information for developing tailored resources and infrastructure to support faculty SL involvement. The importance of understanding faculty beliefs related to the SL approach is evident for developing needed support and training programs. The two forms of the wFSLBI will allow researchers to assess, compare, and evaluate service-learning program effects for faculty members at various stages of SL involvement.

Notes

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