



# The BACE Scale: A New Measure for Assessing the Benefits of Community Engagement

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## The BACE Scale: A New Measure for Assessing the Benefits of Community Engagement

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While the benefits of community engagement have been discussed extensively in the academic literature, there exist few assessment tools that can measure these benefits accurately. Using descriptive research methodology, the authors developed a robust measure—the Benefits of Academic Community Engagement (BACE) scale—that assesses student perceptions of two specific benefits across multiple disciplines: personal development and social responsibility. Three studies to test and refine the new scale are discussed. In considering the limitations of the studies the authors point to opportunities for future research to determine the scale’s validity across disparate settings. Results show that the instrument effectively captures student perceptions of the benefits of community engagement.

**Keywords:** community engagement, assessment, personal development, social responsibility, service-learning, scale development

Community engagement has increasingly become a pivotal part of college and university mission statements (Fitzgerald, Bruns, Sonka, Furco, & Swanson, 2012; Olowu, 2012; Toncar, Reid, Burns, Anderson, & Nguyen, 2006) and strategic plans (Britner, 2012). Since the 1980s, this emphasis on engagement has transformed academic institutions and communities (Huckabee, 2014; Kronick & Cunningham, 2013) by bringing together the resources and talents of both.

Ehrlich (2000) defined *community engagement* as “working to make a difference in communities through individual or collective actions designed to improve the quality of life” (p. vi). The importance and value of community engagement within academic curricula (sometimes referred to as *experiential learning*, *community-based learning*, or *service-learning*) has a long history dating back to Dewey’s (1902) advocacy for strong school-community connections. The earliest higher education institutions considered civic education to be an essential part of the curriculum and a critical component of preparation for life. In the 1900s, however, a shift took place in higher education that began to separate civic education from discipline-specific education. Gradually, the focus on civic education moved from coursework to extracurricular programs (Colby, Ehrlich, Beaumont, & Stephens, 2003). In 1999, a study conducted by the Kellogg Commission on the Future of State Universities and Land-Grant Colleges found that public universities were failing to make important connections with the communities in which they are situated (Kellogg Commission on the Future of State and Land Grant Universities, 1999). In response, institutions of higher education began reflecting on their roles in the communities they serve and conducting institutional assessments to improve practice. Today, more and more institutions are testing their assumptions about the effect of civic experiences on student learning (Finley, 2017). For example, the National Survey of Student Engagement (NSSE), a widely used general assessment tool, includes items related to civic outcomes. According to the results of the 2018 NSSE, high-impact practices such as service-learning contribute to undergraduate student learning and, more specifically, to the development of informed and active citizens (see [http://nsse.indiana.edu/html/sample\\_institutional\\_report.cfm](http://nsse.indiana.edu/html/sample_institutional_report.cfm)).

Additionally, Indiana University-Purdue University Indianapolis conducted extensive research developing the Civic-Minded Graduate Scale for assessing the knowledge, skills, values, and dispositions graduates need to be active, productive citizens. Results from the application of this instrument have

suggested that students' service-learning course experiences help strengthen their civic-mindedness (Pike, Bringle, & Hatcher, 2014).

More recently, the term *community engagement* has been used to describe the many ways colleges and universities work beyond their walls. Community engagement has become more visible, appearing in the literature on pedagogy (Astin, Sax, & Avalos, 2000; Eyler, Giles, Stenson, & Gray, 2001; Godfrey, 1999; Madsen & Turnbull, 2006; Michaelsen, Kenderdine, Hobbs, & Frueh, 2000), accreditation criteria (Kapucu & Knox, 2013; Larson, 2008; Smith & Van Doran, 2004; Steiner & Watson, 2000), and academic research (Gujarathi & McQuade, 2002; Razzouk, Seitz, & Razkallah, 2003; Tilley-Lubbs, 2004). Additionally, in 2006, the Carnegie Foundation established the first elective classification on community engagement and has continued awarding this distinction to engaged campuses ever since.

Previous studies have shown numerous benefits of community engagement to students' academic development. That is, it gives students the ability to translate course material to practical applications; helps them develop critical-thinking skills; makes course information more relevant to their careers and future job prospects; and creates an environment of active learning (Robinson, 1999; Yusop & Correia, 2013). Similarly, and perhaps more importantly, engaged pedagogy works to strengthen students' identity and enhance their personal development (Lester, Tomkovick, Wells, Flunker, & Kickul, 2005; Pelco, Ball, & Lockeman, 2014). Personal development includes improved problem-solving, decision-making and communication skills, and an increased sense of self-efficacy (Petray & Halbert, 2013). Moreover, engaging students in meeting community needs can result in personal growth unconnected to the course objectives, such as clarifying values or considering a new career path (Hatcher, Bringle, & Hahn, 2016b).

Engaged pedagogy also positively influences social responsibility and builds college students' civic-mindedness (Hatcher & Bringle, 2012; Stokamer & Clayton, 2017; Yusop & Correia, 2013). Social responsibility is the ability to feel concerned about the welfare of others and to act on those concerns (Olney & Grande, 1995). Higher education represents an opportunity for students to develop an awareness of their responsibility to make a positive impact on communities and an understanding that they must work to develop the skills, knowledge, and dispositions to make that impact. There is a growing consensus among researchers that increases in social responsibility and personal development are closely related outcomes (Hersh & Schneider, 2005) as students actively apply their knowledge and skills to make a difference in communities (Reason, 2013).

## **Rationale for Assessment**

Institutions of higher learning are reexamining their mission statements and renewing their commitment to civic participation (Hatcher, Bringle, & Hahn, 2016a). At the same time, there is a push for student learning outcomes to include not only discipline-specific skills and knowledge, but also the "soft skills" necessary to succeed in life (e.g., the ability to think critically, problem solve, collaborate, etc.) (Chan, 2016; Hatcher, Bringle, & Hahn, 2016b). Furthermore, the Association of American Colleges and Universities (AAC&U) has, for the past decade, worked to help higher education respond to the need for curricula focused on students' personal development and social responsibility (AAC&U, n.d.). Increasingly, national associations, accrediting agencies, and professional organizations are requiring institutions to measure these outcomes, and such assessment is often expected to include both direct and indirect evidence of student learning (Provezis, 2010).

In Texas, for instance, the state Higher Education Coordinating Board called for revision of the core curriculum in order to better prepare "students for work, fulfilling civic responsibilities, and leading meaningful lives" (Texas Higher Education Coordinating Board, 2011, p. 5). The board approved six core objectives: (1) critical-thinking skills, (2) communication skills, (3) empirical and quantitative skills, (4) teamwork, (5) social responsibility, and (6) personal responsibility. Institutions are required to measure student progress in each of these areas for program accreditation purposes. Although this revision comprised a formidable task for many universities in Texas, tools for assessing critical-thinking skills, communication skills, empirical and quantitative skills, and teamwork were already in place. What was not ubiquitous across Texas colleges and universities, however, were assessment instruments related

to personal development and social responsibility, which are critical for the cultivation of students' civic disposition.

The Office of Academic Planning and Assessment at Sam Houston State University began the task of measuring growth in students' personal development and social responsibility and requested that the Center for Community Engagement assist in this endeavor. Since much of the literature in this area has centered on engaged pedagogy (Hemer & Reason, 2017), connecting with the Center for Community Engagement was a logical step in the process. Moreover, the center had already created a mechanism for assessing student learning related to Academic Community Engagement (ACE) courses. Since these courses must include student reflection assignments in order to achieve the ACE course designation, faculty experts sampled and scored written reflections using a rubric. Though the results of these direct assessments go beyond the scope of this article, they revealed positive gains in student learning. What was lacking, however, was a surrogate assessment tool for evaluating student attitudes and values linked to ACE courses that could be administered with ease across all colleges and disciplines within the university. Following best practices in assessment (Palomba & Banta, 2014; Suskie, 2009), the authors realized that we needed to combine both direct and indirect evidence to comprehensively assess impacts of ACE pedagogy.

This article describes the three-year process by which Sam Houston State University developed a robust instrument for measuring student progress in areas of personal development and social responsibility: the Benefits of Academic Community Engagement (BACE) scale. This scale is unique in that it is easy to administer, cross-disciplinary, reliable, valid, and captures students' intentions for future community engagement.

## Developing an Instrument

Sam Houston State University was founded as a normal institute in 1879. As a teacher-training school, the institute expected candidates to hone their skills and apply classroom learning within the local public-school setting. The university's motto, "the measure of a life is its service," grew from the belief that higher education is linked inextricably to the community it serves. As the institution grew over the decades from a normal school to a comprehensive doctoral-granting university with seven colleges, it was (and remains) critical that the institution maintain strong connections to the community. Sam Houston State University's Center for Community Engagement, which promotes university-community partnerships, was founded in 2012. In fact, when faculty choose to employ community engagement experiences their ACE courses are formally designated and recognized. We believe that the ultimate goal of community engagement courses is not only to forge strong university-community partnerships, but also to affect a transformation of students' personal development (i.e., knowledge and skills) and social responsibilities (i.e., awareness of their obligation to contribute to society).

As we worked to institutionalize ACE pedagogy across Sam Houston State University, we recognized the need to develop an interdisciplinary assessment tool. We began by looking for an existing scale that was reliable and valid and that could be modified to meet our needs, thus requiring less time to develop (Bringle, Phillips, & Hudson, 2004). We found that while the benefits of community engagement have been well documented (Eyler et al., 2001), there are very few self-assessment tools that faculty across disciplines can use to measure their students' perceptions of the benefits of the ACE pedagogy. In addition, many tools for assessing personal development and social responsibility are lengthy surveys (Moely, Mercer, Ilustre, Miron, & McFarland, 2002; Whitley & Yoder, 2015), are too program-specific (Poon, Chan, & Zhou, 2011), or require analysis of written documentation (Hébert & Hauf, 2015). One such tool is the Service Learning Benefit (SELEB) scale, developed to evaluate the benefits of community engagement (Toncar et al., 2006). The SELEB scale seemed to be the closest match for our assessment needs. The original scale's validity was tested using a small sample ( $n = 42$ ) of students in two business courses. The scale was developed using Churchill's (1979) methodology, whereby the original 27 items were factor analyzed and reduced to 12 items. The final scale consisted of four dimensions (i.e., practical skills, citizenship, personal responsibility, and interpersonal skills). However,

the SELEB scale had not undergone extensive revalidation, nor had it received widespread scrutiny (i.e., using different samples from different academic institutions) since its development. Therefore, we did not feel comfortable using it without modification.

The BACE scale is similar to the SELEB scale in that it is based on student perceptions of the benefits of community engagement to their personal development and social responsibility. We felt that developing the BACE scale would be advantageous for Sam Houston State University primarily because it is designed to uniformly assess student learning linked to community engagement across multiple disciplines. Since the ACE pedagogy had been institutionalized, we received input from faculty in a variety of disciplines who wanted to include specific items on the university-wide instrument. Initially, faculty members who were extensively involved in community engagement (e.g., arts, education, sciences, and social sciences) provided recommendations that were incorporated into the BACE scale.

We started the process of scale development by including the original 12 items from the SELEB scale (Toncar et al., 2006). Developing valid and reliable multi-item instruments requires scale refinement (Terblanche & Boshoff, 2008). Following Churchill's (1979) recommendation, we added several additional items that had been suggested by faculty members across colleges. We then changed the wording of each item to reflect institution-specific ACE pedagogy rather than the service-learning-based terminology used in SELEB. The original SELEB scale used a 7-point rating scale, but we adopted a 5-point Likert scale with "N/A" as an option. We made additional modifications to the revised scale used in Study One (described in the next section).

Broadly stated, measurement involves assigning scores (e.g., self-reported by individuals on a 5-point scale) that may potentially represent characteristics of a construct (e.g., benefits of community engagement). To determine if the scores actually represent the characteristics, researchers recommend employing two distinct criteria for evaluating the measures: reliability and validity (Cacioppo & Petty, 1982). Generally, the assessment of reliability and validity is an ongoing process that requires multiple studies. Therefore, we conducted multiple studies over a three-year time period.

## Study One

The primary purpose of Study One was to determine the BACE scale's face validity, or the degree to which the items measure student perceptions of the benefits of community engagement. This was critical since the BACE scale differs significantly from the SELEB scale. In the study, both students and instructors were given the opportunity to critique the wording of each of the items that make up the scale. We used a convenience sample of nine courses in three disciplines: mass communication (4), education (4), and sociology (1). The nine courses were taught by nine different instructors engaged in a variety of activities with many community partners. Two hundred twenty-one students participated in this initial study.

We conducted basic descriptive analyses to explore what students thought about their community engagement experiences. Students reported liking that the course "made a difference" (4.39) and that they could apply the subject matter to real-world situations (4.36). Students indicated that they would recommend the ACE course to a friend (4.33). They also believed that ACE courses benefited the community (4.24) and that they found their ACE course to be very valuable (4.23). In addition, we sought to identify student views about community engagement. Students tended to disagree with the statement, "I probably won't volunteer in the community after taking the ACE course" (1.77); that is, a low mean indicated they thought they would probably volunteer. They also thought they would have learned less from the course if more time were spent in the classroom instead of in community engagement activities (4.13). In other words, they believed that community engagement helped them learn the course material better than if the course content had been delivered in the classroom only.

The secondary purpose of Study One was to determine the BACE scale's content validity, or whether the items adequately represent or cover the content of the construct. Since this was the first study, we deemed it necessary to let the respondents describe the benefits of community engagement in their own words. Students were asked (in an open-ended format, without the use of a Likert scale) to indicate their perception of the benefits they received from their ACE course. Their responses included the following:

- “I realized that helping and serving others is important.”
- “The course gave me an opportunity to demonstrate caring and compassion.”
- “Community engagement provided networking opportunities.”
- “This community engagement taught me how to be responsible.”
- “I learned leadership skills.”
- “The experience was life changing.”

Overall, Study One determined that the BACE scale did measure student perceptions of the benefits of community engagement (face validity), and the scale questions covered the content that was needed to measure these benefits (content validity). It is very common for researchers to conduct multiple studies (Hou & Pereira, 2017; Yadav & Rahman, 2017) when developing multi-dimensional scales; thus, the results for the first study laid the foundation for Study Two.

## Study Two

The primary purpose of Study Two was to refine the results from Study One by rewording some of the items, adding additional items, and determining the reliability and validity of the BACE scale using a larger disparate sample of both students and courses. Specifically, for the second study we selected a larger convenience sample of 16 courses in education (6), sociology (2), agriculture (2), library science (2), marketing (1), management, and (1), honors (1), and an internship (1), for a total of 350 student participants.

While we continued to use some modified items from the original SELEB scale, many of the items comprising the BACE scale were significantly different based on the results of Study One. Since there were significant modifications, we anticipated a factor solution that was entirely different (and unique) from the SELEB scale (see Table 1). The main purpose of Study Two was to assess the construct validity of the BACE scale.

**Table 1.** BACE Scale, Study Two

Items	Personal Development	Social Responsibility
Participating in the community helped enhance my <i>leadership</i> skills.	0.741	---
The community service I did in this course helped me to <i>analyze problems</i> and <i>think critically</i> .	0.720	---
The community service in this course helped me to develop <i>workplace skills</i> .	0.716	---
The community service in this course has made me <i>more employable</i> .	0.712	---
The community service in this course assisted me in defining the <i>type of work</i> I want to do in the future.	0.705	---
Participation in the community helped enhance my <i>communication</i> skills.	0.701	---
The community service in this course helped me to develop <i>organizational skills</i> .	0.684	---
The community service in this course helped me to <i>connect theory with practice</i> .	0.612	---
Working in the community helped me to define my <i>personal strengths and weaknesses</i> .	0.608	---
The community service in this course helped me to apply the subject	0.572	---

matter in a “*real world*” situation.

	Cronbach’s alpha	0.936	---
	This course helped me understand my <i>responsibility</i> to serve the community and develop my <i>citizenship skills</i> .	---	0.775
	This course helped me understand that I can <i>make a difference in my community</i> by being involved.	---	0.740
	The community service aspect of this course showed me how I can become <i>more involved</i> in my community.	---	0.729
	This course helped me understand the <i>differences</i> (i.e., cultural, racial, economic, etc.) that exist in our community.	---	0.668
	The community service aspect of this course helped me to become <i>more aware of the needs in my community</i> .	---	0.667
	Cronbach’s alpha	---	0.895

We conducted exploratory factor analysis (EFA) using principal component analysis in SPSS (version 22.0). Both the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett’s test of sphericity were performed to measure the suitability of the data for factor analysis. The decision to include items was based on the factor loadings on a rotated factor matrix using the maximum likelihood extraction method with varimax rotation (Costello & Osborne, 2005). Utilizing an oblique factor rotation method (i.e., varimax) produces a simple factor structure in which the dimensions of the construct can easily be determined. The eigenvalue-greater-than-one rule was used as a basis for determining the number of factors to rotate (Kaiser, 1960). All items with factor scores above 0.5 were maintained (Baldus, Voorhees, & Calantone, 2015; Yadav & Rahman, 2017). According to Peter (1979), not determining the construct validity of a scale is the most significant problem when developing a new scale. We found two underlying factors (not four, as in the original SELEB scale). Several raters were requested to label the two factors. The raters recommended that the first factor be labeled *personal development* (which consisted of items that benefited the students personally). Personal development included 10 items (e.g., the ACE course enhanced their leadership, communication, problem solving, organization, critical thinking, workplace skills). The second factor was appropriately labeled *social responsibility* and included five items that students believed benefited the community (e.g., “This course helped me understand my responsibility to serve the community and develop my citizenship skills”).

The reliability of each of the two factors was assessed using Cronbach’s alpha; the reliability measures were 0.94 and 0.90, respectively. The high reliability of the BACE scale (Nunnally & Bernstein, 1994) could be due to several reasons. First, the BACE scale was based on the previously developed SELEB scale. Second, face validity and content validity had been assessed in Study One, thereby eliminating ambiguity in the items. Third, a larger, more robust sample was used in Study Two.

Overall, Study Two determined that the BACE scale was reliable (i.e., it had high internal consistency) and valid (i.e., it had a robust factor structure). We were able to assess student perceptions of the impact of academic community engagement on several aspects of personal development (i.e., leadership, communication, problem solving, organization, critical thinking, and workplace skills) and social responsibility.

### Study Three

For Study Three, Sam Houston State University's Center for Community Engagement requested a sample of faculty teaching ACE courses to administer the revised BACE scale to their students. The survey was completed by 612 students from all seven colleges on campus. Table 2 illustrates the results of the study.

**Table 2.** BACE Scale, Study Three

Items	Personal Development	Social Responsibility
Participating in the community helped enhance my <i>leadership</i> skills.	0.667	---
The community service I did in this course helped me to <i>analyze problems</i> and <i>think critically</i> .	0.717	---
The community service in this course helped me to develop <i>workplace skills</i> .	0.692	---
The community service in this course has made me <i>more employable</i> .	0.642	---
The community service in this course assisted me in defining the <i>type of work</i> I want to do in the future.	0.618	---
Participation in the community helped enhance my <i>communication</i> skills.	0.597	---
The community service in this course helped me to develop <i>organizational skills</i> .	0.619	---
The community service in this course helped me to <i>connect theory with practice</i> .	0.672	---
Working in the community helped me to define my <i>personal strengths and weaknesses</i> .	0.604	---
The community service in this course helped me to apply the subject matter in a <i>real-world situation</i> .	0.664	---
Cronbach's alpha	0.911	---
This course helped me understand my <i>responsibility</i> to serve the community and develop my <i>citizenship skills</i> .	---	0.625
This course helped me understand that I can <i>make a difference in my community</i> by being involved.	---	0.762
The community service aspect of this course showed me how I can become <i>more involved</i> in my community.	---	0.827
This course helped me understand the <i>differences</i> (i.e., cultural, racial, economic, etc.) that exist in our community.	---	0.476
The community service aspect of this course helped me to become <i>more aware of the needs in my community</i> .	---	0.748
Cronbach's alpha	---	0.857



Churchill's (1979) well-accepted procedure for the development of a valid (i.e., accurate) and reliable (i.e., consistent) multi-item scale was followed. In Study One, we identified the domain of the construct, generated items, and conducted a survey using a convenient sample. In Study Two, the scale was refined based on reliability and validity checks. In Study Three, the scale was re-tested with a larger, more diverse sample to determine if a shorter form of the scale could be used.

During Study Three, we performed a demographic analysis to determine the makeup of the sample and the validity of the sample. The proportion of males (24.2%) was significantly lower than the proportion of females (75.8%). White students accounted for 69.7% of the sample, Hispanic students 14.4%, African Americans 13.7%, and other ethnicities 2.2%. Since a majority of ACE courses are taught at the upper division, approximately 84.2% of the respondents were juniors or seniors. The mean age of the respondents was 23.6 years old. The mean GPA (which was self-reported) was 3.24. While these numbers are not perfectly generalizable to the university's population, they closely resembled the makeup of the student body taking ACE courses across the institution, hence sample validity was confirmed.

Unlike exploratory factor analysis, confirmatory factor analysis (Yadav & Rahman, 2017) is generally used to examine the factor structure of a model and the association among scale items (i.e., unidimensionality of the construct and orthogonality of the factors). Partial least squares was used (instead of AMOS 22) to perform confirmatory factor analysis since it is more robust to violation of assumptions. The R-square value was 52.9 and significant at the 0.0001 level, indicating that the items used in the BACE scale can measure gains in student perceptions related to personal development and social responsibility.

### Personal Development

One of the main reasons faculty teach ACE courses is because they believe that the pedagogy benefits their students in numerous ways. The results from the BACE scale confirm this notion. Table 3 displays the mean, standard deviation, and distribution of the 10 aspects of personal benefits students believe increased from their ACE courses.

**Table 3.** Personal Development

Items	Response Frequency (%)					Mean	Std. Dev.
	SD (1)	D (2)	N (3)	A (4)	SA (5)		
1. Participating in the community helped enhance my <i>leadership</i> skills.	1.2	4.0	21.9	39.4	33.6	4.00	0.906
2. The community engagement I did in this course helped me to <i>analyze problems</i> and <i>think critically</i> .	1.8	5.5	24.7	40.6	27.5	3.86	0.942
3. The community engagement in this course helped me to develop <i>workplace skills</i> .	1.3	5.3	15.8	39.3	38.3	4.08	0.931
4. The community engagement in this course has made me <i>more employable</i> .	2.5	4.4	19.1	33.2	40.9	4.06	0.999
5. The community engagement in this course assisted me in defining the <i>type of work</i> I want to do in the future.	5.8	7.6	21.6	27.9	37.1	3.83	1.177
6. Participation in the community helped enhance my <i>communication</i> skills.	2.0	3.6	17.4	39.8	37.2	4.07	0.930
7. The community engagement in this course helped me to develop	2.8	8.1	23.0	38.2	28.0	3.80	1.023

*organizational skills.*

8. The community engagement in this course helped me to <i>connect theory with practice.</i>	3.0	7.1	21.4	37.9	30.6	3.86	1.027
9. Working in the community helped me to define my <i>personal strengths and weaknesses.</i>	1.8	6.3	21.9	38.5	31.5	3.92	0.972
10. The community engagement in this course helped me to apply the subject matter in a “ <i>real world</i> ” situation.	1.0	2.3	11.2	34.2	51.3	4.33	0.837

### Social Responsibility

While students believed they had received considerable personal value from their respective ACE course, they also thought the course helped them to develop into socially responsible people (see Table 4 for the mean, standard deviation, and distribution of responses).

**Table 4.** Social Responsibility

Items	Response Frequency (%)					Mean	Std. Dev.
	SD (1)	D (2)	N (3)	A (4)	SA (5)		
1. This course helped me understand my <i>responsibility</i> to serve the community and develop my <i>citizenship skills.</i>	0.8	4.5	19.7	36.2	38.8	4.08	0.914
2. This course helped me understand that I can <i>make a difference in my community</i> by being involved.	1.5	3.5	13.6	31.1	50.3	4.25	0.922
3. The community engagement aspect of this course showed me how I can become <i>more involved</i> in my community.	1.3	4.6	15.0	36.9	42.2	4.14	0.926
4. This course helped me understand the <i>differences</i> (i.e., cultural, racial, economic, etc.) that exist in our community.	2.3	6.2	16.4	33.2	41.8	4.06	1.020
5. The community engagement aspect of this course helped me to become <i>more aware of the needs in my community.</i>	1.7	6.3	19.4	33.6	39.1	4.02	0.993

Community engagement courses can be transformational in helping students change the way they think about their social responsibilities. According to the data, students believed that the ACE pedagogy was valuable, and they indicated their intent to remain engaged in the future (see Table 5).

**Table 5.** Intended Social Responsibility

Student Response	Response Frequency (%)					Mean	Std. Dev.
	SD (1)	D (2)	N (3)	A (4)	SA (5)		
1. I probably will <i>continue to serve the community</i> after this course.	1.6	3.0	17.3	32.5	45.6	4.17	0.931

While the BACE scale is designed to assess student perceptions of the contribution of ACE pedagogy to personal development and social responsibility, we also explored students' perceptions of the benefits of ACE courses to the community (see Table 6). Students believed that the relational exchanges between community partners and the student were mutually beneficial. Moreover, they rated the entire experience of working in a community as excellent (mean of 8.41 on a 10-point scale) and would recommend that other students take courses that adopt ACE pedagogy (4.22). Finally, we believe that ACE pedagogy tends to help students become more socially aware (4.23), and students reported that they intended to be community-oriented well into the future (4.22), thereby supporting the notion that ACE courses may potentially increase social responsibility.

**Table 6.** Benefits to Community

Item	Mean	St. Dev.
The community service I did through this course <i>benefited the community</i> .	4.23	0.912
I probably will <i>continue to serve the community</i> after this course.	4.22	0.982
I would <i>recommend this course</i> to a friend.	4.22	1.065
On a scale of 1 to 10, where 1 is a bad experience and 10 is an excellent experience, I would rate my community service learning experience in this class/course as a .	8.41	1.784

Based on these preliminary analyses of Study Three, we concluded that ACE courses provide an ideal laboratory for students to engage in their communities in ways that enhance their learning. Our research demonstrated that students in ACE courses reported learning in many key areas: problem solving, decision making, critical thinking, leadership, communication, teamwork, time management, personal development, and social responsibility.

## Conclusion

Over 15 years ago, the American Association of State Colleges and Universities (2002) called for public universities to be "stewards of place," that is, to develop deeper linkages with the regions in which they reside and create mutually beneficial partnerships. We believe the ever-increasing number of ACE courses at Sam Houston State University reflects strong connections to the community. In combination with our direct assessments of student learning (i.e., analysis of written reflections), the results of the BACE scale have fortified our belief in the powerful effects of community engagement on our students' personal development and social responsibility. We have developed a tool for measuring student progress in these areas across disciplines in a way that is quick, valid, reliable, and indicative of the likelihood of future community engagement. While scale development is an important undertaking in many disciplines, especially the social sciences, we believe it is critically important that fields like community engagement, which are interdisciplinary in nature, use scales designed to measure its different facets. Therefore, developing a scale that measures the benefits of community engagement is only the beginning. We hope future researchers will develop additional scales for measuring other aspects of community engagement. At a time when the value and utility of higher education have come into question, the BACE scale

provides evidence that community-engaged pedagogy enhances personal development and social responsibility.

### **Limitations and Future Research**

As indicated previously, the primary purpose of this research endeavor was to develop a reliable and valid scale for measuring student perceptions of the benefits of academic community engagement across multiple disciplines. Yet this project did have some limitations, which offer opportunities for future research. First, data for all three studies were systematically collected from one campus in Texas. Additional data should be collected from a larger set of diverse institutions, both domestic and international, to test this instrument's application in varied educational settings. A comprehensive study across several campuses could allow for rich comparisons across those institutions (i.e., public vs. private, religious vs. non-religious, four-year vs. two-year). In addition, a larger study would allow for comparisons between disciplines. Second, the sample of respondents used to develop the scale was based on convenience (i.e., a non-probability sample). A random sample of both courses and students would create greater representation and robustness in a future study. Third, an experimental research methodology (vs. a descriptive research methodology) could be designed in which student perceptions of the benefits of ACE courses (experimental group) and student perceptions of non-ACE courses (control group) could be compared. Fourth, we believe more work should be undertaken to improve the operational definitions of personal and social responsibility, the two dimensions identified in this research. Fifth, several of the items on the BACE scale are worded in a way that may make it difficult to interpret the results. The current version of the instrument has several double-barreled items (Fowler, 2014; Groves et al., 2009). For example, regarding the item "This course helped me understand my responsibility to serve the community and develop my citizenship skills," if a student agrees, it is possible that they are agreeing that the course helped them do two things, or only one of the two. The statement is not as precise as it could be since understanding one's responsibility to serve the community and developing one's citizenship skills may be interconnected. Nevertheless, we feel that responses are still indicative of perceptions of student learning. Future research should, however, parse these items in order to achieve greater specificity around student perceptions of learning. Finally, the classes whose students participated in the three studies were registered as ACE courses. While this was the main purpose of our research effort, future studies should focus on measuring the benefits of community engagement broadly, encompassing co-curricular activities, rather than limiting them to benefits gained from academic courses.

In spite of these limitations and the need for future research, this work refines and advances the assessment of student perceptions of the impacts of community engagement on learning outcomes. We hope researchers will adopt and improve the BACE scale.

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