

Extension-based Community Engagement Project Contributions to Landscape Architecture Core Competencies and Professional Values¹

O. Sleipness²,

J. Powell³,

D. Anderson⁴

D. Evans⁵

R. McCann⁶

S. Chen⁷

Utah State University

Logan, UT



Abstract

This study evaluates the contribution of Extension-based community engagement design projects to the development of core technical competencies and professional values in the landscape architecture program at Utah State University. Many university design programs—including landscape architecture—employ community engagement to address local and regional design dilemmas. Programs within traditional agriculture schools often frame these activities as contributory to their institutions' land-grant missions. Engaged scholarship is well enumerated within the literature of landscape architecture. However, little has been published on how Extension facilitates these engagements or its contribution to the development of core competencies and professional values. Utah State University's (USU) landscape architecture program alumni and students were surveyed to determine their perceptions of Extension-based design projects' contribution to the development of core competencies and professional values. Results

revealed projects contribute to the development of core technical competencies including software skills, problem-solving, as well as acculturation of professional values and interpersonal skills such as collaboration, empathy, and leadership. As land-grant design programs assess the value of Extension-based community engagement projects, this study illuminates benefits for developing core competencies and professional values in the next generation of design practitioners.

Introduction

This project evaluated the contribution of Extension-based community engagement projects to the development of core competencies and professional values within the landscape architecture program at Utah State University, a land-grant university in the Intermountain West. As a fulfillment of their land-grant missions, Extension programs

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² Landscape Architecture and Environmental Planning, 435.797.0510, ole.sleipness@usu.edu

³ Landscape Architecture and Environmental Planning, 435.797.0500, jake.powell@usu.edu

⁴ Landscape Architecture and Environmental Planning, 435.797.0500, david.anderson@usu.edu

⁵ Landscape Architecture and Environmental Planning, 435.797.0500, david.evans@usu.edu

⁶ Extension and Environment and Society, 435.797.5116, roslynn.mccann@usu.edu

⁷ Landscape Architecture and Environmental Planning, 435.797.0501, shuolei.chen@aggiemail.usu.edu

are tasked with extending applied research to stakeholders, communities, and the public through a variety of multi-scale educational and outreach activities that address tangible local needs (Sleipness et al., 2016). Often, these local issues manifest as opportunities for collaboration between university design programs and community partners. Many design programs—particularly those focused on the built environment—have established venerable legacies of addressing these design challenges through community engagement projects that pair the creative expertise of their design faculty and students with the experiential knowledge of community partners (Angotti et al., 2012; Chanse, 2011; Crawford et al., 2008; Hinson, 2007; Hou et al., 2014; Lee, 2008; Sleipness et al., 2016; Thering and Chanse, 2011). While individual programs of design engagement are often described within case studies and theoretical approaches to illustrate the nature of local problems and range of possible solutions (Angotti et al., 2012; Armstrong, 1999; Chanse, 2011; Crawford et al., 2008; Francis, 2001; Hou et al., 2014; Lee, 2008; Reardon, 1998; Sleipness et al., 2016; Thering and Chanse, 2011), the relationship between university design programs and Extension is less clearly enumerated in existing literature (Evans and Anderson, 2016; Sleipness et al., 2016). Within the U.S., 97 accredited graduate and undergraduate landscape architecture programs exist at 72 universities, of which 65 are public and 42 are land-grant universities. However, of those 42 situated at land-grant universities, only 10 programs have dedicated Extension landscape architecture faculty. Of these, Utah State University (USU) has the most Extension landscape architecture personnel (n=3) among its faculty and has engaged communities over 4 decades through hundreds of projects across the Intermountain West. Extension is an integral component of the department's community engagement activities. Project formats include vertically integrated intensive department-wide design workshops (charrettes), projects conducted within studio-based courses, and faculty-directed research.

The department's alumni practitioners and students were surveyed on their perceptions of Extension-based community engagement project impacts on several key dimensions of professional practice readiness. These dimensions include core competencies, development of professional values, and use of projects in professional networking and securing employment.

Core Competencies in Professional Practice

Landscape architects “analyze, plan, design, manage, and nurture the built and natural environments” (ASLA, 2019 paragraph. 1). As a discipline and licensed profession, landscape architecture's significant body of design work includes not only residential projects, but also “parks, campuses, streetscapes, trails, plazas, and other projects that help define a community” (ASLA, 2019 paragraph. 1). To prepare future landscape architects for professional licensure, accredited university programs cover a broad range of technical competencies, theoretical knowledge, and core skills that reflect the breadth of contemporary professional practice (Brown and Corry,

2011; Gazvoda, 2002; LABOK Task Force, 2004; Meijering et al., 2015; Rodiek, 2006) and content of the Landscape Architecture Registration Exam (LARE) (Council of Landscape Architecture Registration Boards, 2017). While landscape architects' professional licensure requires specialized technical knowledge necessary to protect the health, safety, and welfare of the public, landscape architects are also expected to recognize the local knowledge of clients, public stakeholders, and others who will use the places that they design.

Professional Values and Worldview

In addition to transmitting technical knowledge, university programs also play a critical role in acculturating students in the values of their profession (Lee and Crawford, 2011) often through active participation in student-centered learning experiences (Machemer and Crawford, 2007) rather than passively listening (Boyer, 1990; Felder and Brent, 1996; Jungst et al., 2003; Qualters, 2001). Experience navigating public input processes, engagement with clients, and maintaining effective working relationships with others are increasingly viewed as a core competencies within landscape architecture and its allied disciplines—and reflective of the profession's core values, including meaningful public involvement.

Landscape architects' predominant worldview toward public involvement is rooted in literature of a closely allied discipline, planning. For decades, planners have involved the public in identifying problems and solutions through public meetings, hearings, and other public processes (Crawford et al., 2008). Drawing from communicative planning literature (Forester, 1989; Innes, 1995) and Arnstein's (1969) ladder of citizen participation, planners are encouraged “to engage in meaningful dialogue, to understand concerns, to share knowledge and experience, to be open to different perspectives and work toward mutual solutions” (Crawford et al., 2008 p. 539). Through collaboration, local stakeholders' experiential knowledge and professionals' expert knowledge can complement each other, resulting in more effective planning and design solutions (Healey, 1999). Similarly, meaningful stakeholder engagement is often central to the success of landscape architecture projects situated within the public realm (Crawford et al., 2008).

Relatedly, because many projects within professional practice are too complex for any one single practitioner or discipline to tackle, collaborative experiences are desirable among practitioners at entry and senior levels. Collaboration is both a core professional value and product of a variety of interpersonal skills. Across disciplines, skills essential for effective teamwork (Norsen et al., 1995) include effective communication, respectful exchange of ideas, regard for other opinions and viewpoints, and willingness to adjust accordingly (Hall, 2005). Collaborative projects provide opportunities for students to produce solutions that would not be able to produce when acting alone (Bronstein, 2003), experience alternative ways of viewing design problems, and practice the collaborative skills necessary

for future interdisciplinary teamwork in work environments that replicate those found in the real-world (Machemer and Crawford, 2007). While these practices enable effective working relationships, expansive thinking also enables designers to recognize design opportunities where they may not be apparent (Sleipness et al., 2016). Incorporation of these values into the individual's worldview occurs within the socialization process of university projects. As an individual's history of collaboration is indicative of their willingness to participate in future collaborations (Bronstein, 2003), community engaged design projects enable students to build a record of collaboration before entering the workforce.

Methods

To evaluate the impacts of Extension-based community engagement design projects, we distributed an online Qualtrics survey (De Leeuw et al., 2012) via email to 800 program alumni and 100 current students. The survey was formatted using multiple-choice questions focused on

respondents' experiences with Extension-based landscape architecture projects and activities, their perceptions of these projects' contribution toward core entry-level professional practice competencies, acculturation of core professional values, and use of products generated during the course of the projects in professional networking, portfolio development, and internship or job placement. Within the survey, respondents were provided examples of Extension-based community engagement activities, formats, and project types within the department. Student respondents were asked to select their cohort year, while alumni respondents were asked to select which decade they graduated, with the current decade split approximately in half (2010-2014 and 2015-2018) to capture more granular data from the program's most recent alumni (Table 1).

Questions related to select core competencies were informed by the Landscape Architecture Body of Knowledge Study Report (Landscape Architecture Body of Knowledge Task Force, 2004), Accreditation Standards for First-Professional Programs in Landscape Architecture (Landscape Architectural Accreditation Board, 2016), Council of Landscape Architecture Registration Boards (2017), and skills commonly enumerated within landscape architecture job postings. These included abilities to use drawing to graphically communicate design ideas, ability to use the design process to solve real-world problems, and ability to communicate ideas through verbal communication and public presentation. As entry-level landscape architecture graduates are typically expected to be proficient in a variety of digital programs, the survey included questions on projects' contribution to the respondents' ability to use AutoCAD, GIS, and other related digital programs including Sketchup and Adobe Creative Suite. Questions within this category were presented in multiple choice format, with respondents selecting whether the projects impact was very positive, somewhat positive, had no impact, or had a negative impact on selected core competencies (Table 2).

Questions related to core professional values were informed by publications used for core competencies as well as Gazvoda (2002), Landscape Architecture Foundation (2017), and literature of community engaged design (Angotti et al., 2012; Crawford et al., 2008; Hall, 2005; Hirsch et al., 2001; Bose et al., 2014; Lee and Crawford, 2011; Machemer and Crawford, 2007; Thering and Chanse, 2011). These included projects' impact on leadership skills, ability to collaborate with others on a team, and the ability to see others' points of view. Additionally, empathy for others' needs and disciplinary awareness were included to inquire whether respondents' worldview had expanded. Specifically, respondents were asked whether projects impacted their familiarity and appreciation for the natural and cultural landscape of Utah and the Intermountain West, affected their understanding of the needs of Utah residents different from themselves and expanded their perception of the kinds of problems that landscape architects can solve through design (Table 3).

Table 1. Program Alumni and Student Respondents by Cohort and Year Graduated

Alumni Respondents (n=52)	n	%
Year Graduated		
2015-2018	7	13%
2010-2014	6	12%
2000-2010	15	29%
1990-1999	10	19%
1980-1989	6	12%
1970-1979	7	13%
1960-1969	1	2%
Prior to 1969	0	0%
Student Respondents (n=20)		
Cohort	n	%
Graduate Student (3rd year)	0	0%
Graduate Student (2nd year)	4	20%
Graduate Student (1st year)	1	5%
Senior	4	20%
Junior	7	35%
Sophomore	4	20%
Freshman	0	0%

Table 2. Project Impacts on Development of Selected Core Competencies

	Alumni n	%	Students n	%
Autocad				
Very Positive	7	15%	4	21%
Somewhat Positive	14	30%	10	53%
No Impact	26	55%	5	26%
Negative Impact	0	0%	0	0%
GIS				
Very Positive	8	18%	2	11%
Somewhat Positive	14	31%	8	42%
No Impact	22	49%	9	47%
Negative Impact	1	2%	0	0%
Sketchup and Adobe Creative				
Very Positive	13	28%	11	58%
Somewhat Positive	15	33%	7	37%
No Impact	18	39%	1	5%
Negative Impact	0	0%	0	0%
Graphic Communication through Sketching and Drawing				
Very Positive	10	21%	6	32%
Somewhat Positive	28	60%	10	53%
No Impact	9	19%	3	16%
Negative Impact	0	0%	0	0%
Verbal Communication through Presenting and Public Speaking				
Very Positive	27	57%	11	58%
Somewhat Positive	15	32%	6	32%
No Impact	5	11%	2	11%
Negative Impact	0	0%	0	0%
Solving Real-World Problems through the Design Process				
Very Positive	22	47%	13	68%
Somewhat Positive	22	47%	5	26%
No Impact	2	4%	1	5%
Negative Impact	1	2%	0	0%

Table 3. Project Impacts on Enculturation of Core Professional Values

	Alumni n	%	Students n	%
Leadership Skills				
Very Positive	19	40%	8	42%
Somewhat Positive	24	51%	11	58%
No Impact	4	9%	0	0%
Negative Impact	0	0%	0	0%
Ability to Collaborate with Others on a Team				
Very Positive	28	60%	14	74%
Somewhat Positive	17	36%	5	26%
No Impact	2	4%	0	0%
Negative Impact	0	0%	0	0%
Ability to See Others' Points of View				
Very Positive	22	47%	10	53%
Somewhat Positive	22	47%	9	47%
No Impact	3	6%	0	0%
Negative Impact	0	0%	0	0%
Appreciation for Broader Landscape of Intermountain West				
Very Positive	21	21%	12	63%
Somewhat Positive	19	60%	7	37%
No Impact	7	19%	0	0%
Negative Impact	0	0%	0	0%
Expanded Understanding of Other Utahn's Needs				
Yes	28	60%	17	89%
No	11	23%	1	5%
Unsure	8	17%	1	5%
Appreciation for Kinds of Problems Solved by Landscape Architects				
Yes	42	89%	18	95%
No	4	9%	0	0%
Unsure	1	2%	1	5%

To indicate projects' contribution toward employment, respondents were asked whether they included products generated through Extension-based design projects in their portfolios, and whether they thought these projects were helpful in obtaining an internship or job. Finally, respondents were asked whether projects were useful in connecting with program alumni and design professionals (Table 4). In addition to presenting the frequency of alumni and student responses using descriptive statistics, Welch's t-test was applied to determine statistical significance of differences between alumni and student responses.

Results and Discussion

Total survey respondents included 52 alumni and 20 students; between 46-51 alumni and 19-20 students completed each individual question in the survey. Respondents are described by alumni graduation decade and student cohorts in Table 1. Their responses are illustrated thematically by projects' impacts on core professional practice competencies (Table 2), core professional values (Table 3), and their use in professional networking and job placement (Table 4).

Impact on Selected Core Competencies

Respondents overwhelmingly reported that Extension-based community engagement design projects positively contributed to their proficiency in several core digital programs, ability to graphically communicate their ideas through drawing, communicate verbally through public speaking and presentation, and solve real-world

problems using the design process (Table 2). While these results are affirming for a program that prioritizes the practice-readiness of its graduates, results also corroborate the department's assumption that community engagement projects support the development of student competency in core technical programs, problem-solving, and communication. Results from the Welch's two sample t-test revealed that students assessed projects' contribution to skills in Sketchup and Adobe Creative Suite higher than alumni (Table 5). However, these programs were developed more recently than AutoCAD or GIS, and after many alumni respondents graduated from the program. Consequently, the difference between these scores likely reflects the evolution of technology used in image production.

Impact on Professional Values

Both alumni and students favorably rated projects' contributions to core professional values including the ability to exercise leadership skills, collaborate with others on a team, and see others' points of view. They also favorably rated projects' impact on their understanding of the needs of Utah residents who are different from themselves, appreciation for the Intermountain West region, and an expanded understanding of the kinds of problems that can be solved by their discipline (Table 3). Students assessed projects as more positively impacting their awareness of the range of problems that can be addressed by landscape architecture, their appreciation for the Intermountain West region, as well as understanding the needs and points of view of Utah residents different from themselves than alumni (Table 5).

Table 4. Project Impacts on Professional Networking and Job Placement				
	Alumni n	%	Students n	%
Useful in Connecting with Professionals				
Very Valuable	9	18%	4	20%
Moderately Valuable	21	42%	9	45%
Unsure	13	26%	5	25%
Not Valuable	7	14%	2	10%
Included in Portfolio				
Yes	39	76%	14	70%
No	12	24%	6	30%
Helpful in Gaining Employment				
Very Valuable	14	28%	4	21%
Moderately Valuable	20	40%	6	32%
Unsure	12	24%	9	47%
Not Valuable	4	8%	0	0%

Table 5. Summary of Mean Project Impact Scores for Program Alumni and Student Respondents

	Alumni n	Mean	Students n	Mean	t-test
Impact on Select Core Competencies					
AutoCAD	47	0.60 ^z	19	0.95 ^z	-1.81
GIS	45	0.64 ^z	19	0.63 ^z	0.07
Sketchup and Adobe Creative Suite	46	0.89 ^z	19	1.53 ^z	-3.42**
Graphic Communication through Sketching and Drawing	47	1.47 ^z	19	1.16 ^z	-0.74
Verbal Communication through Presentation and Public Speaking	47	1.38 ^z	19	1.47 ^z	-0.03
Solving Real-World Problems through the Design Process	47	1.32 ^z	19	1.63 ^z	-1.47
Impact on Professional Values					
Leadership Skills	47	1.32 ^z	19	1.42 ^z	-0.69
Ability to Collaborate in Teams	47	1.55 ^z	19	1.74 ^z	-1.37
Ability to See Others' Points of View	47	1.40 ^z	19	1.53 ^z	-0.83
Appreciation for Landscape of Intermountain West	47	1.30 ^z	19	1.63 ^z	-2.16*
Expanded Understanding of Other Utah's Needs	47	1.44 ^y	19	1.89 ^y	-2.47*
Appreciation for Kinds of Problems Solved by Landscape Architecture	47	1.83 ^y	19	2.00 ^y	-2.07*
Impact on Professional Networking and Employment					
Useful in Connecting with Professionals	50	1.64 ^y	20	1.75 ^y	-0.45
Included in Portfolio	51	0.76 ^x	20	0.70 ^x	0.53
Helpful in Gaining Employment	50	1.88 ^y	19	1.74 ^y	0.63
z Based upon coding scale of 2= Very Positive, 1= Somewhat Positive, 0= No Impact, -1=Negative Impact					
y Based upon coding scale of 2= Yes, 1= Unsure, 0= No Impact					
x Based upon coding scale of 1= Yes, 0= No					
* Values differed (P=0.05) using Welch's t-test, ** Values differed (P=0.001) using Welch's t-test.					

These results illustrate the department's success in acculturating its students to the predominant worldview of the profession of landscape architecture. Results also reinforce the strength of community engagement projects as opportunities for exposing students to a broad range of people of diverse backgrounds, learning from their experiential knowledge, and realizing common ground during the creative design process. Results also highlight the value of Extension as a conduit for connecting university design programs with unconventional design opportunities, beyond more traditional landscape architecture projects.

Results may be reflective of the experiences within different cultural and educational context experienced by current students from many alumni. Current students' social and educational development is within an era characterized by increased reliance on technology, social media

prevalence, and cultural polarization. As part of recent national conversations on mental health issues, bullying, and calls for empathy in educational settings, the contemporary generation of students may be more accustomed to open discussions around empathy and interpersonal interactions than previous generations, such the program's alumni. Relatedly, contemporary landscape architecture education emphasizes many issues beyond narrower interpretations of the profession's core competencies. As programs highlight empathetic processes, social responsibility, and inclusion of marginalized groups, current students may find issues of empathy and broadened perspectives more overtly discussed within courses and projects than alumni who graduated during the different social contexts of previous years.

Impacts on Networking, Portfolio Development, and Employment

Alumni and students both reported the utility of Extension-based community engagement projects in connecting them with professionals, development of their early career portfolio, and obtaining an internship or entry-level professional employment upon graduation.

While t-tests found no statistically significant difference between alumni and student assessments, many student respondents (in particular underclassmen and 1st-year graduate students) may not have yet constructed a comprehensive portfolio of their work or inserted these projects into their portfolio or used their work to obtain an internship. Results highlight an opportunity for further involvement of the program's alumni network within Extension-based design projects in order to strengthen opportunities to connect students, alumni professionals, and community partners around addressing design problems.

Summary

Meaningful involvement of clients and other end-users of designed places is regarded as integral to client-centered and publicly-minded design processes. Through its awareness of local issues and relationships with county-level Extension faculty and community partners, Extension landscape architecture is critical to bringing impactful projects into the department. These projects result in experiential learning opportunities for students, valuable design ideas for community partners, and often additional work for professional firms.

Alumni and current students both reported positive impacts on the development of their core professional competencies. Both groups also reported including work samples from these projects in their early professional portfolios, their contributory role in connecting students with alumni, and that they leveraged these projects for an internship or permanent employment position. Regarding professional values, students and alumni overwhelmingly reported the projects were instrumental in developing skills in communication, collaboration, leadership, and empathy. Limitations of this study includes its limited sample of students and alumni from a single department located at a university in Utah, which is a unique cultural context.

While Extension is integral to community engagement projects within USU's landscape architecture program, programs at other universities engage similar projects without Extension involvement. This study establishes a baseline for comparison of other programs and future student cohorts. Future research could expand on this study to include other Extension landscape architecture programs as well as programs that do not have Extension faculty but are still active in community engagement projects, to further illuminate the unique contribution of Extension to landscape architecture programs. Future research could also evaluate whether particular project typologies

and settings are correlated more strongly with Extension landscape architecture and community engagement. Lastly, future research could compare other Extension landscape architecture in other regions of the US, to determine whether there are regional and institutional differences in how design programs engage Extension, communities, and alumni.

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