

A Service Learning Approach to Community Engagement in a Study Abroad Design Course in Córdoba, Mexico

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Abstract

A community engagement study abroad course was conducted during the summer 2011 including landscape design and landscape architecture students from NC State University (NCSU) and students from the architecture school from the University of Veracruz, Córdoba (UVC), Mexico. Student reflections and a survey administered at the end of the course were used to evaluate students' perceptions of teaching strategies, affective learning and professional development. Negligible differences were found in student responses between undergraduate and graduate students and male and female students. Differences in responses to some questions were observed between NCSU and UVC students with UVC students ranking experiences slightly higher than NCSU. Students valued the participatory and group activities highest among the teaching strategies. Development of affective learning was observed by the reported increased sense of connection with each other's culture. Students reported their ability to apply community design process improved at the completion of the course and the value of applying their new professional skills in the real world was voiced in student's responses. This article explored and documented the impact of the course and provided an example by which to promote, develop and improve study abroad service learning courses in community engagement.

Introduction

Study abroad design studio courses offer students a valuable experience in which they gain skills that support their ability to work in today's diverse world. Fischer (2009) stated that the number of students who study outside their home countries is projected to grow

from three million in 2009 to eight million by 2025 and short-term study in exotic locations, internships, service projects and other variations on study abroad are increasingly common. Myers et al. (2010) reported that international study positively impacted overall intellectual development of design students and more specifically, students' development as designers. Study abroad courses grapple with a variety of ongoing challenges and opportunities such as the varying levels of bilingual proficiencies in the class and adaptation to the stresses of the unfamiliar aspects these courses such as home-stays.

Community engagement is an essential part of the design process that allows all participants to identify critical themes and design issues specific to the people and place. The nature of community engagement was described by Sanoff (2010) as "*a movement that cuts across traditional professional boundaries and cultures and whose roots lie in the idea of a participatory democracy so that all involved learn participatory skills and can effectively play a part in the making of the decisions that affect them.*" In a study of design education, Boyer and Mitgang (1996) found that 22% of students polled regretted not having learned how to deal better with people. Consequently, skills gained by students participating in community engagement courses are essential for them to be able to provide services to people and communities. Moreover, this interaction becomes the means by which community participants exercise their civic responsibility, Sanoff (2010).

Student learning is affected by the "real world" character of a service learning engagement studio course. Weimer (2002) explained that learning should

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be defined as a qualitative change in a person's way of seeing, experiencing, understanding and conceptualizing something in the real world. This definition values hands-on work with a real community in a study abroad studio setting. Service learning study abroad courses in design require students to develop proposals based on their interaction with community members in a real world that was previously foreign to them.

Bose (2007) asserted that the design studio is an ideal educational setting for critical inquiry. It includes the use of the design process that shares many of the hallmarks of critical inquiry including: goal directed problem solving, the ability to separate meaningful information from non-meaningful information and evaluation of possible solutions. Design students are trained to inventory, listen openly, analyze and communicate faithfully what they have discovered. The studio is a place that simulates a mentor/apprentice relationship in which students take responsibility for their learning experience during the progression of the course. Therefore, a study abroad community design studio provides a unique setting to explore and evaluate student critical inquiry.

The objective of this study is to measure the impact the five week community engagement studio course had on students relative to their impressions of teaching strategies, affective learning and professional development.

Methods

The community design study abroad studio course was conducted in Córdoba, Mexico at the University of Veracruz, Córdoba (UVC) College of Architecture. Córdoba, Mexico, founded in 1618, is one and a half hour drive due west of the port city of Veracruz and four hours east of Mexico City. It is a traditional gridded-street colonial city found in the hilly area near the volcano of Orizaba, the third highest mountain in North America. The current population is approximately 180,000. Main economic activities include agriculture and ranching, with sugar milling and coffee processing as the main industries. Weather is humid and mild with average daily temperatures of about 20° C (68° F). Vehicular and pedestrian experiences in the historic core of Córdoba have not evolved to accommodate the scale or complexity of today's needs. Córdoba is addressing the same problems in place making and safe vibrant experiences in their urban environments as many other cities around the world.

Four landscape design and landscape architecture students from North Carolina State University (NCSU) traveled in June 2011 to the UVC and were joined in the course by seven architecture UVC students. Males made up 63% of the group and females 36%. NCSU students

had traveled abroad and none of the UVC students had been abroad prior to this course. Students included seven (64%) graduate students and four (36%) undergraduate students. There were no language prerequisites for the course.

Instructors included J.T. Sherk, Assistant Professor, NCSU Horticultural Science, H. Sanoff, Professor Emeritus from the College of Design at NCSU and R. Garzón, co-Professor and architect with a master of urban design, with support from Dr. Beatriz Rodríguez, Vice-rector at the Orizaba-Córdoba Region UVC. Students and faculty from NCSU were paired with classmates from UVC and accommodated by home-stay room and board. The course met Monday through Friday, from 10:00 am to 1:00pm and 3:00pm to 6:00pm. Field trips were organized on weekends to visit cultural sites that included Mexico City, the Teotihuacán pyramids, Oaxaca and some nearby towns showcasing relevant urban projects.

The primary goal was training students in the development of design techniques that empower communities. The course in community design involved service learning design projects. Students addressed urban design while assessing cultural/social and spatial needs of the community members. Students were provided articles to read on community engagement prior to departure. Then, during the first three days in Cordoba, Professor Sanoff conducted an engagement "boot camp." The objective was to teach students to develop "environmental games" or workshop activities that would help community members focus on a set of critical themes relating to their unique place and then enabling community residents to make informed choices for the improvement of their environment. (Sanoff, 1979)

Seven potential project sites were identified by the instructors. Students were asked to develop a list of criteria to be used to evaluate each site for selection. Students used a democratic process voicing all opinions to identify criteria for assessment, evaluate sites and then narrow the list to two projects. *Tratados de Córdoba Boulevard* leading to *Quinto Centenario Park* and the *Pitayitas Neighborhood* were selected as class projects. First, students were divided into two groups. One group addressed the entrance to the city, the *Tratados de Córdoba Boulevard* with the *Quinto Centenario Park* found at the end of the boulevard. The other group worked on the *Pitayitas Neighborhood*, an urban zone that is part of the historic core of Córdoba. Second, students prepared community workshops by developing workshop activities and preparing a site inventory and analysis presentation. Third, students delivered invitations to the workshops directly to local residents providing an opportunity for students to make direct connections with the community.

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Students worked with community members during the workshop to gather the information necessary to identify needs and concerns using activities that students had devised. These activities afforded the facilitator/students and community participants to take part in discussions and presentations, sharing ideas and questions in order to deepen their understanding of themselves and each other and to reach consensus.

Students evaluated the community's input and used it to identify important critical issues that became program themes for their designs. The Pitayitas Neighborhood group identified a need to improve connectivity by addressing streetscapes, including the need for comfortable, safe sidewalks. Also, they identified the need to improve public and vacant spaces and address the zone's visual appearance. The *Tratados de Córdoba* Boulevard and Quinto Centenario Park group focused their community input into a program that addressed the need for a welcoming, intriguing, improved environment that conveyed a sense of the city's history and distinctiveness. Particular topics identified were safety, comfort, traffic control and civic identity. Students addressed common urban issues in the design proposals that occur globally such as safe and comfortable sidewalks, urban green areas, successful urban tree plantings, storm water management strategies, parking and transit by bicycle and motor vehicle, art and development areas. This process revealed a hierarchy of important topics that reflected the community and designer's values.

Students prepared an hour-long bilingual presentation for the stakeholders, including workshop participants from the community, leaders in the public and private sectors, local news media and the academic community at the UVC School of Architecture. The presentations included programmatic proposals that reflected the community workshop input and conceptual designs that were represented in plans, sections and sketches that were presented as possible future scenarios.

Methods of Assessment

Students' perspectives on teaching methods and experiences were assessed using a survey. Students were asked to rate questions using a five-level scale with 1 as a lowest value and 5 as a highest value. Also, students were asked to provide answers to open-ended questions. Students were asked to rank their understanding of how their skills transformed by the end of the course. Survey questions were organized into categories addressing teaching strategies, professional development and their sense of connection to the place and people (Table 1).

Survey results were analyzed using SAS (Version 9 Statistical Analysis System). Differences between the student groups (NCSU and UVC) were compared using a general linear model procedure and statistical differences tested at $P = 0.05$. Answers to open-ended questions were organized into categories and descriptive statistics including frequency counts and means were compiled. Students were asked to write a reflection narrative on their experiences at the conclusion of the course. Writings were examined for evidence of impact to their development.

Table 1. Student Survey Questions

Teaching Strategies:

1. Rate the list of teaching strategies (Table 2)*
2. List which one of the experiences in the course you found most interesting (Table 3)
3. List which one of the experiences in the course you found least interesting (Table 4)
4. List any topics you would like to learn more about in the course (Table 5)
5. Rate the course assignments*

Professional Development:

1. Rate your confidence in developing design games relative to how they helped community focus on a particular set of concepts (Table 6)*
2. Rate your confidence in developing design games relative to how they helped community to discover an appreciation for their personal similarities and differences*
3. Rate how the course contributed to your professional development *
4. Rate how your new skills helped you relate to real world issues addressed in the course (Table 7)*

Connections:

1. Rate how the process of community design and service learning enhanced your understanding of social and cultural characteristics*
2. Rate your sense of empathy and/or connection with the community (Table 8)*
3. List how unique characteristics deepened your understanding and helped to make connections to the place and the people

Transformation:

1. Rate your satisfaction in your ability to apply the community design process before and after the course (Table 9)*

*When asked to rate survey question, students scored answers using a five-level

Results

Students rated participatory and group activities higher than site visits and weekend trips and rated the final presentation as the highest, but base plan development as the lowest (Table 2). UVC students rated some strategies significantly higher than the NCSU students, specifically in-class work time, verbal feedback reviews, course lectures, assignments, visiting lecturers, pin-up reviews and base plan development.

Students were asked which experiences they found most interesting. Students most often mentioned group work in this open-ended question, as the most interesting followed by reviews, community workshops and weekend travel. It is interesting to note that the "language challenge" was mentioned in 5% of the experiences as the most interesting part of the course (Table 3).

Students were asked which experiences they found least interesting. The most frequent response was "nothing" (Table 4). Producing PowerPoint® presentations was ranked as the second least interesting activity. It is notable that the "language challenge" was mentioned as a least interesting part in 8% of the experiences listed.

Students were asked to list other topics that they would have liked to learn more about. Mentioned most frequently was an interest in learning more about the local planting material (40%) (Table 5). Also, mentioned at lower frequencies, were local urban design, topography, vehicular circulation and local history amongst others.

Workshop activities, inventory and analysis, design development, final report and the blog were all rated highly from (4.0) to (4.6) in the evaluation of the course exercises. The blog was regarded as the highest (4.6) and final report as the lowest (4.0). UVC students rated course exercises higher than the NCSU students with significant differences occurring in the categories of journal writing and design development (data not shown).

Survey responses indicated that all students reported greater confidence in applying the community design process at the completion of the course. Students rated how the course contributed to their professional development with, a unanimous high rating of (5.0) (data not shown).

Students were asked about their confidence in the validity of how the workshop activities helped the community focus on a set of particular concepts (Table 6). The average response (4.7), suggests that there was a high confidence in the effectiveness of the workshop activities, with little difference between any of the groups. Similarly, all students rated highly (4.5) their confidence that the design activities helped the community discover an appreciation for their personal differences and similarities (Table 6). Further, in the open ended question most of the students mentioned (46%) that the proposed design projects were based on community input. They also mentioned (31%) that community engagement was integral to the design process (data not shown).

Students were asked if the course activities and development of new skills (Table 7) would help them relate to real world issues. They claimed that learning more of each other's language and translating the design program into physical expressions were the top new skills mentioned (17%) amongst others (Table 7).

Students' responses illustrate evidence of their connections with the community, the place and their classmates. Students rated how the process of community design and service learning enhanced their understanding of social/cultural characteristics of the community. The cultural/social characteristics that enhanced the student's experiences were rated highly with urban design at (4.5), art (4.4), cuisine (4.3), music (4.0) and dance with the lowest rating at (3.8). No significant differences were noted between student groups (data not shown).

All students rated the effect of the course on their sense of empathy or connection to the community as

being high (4.8). Students were asked in the open-ended questions, to list things that helped them feel more connected to the place and the people. Visiting different sites and site analysis were mentioned in 38% of the comments as helping students deepen connections. Also developing friendships, the community design methodology and community workshops were mentioned as helpful (Table 8).

Students were asked to rate their satisfaction in their ability to apply the community design process before and after the course. Students' average response before the course was low, (1.7). Average rating was much higher for all students (4.6) (Table 9) as a result of participating in this course. There were no significant differences between the student groups.

Discussion

Students studying abroad report positive experiences. Nassar (2004) reported that students who participated in a three week study abroad landscape program responded as being very satisfied and perceived the experience to have had a very positive impact on their future academic

Table 2. Mean Scores from Student Survey Evaluation of the Teaching Strategies Completed at the End of the Course

	Average ^z	UVC	NCSU	UVC vs. NCSU ^y
Site visits	4.8	5	4.5	NS
Weekend trips	4.8	4.6	5	NS
Final presentation	4.8	5	4.5	NS
In-class work time	4.6	5	4	*
Group work	4.5	4.9	3.8	NS
Verbal feedback as reviews	4.5	5	3.5	*
Community workshops	4.4	4.7	3.8	NS
Course lectures	4.3	4.7	3.5	*
Field discussions	4.2	4.4	3.8	NS
Assignments	4.2	4.9	3	*
Visiting lecturers	4	4.6	3	*
Pin up reviews	3.9	4.9	2.3	*
Base plan development	3.2	4.1	1.5	*

^zAverage rating score for University of Veracruz Cordoba (UVC) and NC State University (NCSU) students using a 1-5 scale (with 1 as lowest and 5 as highest)

^yNS = no significant difference; * signifies significant difference at P= 0.05

Table 3. Percentage of Course Experiences Students Found Most Interesting

Most interesting experiences mentioned by students	Percentage of Times ^z
Group work	25%
Reviews	10%
Community workshops	10%
Interactions with community	10%
Weekend trips	10%
Development of new friendships	5%
Site visits	5%
Design development in short time	5%
Proposal graphics	5%
Presentation	5%
Development of design activities	5%
Language challenge	5%

^zValues are the average times categories were mentioned and expressed as a percentage of the total number of comments

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Table 4. Percentage of Course Experiences Students Found Least Interesting

Least interesting experiences mentioned by students	Percentage of Times ^z
Nothing	31%
PowerPoint® production	15%
Workshop design activities	8%
Chaos before presentation	8%
How group reached consensus	8%
Lack of effort by some members	8%
Language challenge	8%

^zValues are the average times categories were mentioned and expressed as a percentage of the total number of comments

Table 5. Results to: List Any Topics You Would Like to Learn More about in the Course

	Percentage of Times ^z
Plant material/aesthetic	40%
Local urban design	15%
Topography	10%
Vehicular circulation	10%
Local history	10%
Local decision making process	5%
Cultural values	5%
Local design process	5%

^zValues are the average times categories were mentioned and expressed as a percentage of the total number of comments

Table 6. Mean Scores from Student Survey Evaluating Their Confidence in How the Workshop Activities Helped Community

	Average ^z
Helped community focus on a particular set of concepts	4.7
Helped to discover an appreciation for their personal similarities and differences	4.5

1-5 scale (1 as lowest and 5 as highest)

^zAverage rating score for University of Veracruz Cordoba (UVC) and NC State University.

endeavors, personal growth, global understanding and awareness. Similarly, students in this five-week Córdoba program described positive outcomes. The service learning, community engagement, studio-setting aspects of the Córdoba study abroad program allowed for evaluations that explicitly addressed the opinions of students' perceptions of teaching strategies, affective learning and professional and personal development in a global environment.

Relative to teaching strategies, students highly valued assignments that were completed in groups. In addition, the exercises that promoted self - directed learning that required an open attitude should be incorporated into course as provided in the following students' narratives. These demonstrate how these approaches were perceived:

"...freedom of this trip also made for a really wonderful time, we were basically allowed to choose our projects and choose the way we learned about our surroundings and the way we integrated them."

"I very much enjoyed defining the selection criteria, also as a course and then using the criteria to whittle down our choice"

Table 7. Percentage of New Skills Addressed in the Course That Would Help the Students Relate to Real World Issues

	Percentage of Times ^z
Learning each other's language	17%
Translating course into physical form	17%
Using engagement methodology	11%
Interaction in workshop	11%
Potential of improvement of people's lives	11%
Organize the most important issues for community	11%
AutoCAD Skills	11%
Flexibility	6%
Asking the right questions	6%

^zValues are the average times categories were mentioned and expressed as a percentage of the total number of comments

Table 8. Percentage of Unique Characteristics That Helped the Students Deepen Their Understanding and to Make Connections to Place and the People

	Percentage of Times ^z
Sites visits & analysis	38%
Developing friendships	25%
Community design methodology	19%
Community workshops	13%
Traveling to other sites	6%

^zValues are the average times categories were mentioned and expressed as a percentage of the total number of comments

Table 9. Mean Scores from Student Survey Evaluation of Their Satisfaction in Their Ability to Apply Community Design Process Completed at the End of the Course

	Average ^z
before	1.7
after	4.6

1-5 scale (1 as lowest and 5 as highest)

^zAverage rating score for University of Veracruz Cordoba (UVC) and NC State University. There were no differences in responses based on nationality, class rank or gender; therefore, data were pooled.

"I thought yes, I am going to "dance" this summer by taking advantage of the opportunities and challenges placed in my path, in whatever forms they may take."

Concerning empathy and connections, results demonstrate that activities developing the capacity to recognize the feelings experienced by others help to promote growth in student's affective learning realm. Activities should be designed to strengthen their ability to contrast different values, resolve conflicts between them and create unique new value systems. An excerpt from a student's reflection narrative demonstrated new awareness and connection:

"...am dumbfounded to find out just how much my Mexican family enjoys each other's company... I veer on the edge of jealousy at times because of how beautiful this showcase of humanity is... It has been a pleasure to have witnessed this ceremony and speculate on the implications it has for daily life here in Córdoba... They have shown us things no guidebook would be able to explain; in fact it did not, since there was barely a mention of this town in books"

Student responses confirmed that the community engagement process in the studio setting represented real-world practices. This experience afforded students the

opportunity to deepen and broaden their development as professionals. Workshops with the community enriched students' connection to the local people and they experienced hands-on applications of skills introduced in the course. Excerpts from some of the student's narratives illustrated growth toward the professional world and increasing professional global awareness:

"The process was short and sweet it felt like we got thrown off the design games cliff but it turns out we had a parachute of knowledge to gently guide us to the ground..."

"It (community workshop) allowed us to cut through some design decisions and it felt like the community helped speed up the design process."

"...engagement with community seemed to give them (community) a place in this new developing world that is quickly changing around them"

"In the end our team managed to come out with a great product that I am especially happy with and I am proud to have been a part of this experience."

The approach of "improvise, adapt and overcome" became the course motto. One of the challenges and opportunities was the language barrier as reflected in the students' responses. This provided a challenge to be overcome through a gradual transformation. Students in both groups felt unable to participate initially, but varying levels of bilingual skills were used to contribute to bridging information between the primarily Spanish speaking UVC students and the primarily English speaking NCSU students. This attitude was essential to the success of information transfer amongst students as well as between students and the community. Extensive use of "Google® Translate," a free web-based translation service and drawings became tools for communication.

Both the UVC and the NCSU students claimed to have transformed during the course at many levels. These are reflection narratives describing ability to revise judgments and change behavior in light of new evidence resulting in valuing of people and place:

"... I would just need to dance to a different melody, one I wasn't quite used to. I had nothing to lose and I only needed to following the steps of my teachers...It was at this (a) gathering, when I truly felt comfortable in this new country, culture and with new friends, when I completely broke out of my shell...In order to have a worthwhile and full experience, I had to simply put myself out there."

"How do you tell someone they need to plant street trees when their house straight pipes sewage into a river? But here I must regroup and dig deep to find my role as a designer. I know that I cannot solve all the problems. I must avoid becoming overwhelmed by the problems and try to understand what I can ..."

Survey results and student narratives illustrate how goals for the course were met. They revealed evidence of students' capacity to be open to transformation, confirming an increase in empathy and connection and demonstrating an enhancement in development of students toward global professionalism. Concurrently, this evaluation helped to expose areas for potential improvement to the course such as including more information on urban design in particular using plant material as design elements. Students' responses revealed many similarities and some slight differences in the way each group of students perceived the value of the course. There were significant differences in responses to some questions between NCSU and UVC students with UVC students ranking experiences slightly higher than NCSU. This interesting result is worthy of further examination. However, the study abroad course provided students and faculty the ability to gain insights into cross cultural issues and increased their cultural literacy. Although the sample size was small, the differences observed in this study provide guidance for further evaluation of these themes.

Summary

This study provided the opportunity to examine how a collaborative, study abroad setting influenced the learning experience and attempted to provide evidence that supports the concept that it is necessary to create ever improved cross-cultural service learning academic exchange experiences. These academic experiences offer a laboratory for exploring and developing ways for a study abroad community engagement studio to enrich students' development. The educational and professional value of a meaningful, socially active study abroad learning experience lies in the opportunity for participants to grow in the context of a real-world experience that promotes personal and interpersonal discovery. Participating students exhibited the ability to overcome barriers and step out of comfort zones throughout this study abroad course. They demonstrated expansion in maturity in Bloom's affective learning domains (Bloom et al., 1973) as they learned to be receptive to a new place, responsive throughout the design process, expressive of their democratic valuing of the people and place while making connections compassionately in a new global context. Finally, students internalized experiences by exhibiting a transformation of gained understanding. Such experiences present students with the opportunity to become sensitive to cultures and people different from their own and to apply relevant critical skills that convey the importance of the community's distinctive voice in confronting their unique issues. Students participating in this course developed a deeper understanding of their

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own transformation and a more expansive view of the global condition and the role their discipline plays.

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