



Impacting Cultural Trends in Childcare and Older Adult Living Situations through Service Learning in Beijing, China Using An Interdisciplinary Design Approach

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Partnerships: A Journal of Service Learning & Civic Engagement.
Vol. 2, No. 2, Fall 2011

Abstract

China is experiencing an aging “boom” that is challenging smaller numbers of family members to provide care for an increasing number of older adults. This international project sought to contribute to the development of insightful alternatives for families who are challenged to provide care for older adults and children. To that end, a group of students was invited to engage in an interdisciplinary, immersive service-learning project to design a combined nursing home, adult day program, and child day care center located in Beijing. Students were interior designers from the United States and architectural students from Beijing. They were immersed in another culture, designed using new cultural norms and historic elements, and observed the impact of social and political/government policy on modern building practices. Student evaluations were compared with service learning experiences of other university students. Overwhelmingly, students who studied in China indicated that completion of this service-learning project pertained to their academic goals and that they would complete another project in the future.

Service-learning is a form of project-based learning where academic goals are achieved through community service, and students have the opportunity to reflect on that experience. Research shows that integrating service-learning projects in educational settings can be beneficial. Evidence has shown that most students feel that integrating service-learning into a classroom setting increased their understanding of the subject matter and professional values (Eyles, Giles, & Braxton, 1997). Faculty members from across the country believe that this type of learning has the potential to enhance classroom performance and participation, and makes teaching more enjoyable (Bringle, 1996). Many projects are able to enhance or integrate leadership, interaction, and collaboration skills while incorporating cross-cultural facets (Eyles, Giles, & Braxton, 1997).

Many studies have been conducted at the college and university level. More specifically, Georgetown University, Ohio State University, and the University of Alabama have conducted research pertaining to service-learning. Administration at Georgetown University is demonstrating one way colleges can creatively implement service-learning into a university curriculum by making service-learning projects available as a 4th credit option. If students decide to complete a project with professor approval, they can receive an additional credit for their class (Bringle & Hatcher, 1996). Ohio State's College of Medicine developed a Medical Humanities and Behavioral Sciences (MHBS) course designed to be a comprehensive approach to social and behavioral science education applicable to the practice of medicine. Research was conducted for twenty years on this "Community Program". In the past three academic school years, the participation of this program has increased 62%. Faculty and students have been pleased with the overall experience, and students agreed that they would complete another project in the future (Post, 2009).

In addition, students from the International Engineering Program at the University of Alabama participated in a global service-learning project. Students worked on water percolation, topographic surveys, the installation of village lights and a latrine, and the installation of 18 solar panels in three villages. On a five point scale, students rated their experience a 4.8 (Johnson, 2008). This evidence shows another example of how integrating service-learning programs into educational settings has the potential to be a positive experience and to benefit a global neighbor. Participation in global partnerships can serve to breakdown cross-cultural and geographic barriers (Asojo, 2007).

Today, a number of schools are attempting to determine whether service-learning should be implemented as a school requirement (Eyler, Giles & Braxton, 1997). While research conducted at CMU compliments research performed at other universities, this study does not seek to determine whether or not it should be a mandatory university requirement. Instead, it seeks to conclude what students gained, if anything, from their service-learning experience relative to their academic careers, and whether they have an interest in working on future service-learning activities. Specifically, researchers hypothesized that at least 75% of students who had completed a service-learning project at CMU would agree that they learned information that

pertained to their academic goals, and at least 75% of those same students would agree that they would complete another project in the future.

Gestalt Theory

Gestalt psychologists maintain that the most important principle guiding their work is that objects, persons, and environmental settings are perceived as a whole, which is greater than the sum of its parts (Veitch & Arkkelin, 1995). This fundamental idea has broad application to various aspects of this service-learning experience in that 1) diverse disciplines worked together to create a more holistic solution to a design project than either discipline would have completed alone; 2) a multi-generational care approach for older adults and children provided a richer context for long-term quality of life issues than would have been possible if the solution for each generation was separately addressed; and 3) diverse student cultures provided a broader approach to problem solving as a result of more than one societal influence. In order to effectively design in this diverse world, students need to have an understanding of the cultural, social, economic, and political issues affecting the people that they are designing for. Without any one of these critical components, designed solutions would be lacking a critical component to the development of an integrative, holistic solution. Background information on Chinese design precedents were introduced prior to departure to Beijing to assist interior design students in developing an enhanced international perspective that includes sensitivity to accessible, affordable, sustainable, and culturally-sensitive housing norms.

The Project

The need for information about older adults and children is critical; population aging has become the preeminent global demographic phenomenon. While the United States baby boomers are facing retirement (Gist & Hetzel, 2004), China's elderly population is also growing at one of the fastest rates ever recorded (Zhan, Liu & Guan, 2006). Dramatic fertility decline and increased longevity is causing a demographic shift in China that will challenge the traditional Chinese Confucius family-based elder care system (Lee, & Kwok, 2006; Giles & Mu, 2007; Zhan & Montgomery, 2005). The historical precedent of care of older adults and children in China demonstrates the uniqueness of this approach, in this location, at this time.

To this end, a nursing home director was interviewed by faculty/students to determine the programmatic needs related to providing intergenerational care. Junior level Interior Design students enrolled in IND 339: Studio III-Design for Special User Groups from the United States had the opportunity to collaborate with architecture students from Northern China University of Technology (NCUT) located in Beijing, China. They worked side-by-side on the collaborative development of the architecture and interiors to develop an environment that was sensitive to older adults and children, with an emphasis on local (Beijing) codes, universal design, site considerations, Feng Shui principles, contemporary Asian construction detailing, and conception of space e.g. downscaling spacious Western room sizes into more compact Chinese space (bedroom sizes, fewer personal possessions, and smaller anthropometrics and

accessibility standards). One critical Feng Shui design principle focuses on the need for southern exposure for people within living/working environments. It was also important to provide access to green spaces, and to incorporate sustainable building practices.

Filial piety has long been viewed as an indispensable building block of the Confucian Chinese familial system and embraces the tradition of grown children caring for their elders e.g. parents and grandparents until they die. During the pre-industrial period, filial piety was considered a give-and-take practice. While the elderly would receive emotional and physical support, the younger generation reaped the benefits of housing and income from the land and businesses which served as the family's source of earnings. Hence, both parties were dependent upon each other (Lam, 2006). Obligations to older adults have included assistance with daily activities, maintaining contact, providing financial support, being respectful and obedient, listening to their problems, caring for them when they are ill, producing a male heir, living with the parent[s], and promoting the public prestige of their ancestors (Cheng & Chan, 2006).

As the baby boomers of China are approaching retirement age, it is likely that the filial piety care system will not provide for the full needs of older adults. With the one child policy having been implemented for one generation, many retirees will have one adult child to rely on for support/care. In addition, current trends show that more Chinese women have access to higher education, and therefore are becoming more career-oriented than at any time in their history. Consequently, the expectation by dependent parents and grandparents that daughters and daughter-in-laws will provide for their care is likely to shift. In addition, current trends also show an increasing number of young adults focusing their career efforts internationally. Therefore, as the number of older adults increases, while the number of caregivers shrinks, an alternative means of elder care outside of the home must be examined.

Contrasted with the changing societal needs for older adults in China are the simultaneous changing trends relative to children. Historically, school age children attend school during the same hours that their parents work. However, there has been no public day care provided for children who have not reached kindergarten. Their personal needs have been provided within the home by parents and grandparents. This has become increasingly the norm as more young children initially remain with grandparents while parents who have moved internationally are establishing their careers. Many children are reunited with their parents in their toddler/preschool years, although individual situations vary. Because of this, there is an increasing need to provide public support options for children as well. Therefore, the ultimate objective included a more global look at successful models and experiences of elder and child care, and to integrate these successes into the changing demographic climate and practical demands of modern, Chinese and American systems.

Class Organization

Nine U.S. CMU students enrolled in Studio III: Special User Groups (IND 339) spent five days on their own campus learning about universal design, building and barrier free codes, and

precedents of Chinese architecture. More specifically, information was presented on imperial, religious, and vernacular architecture types, the private and imperial traditional gardens, a variety of furniture and decoration styles, and the contradictions of the contemporary Chinese architecture with the international approach. For the second and third weeks, CMU students and faculty lived on the campus of the Northern China University of Technology (NCUT), where the U.S. students worked collaboratively with nineteen Chinese architecture students. Four groups of seven were formed among the two universities (three groups of two CMU students and five NCUT students, and one group of three CMU students and four NCUT students).

This specific project required students to design an intergenerational center complete with independent living, assisted living, nursing home facilities, kindergarten classrooms, and a daycare for both older adults and children using the Metric system. Chinese characteristics were to be used in the design of the center. An actual client (director of a Beijing nursing home) was interviewed to develop project criteria based on her needs, as well as to provide the students with a live interview experience. Following the meeting, faculty members jointly wrote up the project requirements.

Initially, each student developed their conceptual ideas, which were presented to their team members. One design was selected for development by the team over the duration of the remaining ten days, where team collaboration occurred on schematic sketches, renderings, material selections, sample boards, and two- and three-dimensional models, as shown in Figures 1-4.



Figure 1: Green Acres Nursing Home



Figure 2: Conceptual Model



Figure 3: Team Production Time



Figure 4: Presentation to Committee

Students presented their final design solutions to a committee from the nursing home that consisted of the director, residents, and staff members. One project was selected by the committee for future development, although all design solutions had highly innovative, successful elements incorporated into the final solutions. The recurring design elements incorporated in all solutions included sustainability principles such as green space, central courtyards, roof gardens, southern exposure for private residences to promote positive light patterns throughout the day/night; walking paths; small residential environments that opened into shared public spaces such as sitting areas; barrier-free accessible spaces; and contemporary Asian architectural influences, as shown in Figure 5.



Figure 5: Project model and CAD drawings of the Beijing Facility

Upon their return to the U.S., the CMU students had five more days to complete the remaining elements of the intergenerational center through the design development and contract document's phases.

Feedback from both the CMU students/faculty and the NCUT students/faculty was overwhelmingly positive. The rich relationships that developed are best summed up by one comment from a NCUT student who said, "I wish that our children could marry, and that we could grow old together in the facility that we designed." The mutual friendships that developed are shown in Figure 6 by diverse members of three teams.



Figure 6: Images of lifelong relationships that developed throughout this experience

Method

Sample: The sample was comprised of U.S. university students (N = 108), seven of whom studied abroad in Beijing and 100 who were randomly selected on the U.S. university campus. Of the nine I.D. students, one was male. All were college juniors. The remaining 100 students were from multiple majors, and their academic standing ranged from freshmen to graduate students.

Procedure

The study abroad students (n = 9) were surveyed in class. The other 100 students were recruited as every third student entering the campus University Center (U.C.) was asked if they had participated in a service-learning experience as a required part of a course, and whether they were willing to complete a survey on service-learning. If they answered "no", no survey was administered; if they answered "yes," the instrument was completed. This process continued until 100 surveys were completed. Both the study abroad students and the random sample from the University Center took approximately three minutes to complete. IRB approval was received. Participation was voluntary. No identification data was collected.

Instrument

The 9-item survey asked students to indicate their major area of study, specify whether their experience was a course requirement or voluntary, and to project whether they would participate in future service learning projects. Further, they were asked if the experience had moved them toward their academic goals and if service learning should be part of more courses. Finally they were asked to indicate whether the experience had helped to "clarify my major," "clarify my career choice," exposed me to new career opportunities," "had no impact on my career plans," or "other."

Analyses

Analyses are presented in frequencies and percents.

Results

For the 100 randomly selected students, seven popular categories for service-learning were presented (Figure 7). Students selected the category that most closely pertained to the academic background of their service-learning experience. Figure 7 shows the percent distribution of different categories from one hundred university students, with Education being the most highly represented (40%).

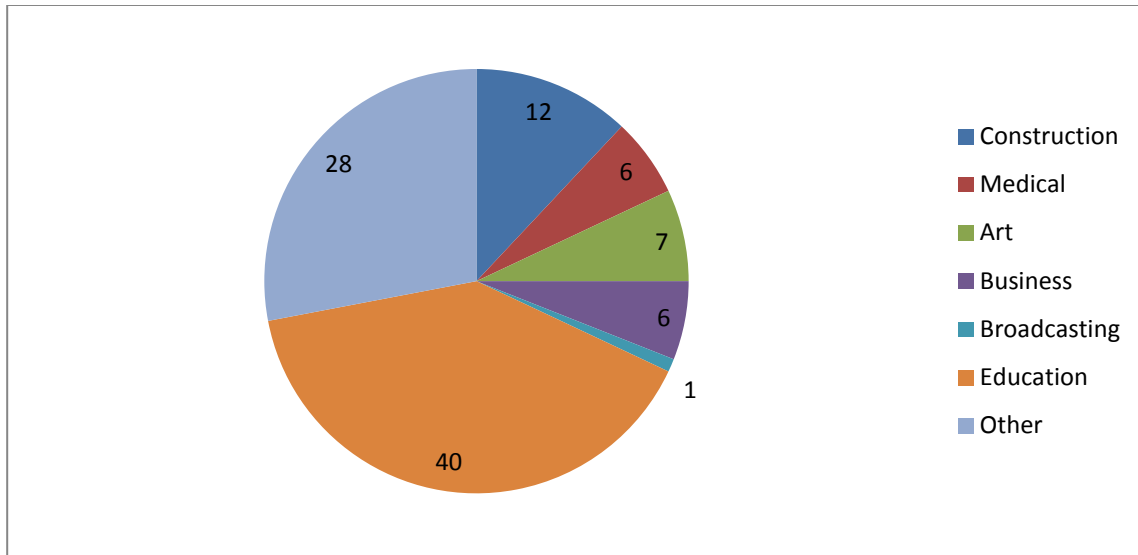


Figure 7: Service-Learning Project Categories for 100 Student Participants (by percentage)

Table 1 illustrates the number of students who completed their service-learning project on a voluntary basis versus those who completed it as a course requirement. All interior design students and 76% of the randomly selected CMU students participated voluntarily in their service-learning experience.

Table 1: Voluntary vs. Mandatory Service-Learning Experience

Interior Design Students (Voluntary)	CMU Students (Voluntary)	CMU Students (Non-Voluntary)
8	76	24

When students were asked whether or not they would voluntarily complete another service-learning project in the future, the eight interior design students who responded to the follow-up survey and 91 of the 100 CMU students indicated a positive response, as shown in Table 2.

Table 2: Voluntary Completion of Future Service-Learning Project

I.D. Students (Yes)	I.D. Students (No)	Random CMU Participants (Yes)	Random CMU Participants (No)
8	0	91	9

Table 3 illustrates that all Interior Design students and 94 of the diverse CMU students perceived that their service-learning project helped them gain new information pertinent to their academic goals.

Table 3: Service-Learning Pertinence to Academic Goals

I.D. Students (Did Learn)	I.D. Students (Did not learn)	CMU Participants (Did learn)	CMU Participants (Did not learn)
8	0	94	6

Students clarified whether or not they would enroll in a course if it included a mandatory service-learning component. Table 4 illustrates that all interior design students and 70% of the diverse CMU students would be more likely to enroll in a course that included a service-learning component.

Table 4: Likelihood of Enrolling in Courses Integrating Service-Learning Components

I.D. Students (Yes)	I.D. Students (No)	CMU Participants (Yes)	CMU Participants (No)
8	0	70	30

Seventy-five percent of interior design students and 96% of the second student group slightly or strongly agreed that CMU should integrate more service-learning projects into coursework requirements, as shown in Table 5.

Table 5: CMU Should Adopt Service-Learning into Coursework Requirements

I.D. Students (Agree) (Disagree)	I.D. Students	CMU Participants (Agree)	CMU Participants (Disagree)
6 (75%)	2 (25%)	96	4

As shown in Table 6, the majority of students felt that their service-learning experience assisted them in clarifying their choice of major, and career choice/opportunities. Eighty-seven percent of the interior design students, who worked side-by-side in Beijing with architecture students, indicated that their service-learning experience exposed them to new career opportunities, while 27% of the second CMU student group reported exposure to new career opportunities.

Table 6: Diverse Impact of Service-Learning

I.D. Students				CMU Participants			
Clarified Major	Clarified Career Choice	Exposed to new Career Oppor.	No Impact on Major or Career	Clarified Major	Clarified Career Choice	Exposed to new Career Oppor.	No Impact on Major or Career
1 (12%)	3 (37%)	7 (87%)	0	9	37	27	27

Summary of Findings

Service-learning is a form of project-based learning where academic goals are achieved through community service and students have the opportunity to reflect on that experience. This study researched the perception of service-learning outcomes on two groups of college students attending CMU, and was gauged by whether or not students felt the experience was beneficial to their educational goals. The first set of participants included the responses of eight students who studied abroad in Beijing. Their responses were compared to a second set of participants consisting of 100 randomly selected students from CMU, who had a wide range of majors. Both groups were asked a series of nine questions related to their service-learning

experience. It was hypothesized that at least 75% of students who had completed a service-learning project would agree that they learned information that will help them in their professional careers, and at least 75% of those same students would agree that they would complete another project in the future. The research showed support for both of these hypotheses for both groups. All interior design students and 94% of the diverse 100 CMU students who had completed a service-learning project agreed that they learned information that was pertinent to their academic goals. In addition, all interior design students and 91% of the people who completed the survey would voluntarily complete another service-learning project in the future even though only 75% of the larger CMU sample originally completed their project on a voluntary basis.

Discussion

In initial findings from Eyler, Giles, and Braxton (1997), research was compiled from over 1500 students at 20 colleges including six private universities, five small colleges, and eight public universities. Their findings showed that over seventy percent of students agreed that integrating service-learning into a classroom setting increased their understanding of the subject matter, which are in line with findings of this study. Of the Interior Design students, 100% believed that they learned new information pertinent to their academic goals as shown in Table 3, while 94% of the randomly selected CMU students believed that they learned new information pertinent to their academic goals. Only six out of the larger 100 CMU group of respondents felt that they had not learned valuable information related to their course of study.

Additional colleges have completed research on service-learning in the past. In the mid-1980's, Ohio State's College of Medicine developed a Medical Humanities and Behavioral Sciences (MHBS) course designed to be a comprehensive approach to social and behavioral science education applicable to the practice of medicine. Research was conducted for twenty years on this Community Program, and in the past three academic school years, the participation in this program has increased 62%. Faculty and students have been pleased with the overall experience, and students agreed that they would complete another project in the future (Post, 2009). The growing numbers of participants in this program show that students are increasingly eager to engage in a program that integrates a service-learning component. In the larger CMU group, 76% of the initial service-learning projects were completed on a voluntary basis while 24% were a mandatory course requirement. In the follow-up survey, all interior design students and 91% of the larger CMU group indicated that they would voluntarily complete a future service-learning project, demonstrating that an increasing number of students are finding value in these experiences (as shown in Table 1). Specific reflection comments from interior design students showed their appreciation of the opportunity to complete a service learning experience with collegiate students from another discipline, and from their ability to apply increased intellectual and practical skills throughout their experience.

While more students are signing up for the Community Program at Ohio State's College of Medicine, students at CMU show similar interests. Research from this study indicates that all interior design students and 70% of the larger CMU group of respondents would be more likely to enroll in a course if service-learning was a component of the class, as shown in Table 4. When asked if students felt it was a good idea for CMU to integrate service-learning into coursework requirements, 71% of interior design students and 96% of the larger CMU group of respondents strongly or slightly agreed, as shown in Table 5.

As previously mentioned, students from the International Engineering Program at the University of Alabama participated in a global service-learning project. As part of this project, students worked on water percolation, topographic surveys, the installation of village lights, latrine installation, and the installation of 18 solar panels in three villages (Johnson, 2008). This evidence shows another example of how integrating service-learning programs into educational settings has the potential to be a positive experience and to benefit a global neighbor. Out of a possible 5 points, students rated their experience a 4.8, highlighting another example of a positive service-learning experience. Again, the CMU study showed similar findings with all interior design students and 73% of the larger group of CMU respondents reporting that they had a positive experience. All interior design students shared that their experience broadened their views and opinions of how design can impact a culture.

Positive Service-Learning Outcomes

Reaching out to people of other nations and collaborating in global partnerships can break down cross-cultural and geographic barriers (Asojo, 2007). In this study abroad experience, working with international students developed a sensitivity toward changing societal trends related to older adults and children; integrating the rich Chinese heritage and beliefs e.g. Feng Shui principles, into the final solution, realizing the full importance of southern exposure to Chinese citizens; learning new scale/space standards for accessibility/universal design while using the Metric system; promoting the adoption of a combination of the best sustainable Western and Asian style construction practices while embracing a combined Western/Asian building aesthetic which was sensitive to economic, social and political influences, such as government policy; learned to collaborate and combine ideas within a diverse group of people, while overcoming language barriers and different professional training/backgrounds; and completed a positive immersion experience while fostering a fresh model of civic engagement.

In the future, one recommendation to expand on the CMU research project would be to modify the research instrument to allow both groups of CMU students to rate their overall experience on a Likert scale, rather than rating it generally as a positive or negative experience. This would provide a more accurate rating on the effectiveness of their overall experience. Future research could also increase the number of student participants in both groups, for increased generalizability. On a more global scale, future research could explore methods for integrating an increasing number of service-learning components into courses and overall curriculums, such as the 4th credit option initiated at Georgetown University. Research could

determine whether service-learning experiences aid in student retention, in light of a smaller pool of students available to attend college beginning in 2011, and the decreasing federal budgets providing funding to higher education in general. Additional studies could also determine whether students who participate in domestic vs. international service-learning activities maintain an increased sensitivity to economic, social and political global issues impacting the U.S. and other nations throughout their professional careers.

In closing, service-learning projects have been shown to be beneficial to students' understanding of their subject matter and to the development of core professional values (Eyles, Giles, & Braxton, 1997) but this specific project incorporated many more positive aspects. On a theoretical basis, the whole was greater than the sum of its parts.

While the U.S. students learned from the Chinese students, they reciprocated and also taught the NCUT students, client (director of the nursing home), and some residents of the nursing home about caring for older adults and children through an intergenerational approach, which has shown many positive advantages within the United States. This concept is not native to China due to their traditional integration of filial piety within the family system. Since many of the Chinese citizens had never heard of intergenerational centers, it was a rich experience for the CMU students to see how some of the elders accepted it with open arms, and how some were very closed to the idea. Although some of the adults were not as accepting as others, the NCUT students embraced the idea and tried to further develop the concept at a fundamental level with the CMU students. As these students graduate and become professionals within the architecture industry, their openness to this idea is one indicator that there may be a possible shift in future cultural trends with regards to older adult and child care.

Lastly, other advantages included the teamwork that developed between the interior design and architecture students. For example, they continued emailing each other following their visit to seek input on their remaining coursework, and discussed ways that they could work together on projects following graduation. The rich relationships that developed are best summed up by one comment from a NCUT student who said, "I wish that our children could marry, and that we could grow old together in the facility that we designed." As a result of this collaboration, most (87%) of the interior design students reported that this experience provided exposure to new career opportunities. This is particularly relevant at this time for the U.S. interior design students since more architectural firms are increasing interdisciplinary collaboration at a grassroots level by adding in-house interiors divisions, and large scale projects require the work of design/architectural/engineering teams for the most successful project outcomes, especially those firms that are expanding their professional international interests. In fact, 97% of the interior design students felt more prepared to begin an entry-level job that might include international work. This illustrates further that from the experience of working with international students, participants grasped the importance of globalization among their profession and saw the richness that comes from blending the best of both cultures together into final design solutions.

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