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The development and delivery of a three-week study abroad programme in construction science

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ABSTRACT: This paper details the development and delivery of a study abroad programme for students in the Construction Science Department at the University of Cincinnati (UC). The programme was developed over an eighteen month period beginning in the spring of 2001 and took place during a three week period in September of 2002. This programme was a cooperative effort involving faculty members at the University of Cincinnati, the University of Technology-Sydney (UTS), the Queensland University of Technology (QUT) along with the staff at the Institute for Global Studies and Affairs (IGSA) at UC. Twelve students and two faculty members from the Construction Science Department at UC spent the first three weeks of September studying Australian architecture, construction techniques and culture. Those participants who submitted a twenty page research paper on the Australian construction industry received three technical elective credits. Student evaluations of the programme were overwhelmingly positive. Further work is now underway to institutionalise this programme and make it an annual offering from the Construction Science Department.

INTRODUCTION

McCabe recently stated that *The development of a global perspective is often cited as an educational goal of many academic programs, if not a necessity* [1].

For many years, students at the University of Cincinnati (UC), Cincinnati, USA, have participated in well-established, traditional study abroad programmes. Most of these programmes require that students spend one semester or an entire academic year at a foreign institution in a complete immersion programme. While these programmes have proven to be of great value to many of the University's students, they have never been utilised by students in the Department of Construction Science.

Klahr and Ratti have stressed the need for students in all professional programmes to acquire global competency [2]. Furthermore, Holland and de Velasco have addressed the necessity of adding an international dimension to programmes in Construction Science [3]. The Department of Construction Science at UC offers baccalaureate degrees in architectural engineering technology and construction management. These programmes are five years in duration and include mandatory cooperative (co-op) work experience throughout the second, third and fourth years of study.

The academic programmes at the University are organised into 11-week quarters. The calendar year includes four academic quarters: autumn, winter, spring and summer. In traditional baccalaureate programmes of study, students attend class during the autumn, winter and spring quarters and then graduate after four years of study. In the co-op programmes offered by the Construction Science Department, all students attend class during the autumn, winter and spring quarters of their first year.

The class is then split into two sections and one-half of the students (Section 1) begin their work assignments during the summer quarter while the other half (Section 2) remain in school. During the autumn quarter, the students rotate, Section 2 students begin their co-op assignments, while Section 1 students return to the classroom. During the winter quarter, Section 1 students return to the work assignment while Section 2 students attend classes. During the spring quarter, the students again change roles with Section 2 students returning to the work assignments. This rotation continues for students throughout the third and fourth years of study. A pair of students thus provide year round coverage on a given job. Co-op employers truly enjoy this arrangement, but students are therefore occupied virtually year round either at work or in the classroom. The opportunity for a student to spend a summer or a semester in a study abroad programme is, as such, virtually non-existent.

However, in the new millennium, Brill has commented that *Graduates will encounter cultural diversity at all levels*: *at home, in the local workplace and overseas* [4]. It is against this background that faculty in the Department of Construction Science set out to develop a viable study abroad experience for their students.

SURVEY OF STUDENT INTEREST

In February 2001, one of the authors attended a workshop sponsored by the Institute for Global Studies and Affairs (IGSA) at the University of Cincinnati. The purpose of the workshop was to acquaint faculty with the types of programmes available for expanding the international exposure of UC students. Following the workshop, informal discussions showed that there was a significant level of student interest in participating in a short-term study abroad experience.

A brief survey (see Figure 1) was prepared and given to the construction science students. Seventy-three responses were obtained by soliciting the first through fourth year students. Students showed an extremely high degree of interest in a study abroad programme. Two out of three students responded at the highest or second highest level to both questions 1 and 2. Nearly half of the students responded at the two highest levels when answering question 3, while many indicated, in response to question 4, a willingness to spend at least US$2,000 on a three-week study abroad experience.

Survey of Student Interest in Study Abroad

Please indicate your response to the first three questions with the number that most closely matches your level of interest.

1 = not interested, 2 = slightly interested, 3 = interested, 4 = moderately interested, 5 = very interested.

1) If the CS department were to offer a study abroad programme as a 3 cr. hr. technical elective, I would be_____.
2) If this programme were to be offered during the first three weeks of September, I would be_____.
3) If my out-of-pocket cost were no more than $1,500, I would be _____.
4) What is the maximum dollar amount you would be willing to spend for a three-week study abroad experience? _____.
5) Indicate your anticipated date of graduation: _____.

Figure 1: Survey format to determine student interest in study abroad.

In view of this high level of interest, contact was initiated with faculty members at the University of Technology Sydney (UTS), Sydney, Australia, and the Queensland University of Technology (QUT), Brisbane, Australia, in an effort to determine their willingness to participate in such a programme. These institutions were selected because both of them have departments that are similar in size and mission to the Department of Construction Science at UC. It was quickly determined through electronic communications that Prof. Neville Shooter at UTS and Prof. Tony Sidwell at QUT were very interested in hosting a short-term study abroad programme at their respective institutions.

PRELIMINARY PLANNING TRIP

In July 2001, the IGSA and the Construction Science Department each provided US$1,000 in travel funds to allow one faculty member to travel to Australia to make preliminary arrangements for the first programme, tentatively scheduled for September 2002.

Prof. Durbin made this trip in November 2001 and spent several days in Sydney and Brisbane working with both Prof. Shooter and Prof. Sidwell. Arrangements were made to spend one week at each institution during the following September. The focus of the programme was determined to be international construction and the general plan at both UTS and QUT was to spend several hours each day in lectures and additional time each day at various field sites. Additional time was spent working with hotel managers in each city to find appropriate lodging and further time was spent investigating local transportation options. At the suggestion of both Prof. Shooter and Prof. Sidwell, it was decided that the third week of the planned trip should be spent in cultural studies somewhere outside the major metropolitan areas. A total of eight days was spent in Australia working on the details of the anticipated trip.

ITINERARY, BUDGET AND FUNDING

Prof. Durbin returned to Cincinnati and, in January 2002, conducted a second survey, limited to fourth year students, to determine how many would be interested in participating in a possible study abroad trip to Australia. Initially, 37 students indicated an interest in participating in the programme. Based upon the high level of interest, the decision was made to restrict the first offering of this course to incoming senior students. A preliminary itinerary and budget were developed based upon information received from travel agents familiar with travel to the South Pacific region. Students were kept informed of the potential costs and were notified that a non-refundable deposit of US$500 would be required by the end of May in order to secure a place on the trip.

After several iterations, the following itinerary was selected and the accompanying budget was presented to all who had indicated a strong interest in the proposed programme. By the end of May, 12 students had made the required deposit.

Itinerary

The itinerary (2002) is as follows:

- Thursday, 29 August: travel from Cincinnati to Sydney.
- Saturday, 31 August - Saturday, 7 September: in Sydney at UTS.
- Sunday, 8 September: travel from Sydney to Brisbane.
- Sunday, 8 September - Friday, 13 September: in Brisbane at QUT.
- Saturday, 14 September: travel from Brisbane to Cairns.
- Saturday, 14 September - Friday, 20 September: in northern Queensland.
- Saturday, 20 September: travel from Cairns to Cincinnati.

Budget

Round Trip airfare	$1,750
Lodging in Sydney, Brisbane and Cairns	550
Transport within Australia and trip to Cooktown	250
Total cost of airfare, transportation and lodging	$2,550
Food at approximately $25.00 per day	500
Total cost excluding incidentals	US$3,050

Funding

Each student applied for and received a grant of US$500 from the Institute for Global Studies and Affairs. Further support in the amount of US$500 per student was solicited from local and regional architectural and construction firms.

Students were responsible for the balance of US$1,550 for airfare, transportation and lodging, as well as their own meals and incidentals. The estimated total out-of-pocket cost for each student was then US$2,050.

STUDY ABROAD PROGRAMME

An initial orientation meeting for participants was held in early June. This meeting was conducted by staff of the IGSA and included discussions of numerous topics ranging from passport and visa requirements to University policies, personal safety and health issues. Final travel arrangements were confirmed in early July and a second meeting was held in mid-August to address any last minute issues.

Sydney

At the end of August, 12 students and two faculty members departed Cincinnati, arriving in Sydney early Saturday, 31 August. A brief orientation meeting was held upon arrival and students spent the weekend familiarising themselves with the city's transportation network of buses, trains and ferries. Early Monday morning, the students began their study of the Australian construction industry at the University of Technology Sydney.

Prof. Neville Shooter of UTS had organised a weeklong programme of study that included specialty tours of both the Sydney Harbour Bridge and the Sydney Opera House, as well as tours of several of the Sydney Olympic venues. A number of construction sites were visited and the students were exposed to many different construction techniques. They were also allowed to participate in some of the regularly scheduled classes in the construction management programme within the Faculty of Design, Architecture and Building.

Brisbane

On Sunday, 8 September, the group travelled to Brisbane. The students resumed their studies under the direction of Prof. Tony Sidwell at QUT. They spent the week attending classes with their Australian counterparts and toured a number of both new and existing sites including the Queensland Parliament Building and the Suncorp Stadium expansion site. A visit to a hospital demolition site was also scheduled.

Cultural Excursion

The third week was devoted to cultural studies in far North Queensland. The group left Brisbane early Saturday, September 14, and flew north over the Great Barrier Reef to Cairns. At this point students were on their own for three days and managed to arrange activities that included snorkelling, scuba diving, whitewater rafting, skydiving, and tours of the nearby rainforest. Early Wednesday morning the reassembled group departed on a two-day *safari* trip to Cooktown in a 14 passenger, four-wheel drive vehicle. The guided excursion followed the inland road north and returned to Cairns on Thursday along the coastal road through the Daintree rainforest. Numerous sites were visited along the route. Students were able to see some of the country's best Aboriginal rock art as well as a number of unique geologic features. Thursday night was spent back at the hotel in Cairns prior to an early departure for Cincinnati on Friday, 20 September.

PROGRAMME EVALUATION

The need for programme assessment has been well documented [5]. Immediately upon arrival back in the USA, students were asked to evaluate the programme. Figure 2 shows the results of student assessments of various aspects of the programme. These questions were contained in an evaluation form used by the IGSA. The number following each item in the figure is the average of the 12 responses received. These results clearly show that each aspect was deemed to be more than adequate, with a majority of aspects rated in the good to excellent range.

Construction Science Study Abroad in Australia

Please assess the following aspects of the programme.
(1=unsatisfactory, 2=fair, 3=adequate,
4=good, 5=excellent)

1) Programme length	4.3
2) Programme cost	4.6
3) Pre-travel orientation	4.0
4) Travel arrangements	4.4
5) Accommodations	3.6
6) Instruction	3.4
7) Academic requirements	3.3
8) On-site orientation	3.9
9) On-site support services	4.1
10) Free time	4.7
11) Overall experience	4.8

Figure 2: Results of student assessments.

The overall experience was rated as excellent by 10 of the 12 participants. The students were also asked to comment on aspects of the programme that they found most rewarding. Responses to this query included the following:

- *Excellent cultural and educational opportunities. Freedom to choose our own experiences.*
- *Site visits to the arranged projects. Plenty of free time for students to study the culture that they had a particular interest in.*
- *Being able to learn about international construction along with seeing the great views and landmarks of Australia. It was also rewarding to see and experience a different culture.*

Students were also asked to comment on aspects of the programme that they would like to have changed. Responses to this query included the following.

- *Great trip, not much to change except make it longer.*
- *The accommodations in Cairns could have been downgraded to save money. The trip was still offered at great value.*

In response to the final question on the form, which asked if the participant would recommend this programme to another student, everyone replied in the affirmative.

During recent, informal discussions with the authors, several of the participants have indicated that they regard this experience to be one of the highlights of their undergraduate career. At least two of the students have indicated an interest in seeking employment in Australia following their graduation.

CONCLUSIONS

This experience has shown that short-term study abroad programmes can indeed be truly meaningful. Each participant

returned from this programme with a much better understanding of the global nature of the construction industry. These students have acquired the ability to function in another culture and they will almost certainly be more valuable employees when they re-enter the workforce upon graduation.

Future Prospects

With regard to the future, the overwhelmingly positive response to this programme has prompted further work to expand it and make it an annual offering from the Department of Construction Science. The Departmental faculty have unanimously endorsed this concept and have begun to work with the staff of the IGSA to achieve this goal.

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