

# Enhancing global mindsets

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## CONTEXT

Many universities include a graduate attribute focused on internationalisation with the aim of enhancing employability and global citizenship. Undergraduate engineers therefore could reasonably be expected to develop global mindsets and mobility aspirations as well as intercultural capabilities. Whilst most universities offer global mobility programs, there is scope for curriculum responses that promote global awareness that might or might not translate into global mobility. One way this might happen is through connecting domestic and international student cohorts in particular subjects.

Central Queensland University (CQUniversity) was one of six universities to explore and extend students' global mindsets. This was part of an Office for Learning and Teaching grant called: The Global Canopy: linking international inbound students with domestic outbound students for improved learning and global connections. The participant universities were diverse and included ATN, Go8 and RUN institutions. Further, whilst we focused on engineering education, other disciplines included medical science, architecture, computing, health, mathematics, construction and a range of sub-disciplines.

## PURPOSE

The Global Canopy Project investigated ways of increasing global mobility aspirations of students and explored means for embedding global awareness into course material. Central Queensland University took a first year undergraduate engineering subject as a context for connecting domestic and international students and investigated the impact on student attitudes about global mobility.

## APPROACH

Each university adopted a case study approach. A pre-activity survey was designed to capture student attitudes and willingness to travel for study purposes. Then, for our study, we introduced a series of disruptive teaching/learning activities that engaged domestic undergraduate students in thinking as global engineers and connected them with international post-graduate students. A post-survey was then implemented along with semi-structured interviews with students. Data was analysed to determine attitudinal change.

## RESULTS

Whilst most students engaged enthusiastically in the activities that connected domestic and international cohorts, data suggest a marginal attitudinal change. Students with existing positive attitudes felt their global mobility aspirations and global awareness were enhanced and several students immediately took the offer to apply for the EWB Humanitarian Design Summit hosted in India.

## CONCLUSIONS

Despite success in enhancing mobility aspirations and global mindsets, the teaching and learning activities fell short of inspiring broad attitudinal change. The initiative highlighted the challenge faced by educators to enhance global mobility aspirations, particularly for those teaching in regional locations. Our work also reinforced the need for embedded rather than ad hoc approaches to developing global mindsets.

## KEYWORDS

Global mobility, global mindset, internationalisation.

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## Introduction

CQUniversity has large groups of both domestic and international students. However, given the geographically dispersed nature of its campuses, coupled with the high concentrations of international students on the metropolitan (Sydney, Brisbane, Melbourne) campuses, the two cohorts rarely interact. Most of the domestic student cohort is located on regional campuses or is comprised of distance enrolments.

The university's strategic plan emphasises outbound mobility opportunities as well as work integrated learning to produce career ready graduates. There are study abroad programs operating across the university in a number of different disciplines but few connections, systematic or otherwise, between domestic and international students.

Key objectives of the OLT-funded Global Canopy Project were to raise awareness of global opportunities amongst domestic students, indicate potential for future employment, and enhance networking, cultural understandings and discipline learning. The project team focussed on increasing global awareness and aspirations of students who had not yet considered travelling abroad for study purposes.

Many of the domestic cohort living in regional Australia have not travelled outside the region and a parochialism had been observed in classes where students seemed unaware of or disinterested in wider national or international affairs. The cultural mix of students on the regional campuses is also much more homogenous than in metropolitan areas and Australia more broadly. There was a real need to promote global thinking and intercultural awareness. More importantly, to date, there was little evidence of specific strategies within courses or programs to promote such concepts beyond existing volunteer programs and the provision of study abroad opportunities promoted by our international office.

## The Global Canopy Project

The following discussion is drawn directly from the OLT grant application.

The rationale for the wider Global Canopy project was grounded in six key environmental and policy factors. First, the number of inbound international students is estimated to rise by 30% by 2020 (IEAC, 2013). This will be a challenge, but can also be seen as a rich opportunity for connecting inbound and domestic outbound students in meaningful exchanges focused on cross-cultural learning and global understandings.

Second, domestic student mobility continues to grow with increasing numbers of students studying abroad. An international study experience during the undergraduate degree is becoming part of the culture of Australian universities (Malicki, 2013).

Third, the Australian government has a strong emphasis on student mobility with strategies designed to promote outbound mobility of tertiary students, particularly in the Asia region. The launch of the New Colombo Plan will create more opportunities for Australian domestic students to study overseas (Aust. Gov. Dept. Edu, n.d)

Fourth, the structural and resource limitations of universities to provide global opportunities for all students point to a need for sustainable learning and teaching practices that will enhance global perspectives for students and university staff.

Fifth, Australian universities lack a coherent learning strategy for the integration of inbound and outbound students. Indeed, the International Education Advisory Council points to the need for coherent and coordinated approaches (2013).

Sixth, the emergence of the Global Student. Greater focus on deliberate and specific learning interactions between domestic and international student cohorts can impact arenas beyond the classroom and support cross-cultural connections and global perspectives (Gothard et al 2012). Such learning should be an intentional part of the curriculum.

For the student engineers, there are many opportunities to work globally on engineering projects (Engineers Australia 2016), with China and India being identified as major growth areas. Jennifer O'Donovan from Engineers Australia lists "rapport building, self-assurance, flexibility and adaptability [as] some of the key skills" required for work globally.

## Learning and Teaching Activities

The project focused on a local cohort of undergraduate engineering students on our Mackay campus. CQUniversity engineering program encourages students to think about themselves as student engineers from the very first day at university. It seemed a cohesive fit and a natural pedagogy to extend this to being aware of global networks and partnerships, and work with global engineering problems and solutions. We wanted to encourage students to think of themselves as global learners of engineering. A total of 35 students were involved and were all first year engineering students.

A range of activities were designed for the first year engineering cohort to promote global awareness and thinking, and intercultural awareness. There were two elements of the activity design that ensured authenticity. Firstly, student projects were used as a basis for re-visioning scope. It should be noted that the student projects were already authentic having been developed either from industry or from the Engineers Without Borders (EWB) Design Challenge. Secondly, the decision was made to include real people with real engineering experience from the EWB challenge countries (India) in the activity right from the start of the course.

India was chosen as a focus country as the School of Engineering and Technology had been successful in securing funding under The New Colombo Plan for students to take part in the Engineers Without Borders (EWB) Humanitarian Design Summit in India and we had a large number of post-graduate international students whose country of origin was India. In addition growth in Indian infrastructure and design projects and opportunities meant employment and consulting potential for domestic students into the future. This presented a perfect opportunity for all students, in particular the domestic students, to begin to think about engineering as a global profession using India as a context.

Students were asked to complete a pre-survey at the beginning of one of their tutorials during Term 2. These were distributed in hard copy and 28 students completed the survey.

Using the context of student group projects undertaken as part of the second term subject 'Skills in Engineering', students were asked to re-vision their project scope for development and implementation in India. Explanations were given during a class that students were to start thinking about themselves as global professionals and engineering as a global activity and that one way of doing this was to consider their projects as applying to a different context.

Already a number of students had selected projects as part of the EWB Challenge and were working on sustainable community development and poverty alleviation projects so they were becoming familiar with engineering contexts that weren't local to them. The remaining group projects were industry based. In both cases the projects were authentic and engaged students in purposeful, real-life engineering problems.

The re-visioning session included a brainstorm on what students already knew about India as a country followed by discussion within their project groups of the things they would need to know if their project was developed and implemented there. The brainstorm revealed that students had some understanding about trade and infrastructure, the country's main religions and that there was a gap between developed and developing regions.

In groups, they then thought about their projects in a different context: Where might the project work in India? What materials would you source? How would you implement the project and what considerations would you need to make? Are you solving the same problem?

Prior to the re-visioning session, post-graduate students from India were invited by email to engage with domestic students in engineering with a view to combine some technical engineering knowledge with local knowledge about India. The domestic students (first year students from the subject 'Engineering Skills 2') had provided short descriptions of their projects which were sent to a group of post-graduate students from India. Though several post-graduate students indicated willingness to take part, for the scheduled time only two could make it. One postgraduate student, Jaidev, joined the class via video conference.

Jaidev assisted with clarifying some of the broad understandings about India during the brainstorm, and then each group sat in front of the screen to talk with him specifically about their project. One group decided that their project did not apply to India at all – improving a conveyor belt uptake mechanism for a coal mining operation. India is amongst the world's biggest producers of coal and would indeed be a transferable context for this particular project. It was unclear why this group disengaged from the task, given that their project could be easily applied to an Indian context. There was no evidence to suggest that the international student worked with this group differently to other more engaged students.

Of the remaining groups, the most thoughtful interaction occurred with those groups doing the EWB challenge. These groups were able to immediately identify some parallels to their projects – alternative fuel sources for cooking and improved road drainage – and posed appropriate technical and cultural questions.

Jaidev then shared a PowerPoint presentation he had developed which included social and cultural insights into working as an engineer in India. Most pertinent here was that the information he shared was much less about the technical dimensions and requirements of engineering and more about communication mores. He pointed to the importance of building relationships in the course of doing business and the need to understand things like Indians' reluctance to say no to people they want to impress or those they respect. The class sessions had the dual impact of enhancing students' thinking more deeply about their projects and positioning themselves as global engineers.

## Outcomes

It is difficult to determine the precise outcomes of the activities conducted with the first year students. We do know that four of the group went on to apply for the EWB Humanitarian Design Summit to be held in India and Jaidev emailed his willingness to be involved in such initiatives again. To date there has been limited return of the post-surveys which students were asked to complete online. This highlights the value in being present and asking students to complete hard copy surveys in a particular time and space. It also makes it difficult to discern the efficacy of the re-visioning activities and any change in student thinking.

A number of powerful insights were demonstrated through the focus group. Student comments helped inform our efforts to increase global citizenship and study abroad aspirations, but also reinforced our thinking about how engineering practice can be conceptualised as a deeply human and social undertaking. Reflecting on the EWB project and their discussion with Jaidev, one student commented:

*"You had to think about a lot of things you normally wouldn't in an engineering situation. Mostly a lot of social and cultural type things."*

Although it could be argued that these students, who had travelled and who had been successful in their application to the Design Summit, were already motivated to travel and study abroad, they did agree that the experiences afforded to them in this course extended and enriched this. "New learning or understanding has definitely been seeded." And this:

*"When I first wanted to do engineering, I always said that I wanted to travel. I wanted to work overseas but with this...like I still want to do that but now I know the extent of it. I can't just go 'yeah we do this is Australia, let's do it here' 'cause*

*it might not work. 'Cause they might have a completely different way of doing things. And that will be good because that will open my mind up to thinking about new ways and processes."*

For these students, there was a sense that global thinking was a service, a giving back. Both talked about making a difference through working with people less fortunate than themselves. They were also able to articulate that their entire cohort did not think like them, pointing out that their global mobility aspirations were already established. When asked what might be done differently to engage students in global thinking, one said:

"Unless they are the type of person who actually is genuinely interested in helping other people and doing that sort of thing, usually the comments you get from other people are 'why would I want to do that? Why would I want to go to India for not a holiday and to work?' I don't know how you can make people see the actual benefit in it unless they're already that type of person."

What can be said about this? First, it is possible to *enhance* positive global aspirations in students. Second, it is not clear if it is possible via the means described above to *create* positive global aspirations in students. There were some challenges in negotiating the time and space to implement the activities and there was a sense that we were either impinging on the lecturer's class time and/or detracting from time students could spend working on their projects. This was possibly the case because term schedules had been set a long time in advance and this was perceived as extra work. Building activity like this into course outcomes and assessment would mitigate this challenge.

## Conclusion

It seems to us that whilst our (former) university has an international office and lots of study and volunteer abroad opportunities, internationalising the curriculum, improving intercultural, enhancing students' global mobility aspirations and fostering a sense of global citizenry occurs in ad hoc ways across the university. The university's Community of Practice on internationalising the curriculum is ideally positioned to encourage whole of university discussion in this area and we found we were able to share and promote the work of The Global Canopy Project via this community.

We were satisfied that connecting international and domestic students was a valuable activity and might have sparked some interest in students a willingness to study or volunteer abroad and might have facilitated a capacity for students to see themselves as global engineers and the social and cultural dimensions of engineering practice. It was, however, an isolated event and for such thinking to be fostered long term, and for any impacts to be sustainable, there would need to be much greater embedding into curriculum, assessment and teaching practice.

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<https://sites.google.com/a/rmit.edu.au/the-global-canopy>