

2006-955: TAILORING THE INTERNATIONAL EXPERIENCE IN THE UAE AND THE USA

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Abstract

The notion that engineering students need international exposure as part of their preparation for professional practice has become firmly enough established that there is now a track record of innovative programs from which to derive best practices and models for program enhancement. This paper suggests that the international experience, if carefully shaped, can be made to counterbalance the most prominent limitations and misconceptions of students stemming from their original culture and social backgrounds. There is no one global model of international experience that serves the best interests of all students and the profession: in fact engineering educators would do well to think as carefully about the social and intellectual needs of their students as they do about the development of their technical and professional competencies when guiding their students toward international experiences. Using the United States and the United Arab Emirates as examples, this paper examines some of the assumptions students hold about work, people, organizations, gender and beliefs that need to be challenged in order for them to be able to practice and live successfully in the global society, and suggests what type of international experience would be best suited to support the students' personal and professional growth.

Introduction

The good news is that the number of US students studying abroad has doubled in the past decade. The bad news is that during these last ten years the percentage of those students who are majoring in engineering started low (2.3%), varied little (between 1.9% and 2.9%) and remains low (currently 2.9%).¹ The destinations of US study abroad students have become more diverse over the past decade, with China being a big gainer. Very few US students, however, want to study in the Middle East, since it is perceived as a dangerous place. Students from the Middle East, by way of contrast, want to study in the US, although world politics continue to conspire against that. All of these students need international exposure, but for quite different reasons. It is informative to consider what US engineering students should aim to achieve through international experience, in comparison with what engineering students in the United Arab Emirates should focus on.

Preparation for international practice for Emirati engineering students

The United Arab Emirates is an oil-rich country of about four million people located on the Persian Gulf. Its capital is Abu Dhabi, although Dubai is better known. The UAE was formed in 1971 by seven emirates – 84,000 square kilometers of land – banding together into a federation. The principle language is Arabic, the religion of the country is Islam, and literacy supposedly stands at 90%.² Only about 20% of the people who live in the Emirates are nationals, with the rest coming from a wide variety of countries such as the Philippines, India, Pakistan, Sudan, the UK and the US.

Due to an unprecedented rate of modernization since about 1970, many of the mothers of today's UAE university students are illiterate. Primary and secondary schools are still oriented toward rote learning, and a generous system of oil-generated financial subsidies assures Emiratis of a decent lifestyle with little effort. As a result of ministerial directives, post-secondary education prepares students academically to enter into the globalized national economy where their country is investing huge amounts of its oil revenues, but by and large students are unaccustomed to the ways of the world outside of their own limited spheres of family and school. If international exposure is to be beneficial for Emirati engineering students, it needs to show them how other people in the world deal with gender, with intellectual independence, and with personal responsibility and initiative.

In the United Arab Emirates, there is strict separation by gender starting from an early age. While there are varying degrees of discrimination against women in many countries, the situation in the UAE is extreme enough that even suggesting holding mixed classes strikes fear in the hearts of most students, and is rejected by a large number of families. But there the separation stops. The UAE's booming economy means that a college graduate will have to leave behind the careful gender segregation practiced at home and school, and to work with members of the opposite sex. The government policy of Emiratization increases the opportunities that UAEU graduates have for employment in both the public and private sectors of their own country. In order for these students, men and women, to succeed in working in the exceptionally heterogeneous atmosphere of their country, any international experience should be designed to expose them to more egalitarian relationship structures so that they will be able in their professional lives to work productively with men and women. Moving out of their own region and spending time abroad is the best way for these young Emirati engineers to learn the consequences – good and bad – of more open systems of relationships, and how to navigate in those environments. That is why international exposure for these students should not be in comfortable places such as other Gulf countries or nearby, as it so often is, but ideally should be in places providing more challenging models of women and men working together on a regular basis.

As education at all levels in the UAE only now begins to emerge from decades of authoritarian teaching and passive learning, students are often still left with a legacy of excessive respect for authority, and an acceptance of constraints on creativity and invention, also known as bureaucracy. By the time students enter the university, they have spent many years accumulating facts for the purpose of repeating them, with little incentive to challenge, apply, innovate or integrate. A world that is characterized by globalization, permeable borders, rapid and accelerating change and intense competition requires experiencing first hand environments where individual innovation and independent thought are sought out, reinforced and rewarded. Agility of the mind, the ability to adopt professional skills to rapidly changing conditions, flexibility and risk-taking need to be prominent in the destinations chosen by UAE engineering students when they go abroad.

In this respect, North America is a good place for UAE engineering students to spend some time. Foreign students are frequently struck by the seeming endless flow of new ideas that pass through the minds of North Americans, along with their deeply internalized conviction that their

society makes it possible for them to reap some benefits from the quality of their ideas and their investment of energy. Exposure to this mind-set can set the Emirati engineering student apart from others, since even the best technical skills will not benefit either the individual or society if students are not challenged to use them with originality and with the expectation of some personal satisfaction and benefit.

Deeply tribal societies such as the Emirates have a tendency to preserve paternalistic thought and behavior patterns. The sheikh, “our sheikh,” is there be asked to make things right, to bestow a benefit, because he is “our sheikh” and is expected to retain his power by exercising it when called upon by a member of his tribe. One of the prime illustrations of the importance of the sheikh to the individual Emirati is the veneration which continues unabated for the memory of the late Sheikh Zayed Bin Sultan Al Nahyan, the founding president of the UAE who died in November 2004. It is striking to see the number of reminders of his life throughout the country, and the unabated public acknowledgement of gratitude to him for his leadership in founding and shaping the country.

The other side of this legacy reveals a potentially limiting veneration for the past, and a tendency to look to larger problems to be solved elsewhere, by others. For this reasons, an excellent destination for UAE engineering students might be a country whose population takes its roots from waves of forced and voluntary immigration, such as their own, but where self-reliance is a source of pride. As a counterbalance to the network of tribal affiliations and reliance on the benevolent presence of a sheikh, UAE students would have much to learn from studying and working among sturdy individualists, with the hope that the lessons learned would carry over at home into their professional approach to problem solving and invention.

Preparation for international practice for US engineering students

It should be noted that in the section above, the development of foreign language fluency was not listed as a high priority outcome from international experience for Emiratis. That is because the UAE is so linguistically diverse, with all its foreign workers, that English has become by default the common language of the country, as well as being the language of university instruction. So the Arabic speaking Emiratis live surrounded by linguistic diversity, and are at least experienced with dealing every day with misunderstandings and miscommunications between and among people of different languages, all components of cross-cultural communication. For the US students, the situation is quite different.

English is the undisputed language of the globalized world. English is the international language of science and technology. So there are some who ask whether there is still a need for US engineering students to learn a foreign language as part of their international preparation. The imperative to study a foreign language is still present for US students, although perhaps for a different reason than was offered even twenty years ago. Today, the primary reason for having US engineering students study a foreign language is to counteract the limiting intellectual factors which arise from living in the rapidly homogenizing, homogenized and mono-lingual US culture and from studying subject matter which is presented exclusively in English and mathematics. The sheer scale and influence of the US, especially when coupled with engagement in a professional field dominated by English, makes it too easy for American engineers to be trapped

into believing that global means American. The truth, actually, is found in an old saying, “You can buy in your own language; you can sell only in the language of the other.” The young US engineer must be able to work for others, on behalf of others, with others, all of which requires an adjustment of an adolescent world view so as to acquire valuable traits of humility, patience, insight and tolerance. This adjustment comes quickly through being forced to conform to the expressive linguistic patterns of another set of people.

So where should US engineering educators send their students to engage in the shock therapy of being deprived of their language and forced to learn another? The answer: make them spend some time in a place removed from the great homogenized population hubs of the world, to eastern Russia, or an underdeveloped African country, or rural India, and structure their experiences so that they are forced to working around their own linguistic deficiencies. This need not take months, but the effect should remain for a lifetime and would make those engineering students better qualified for international practice.

US society has proudly shed many of the formalities and traditions that are cherished in most other parts of the world. So in preparation for international practice, it is good for US engineering students to spend time living in a place where social, moral, religious and cultural constraints and formalities are powerful and pervasive. This is one argument for sending US students to a predominantly Muslim country in preparation for international practice, to give them a chance to learn tolerance in a faith-based, traditional society and how to conduct themselves as professionals in that setting.

Students in the United States are notorious for their ignorance of geography, with engineering students never having emerged as exceptions. Test after test at all levels of education prove that American students don't know about the world beyond their doorsteps. Even students who claim to be interested in world events often are caught short when asked to identify the location of the latest disaster, the endless war, the notorious or momentous event. This works to the detriment of the engineering students, of course, as they are forced to come to grips with globalization without having a good notion of what the globe looks like. For this reason a traditional European experience, if designed to expose the students to the European Union rather than only one country, would go a long way to motivating students to learn the contours of at least twenty-five countries and perhaps more, to test assumptions about national borders, and to acknowledge that transnational collaboration has met with some success in the contemporary world.

Conclusion

It is impossible, of course, for an engineering student, whether American or Emirati, to do a world tour in order to prepare for eventual practice. This essay is meant to prompt engineering faculty to give wise and strategic advice to their students about how to craft international experience as part of their undergraduate education. If carefully planned, an international experience will go a long way toward counterbalancing any limitations of their native culture and upbringing. No one student can go all places, but faculty advisors and mentors would do well to guide students to think carefully about both their own intellectual habits and attitudes, and about how the rest of the world thinks and acts, and to select a destination which will go the farthest in giving them personal competencies which will develop apace with their technical expertise.

¹ *Open Doors 2003 – 2004*. (<http://opendoors.iienetwork.org>)

² Ibrahim Al Abed, Paula Vine and Peter Hellyer, eds., *United Arab Emirates Yearbook, 2005* (Trident Press, Ltd: London).