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Engineering Education in Bahrain

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Role of Bahrain Society of Engineers in Continuing Education

ABSTRACT

One of the main objectives of the Bahrain Society of Engineers is to serve engineers, the profession and the community at large. The society started offering its members financial assistance to attend conferences outside Bahrain and went further to partly- finance members applying for graduate studies. More recently, The society has established a training centre offering a variety of courses not only to its members but also to the engineering community throughout the gulf region.

This paper will outline the contribution of the Society to continuing engineering education.

Background

Formal primary education was launched in 1919 through the initiative of a group of enlightened Bahrainis who formed what was then known as the National Committee for Education.

Prior to that there were a few private schools with a small student intake & traditional Quoran Learning Centres which offered a limited number of places for both male & female attendees.

To start with formal primary education was limited to male students, females had to wait until 1928 when the first all females primary school was inaugurated.

By 1930, the duties and responsibilities of the National Committee for Education were taken over by the government of Bahrain.

The first batch of the primary school graduates, six male students, were sent to Beirut –Lebanon- to continue their education.

Secondary education for males was started in 1940 & for females in 1951.

The government, recognizing the need for trained technicians, established the first technical school in 1937. Students were offered courses in auto- repairs, plumbing & carpentry. However

many potential students were very reluctant to join & as an incentive the government offered monthly stipend.

Secondary commercial classes were first introduced in 1958 where students were taught book-keeping, principles of finance & typing.

To start with students' numbers increased slowly until parents began to see the benefits of having educated children as bread -winners. After WW II more students of both sexes started to join the primary & secondary schools on more regular basis.

Primary & secondary education in Bahrain was & continues to be free.

By the academic year 2001 /2003 there were about 120,000 students out of a population of about 450,000 pursuing their primary & secondary education in Bahrain.

Oil & Education

Oil was discovered in Bahrain in 1932 & by 1936 work started on the oil refinery serving Bahrain & partially the eastern region of Saudi Arabia. With a steady income from oil made available to the government, primary & secondary education witnessed steady & regular growth. The government started sending bright students who completed their secondary education to universities in the Arab World. The American University in Beirut –Lebanon (AUB) –was a popular choice followed by universities in Egypt & Iraq.

In 1955 there were 38 students on government scholarships & a similar number sent by their families. The first Bahraini engineer graduated from the AUB in the same year.

The figures for 2001 / 2002 rose to 1619 students, private as well as government- sponsored out of whom 210 were taking engineering or engineering- related courses and all of them studying abroad.

Oil industry created the need for skilled & semi-skilled worker as well as engineers. The recruits came mainly from the Indian sub-continent.

To meet the growing demand and to encourage young Bahrainis to seek careers in the oil industry, the Bahrain Petroleum Company started an apprenticeship scheme in 1956 whereby primary school graduates were offered four –year programmes to prepare them for work in the various operations associated with oil exploration & refining..

Having seen the benefits of the apprenticeship scheme, the Company went further by offering their young & bright employees the opportunity to continue their education. The courses offered were modeled after the British educational system of the General Certificate of Education (GCE) with the Ordinary Level being taught in Bahrain & the higher level - Advanced Level or the Ordinary National Diploma taught in the U.K.

Students with grades acceptable by the U.K universities were able to continue their education & by 1966 / 67 the first batch of BSc holders all males and mostly engineers started joining the company.

This programme was such a success that within a decade the majority of graduates were beginning to occupy the middle and upper management & engineering positions within the Company.

Other oil companies, established in the 1980's, followed suit in sending secondary school graduates to continue their tertiary education abroad, this time to the U.S.

The role played by the Bahrain Petroleum Company & the other oil companies in engineering education, as the majority of those sent to study abroad came back as engineers, has been vital to Bahrain as well as the engineering profession in particular. Getting their engineering education abroad & combining it with on-the-job training programmes both at home & abroad produced top quality, highly motivated & disciplined engineers who contributed not only to the oil companies but to Bahrain at large.

Formal Engineering Education in Bahrain

The governments of Bahrain, Qatar, Abu Dhabi & Oman established in Bahrain in 1969 the Gulf Technical College with the British Government providing the instructors. Students came from the sponsoring states and were offered technical courses leading to degrees & certificates in engineering similar to those in the U.K.

The College was later renamed the Gulf College of Technology and by the mid-seventies almost all the students were coming from Bahrain. In 1986 it was amalgamated with the University College of Arts & Education to form the College of Engineering –University of Bahrain.

College of Engineering continued to offer programmes leading either to Associate Diploma or Bachelor of Science in civil, mechanical, electrical & chemical engineering –modeled after the US education system.

Currently there are 2300 students out of whom 30% are females & an annual intake of 350-400 with staff from 19 countries & English is the teaching medium. Other disciplines such as architecture & computer engineering were also added.

The College started offering Master of Science courses in civil, mechanical & electrical engineering in the late eighties. MSc programmes are currently on hold for one year for evaluation & restructuring.

Being aware of the need to maintain an acceptable standard in engineering education & to gain recognition of the degrees offered, the College followed the ABET criteria.

Currently, there are some radical changes in the engineering curriculum & the College will go through the necessary steps leading to compliance with the ABET requirements.

Other engineering colleges within the Gulf Co-operation Council (GCC), are fully aware of the need to establish equivalence & have their degrees recognized internationally. They are seriously considering, in partnership with the professional engineering societies, forming a regional accreditation board for engineering education in the not too distant future.

Role of the Engineering Society

The Bahrain Society of Engineers was established in 1972 with the purpose of serving the community & the engineering profession.

Bahrain like the other GCC states, is a nett importer of engineers. They come from Arab and non-Arab countries with a bewildering variety of degrees, diplomas and certificates. The difficulty facing many employers lies in trying to determine the authenticity & level of foreign as well as local engineers with degrees issued by universities, colleges & institutions about whom little or nothing is known.

Writing to the universities or the professional engineering associations in the countries where the degrees were issued is a fruitless exercise as very few tend to respond after repeated calls.

Advancement in photocopying technology makes it even easier for the unscrupulous to produce certificates & degrees from the most prestigious universities anywhere in the world.

Employers sometimes seek the assistance of the Society to evaluate the qualifications of their employees. But the Society's limited resources, the time taken to get response from either the issuing universities or institutions & the sheer number of applicants make it extremely difficult to perform this service in a satisfactory manner.

There are moves by the Government to authorize the Society to maintain a register of all the practicing engineers in Bahrain.

This is likely to be both an opportunity & a challenge. The opportunity will be in many forms such as ensuring that only bona-fide engineers will be allowed to practice; that continuous professional development is actively pursued and that a code of ethics is strictly applied. The challenge will be institutional, from an engineering society to a regulatory body for engineering practice. High dependence on expatriate engineers will continue to be the case in the foreseeable future.

World Trade Organisation (WTO) –Globalisation

WTO's General Agreement on Trade in Services (GATS) covers services that will be TRADED among member states. The GATS schedules identify 11 basic services & contain 160 sub-sections, among them are engineering or engineering –related services.

WTO members are encouraged to reduce & eventually remove barriers to movements of professionals & services across borders. Countries may seek bi-lateral or regional agreements & the outcome is far from clear at the present. There is a general apprehension within professionals & associations in the developed countries that their jobs will be threatened by influx of foreign professionals arriving in their countries or jobs being transferred & performed in the developing countries.

Developing countries on the other hand are already feeling that the brain- drain is imposing a heavy burden on them. The cost of educating engineers only to lose them to richer countries is hard to swallow.

There are also other issues, Consider the case of Bahrain. Any engineer regardless of his/her nationality will have to be licensed to be able to practice his profession. This means that he or she will have to satisfy the requirements –both academic & practical- of the licensing authority. This may not be the case in some countries where the engineering profession is not regulated or where it is not mandatory to be licensed in order to practice engineering.

Engineering education is currently evolving on many fronts & the demands & expectation of both the engineers & their employers are increasing. Educational institutions, professional engineering associations & employers have a role in defining what is wanted & how to achieve it.

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