

Excellence in Education

Guanning Su

1 Introduction

The most predictable feature of modern society is its unpredictability. We no longer believe that tomorrow will look much like today. Universities must find ways to sustain the most cherished aspects of their core values, while discovering new ways to respond vigorously to the opportunities of a rapidly evolving world.

James Duderstadt, President Emeritus, University of Michigan [1]

These words of wisdom at the beginning of the seminal work “A University for the twenty-first Century” by one of the most respected American university presidents of one of the world’s best public universities, describe succinctly the mega-trend of change, challenge, modernization and globalization sweeping the world. Whether we reside in Singapore or Saudi Arabia, this mega-trend cannot be avoided. An excellent education system, culminating in the education provided by a major university, must equip our students and graduates to meet this mega-trend head-on and benefit from its ramifications, whether he or she is a Singaporean, a Saudi or one of the foreign students enrolled in our universities.

King Abdulaziz University (KAU), by embarking on strategic planning and convening its International Advisory Board (IAB), seeks to utilize and exploit this mega-trend of challenge, change, modernization and globalization, and harness and exploit the opportunities it provides to develop a university model of excellence. This chapter proposes the philosophy and approach for KAU to develop an educational model of excellence, drawing significantly from the author’s experience in Nanyang Technological University (NTU) in Singapore. The author led the transformation of NTU into a major global research university during his term as President from 2003 to 2011. This required fundamental changes in structure, process, staffing, funding and education. KAU is well on its way towards its own

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transformation, promoted by a dedicated, wise and resourceful leadership and assisted by close engagement with the IAB.

While the changes envisaged by KAU are all encompassing, this particular chapter focuses on undergraduate education and professional education up to the Master's level. Education of Ph.D. level researchers and academics is closely tied to the research enterprise in the university and best left to this book's other authors (see chapter "[Excellence in Research](#)", by Professor Michael Arthur).

2 Internationalization of University Education and Its Application to Saudi Arabia

Each nation among the 193 members of the United Nations has its own particular characteristics resulting in continuous changes in international position and standing. Prominent among them, in contrasting ways, are the special cases of Singapore and Saudi Arabia.

Singapore Skyline at Marina Bay (photo by Guaning Su)

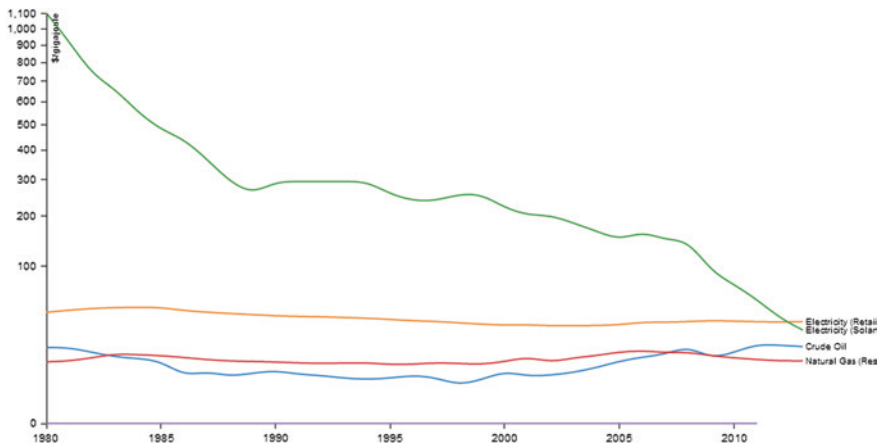


The Singapore story is a "poor boy made good" story of a small tropical island, devoid of natural resources other than its maritime location, striving against the odds to succeed and prosper. There is always a degree of angst in the Singaporean psyche, almost as if we cannot quite believe that we have come thus far. Singaporeans tend to have nagging doubts that it may be all be a mirage that can disappear like Cinderella's outfit, horses and coach on the stroke of midnight

in the well-known fairy tale. As a result, we are obsessed with planning for the worst-case scenario and are overly cautious when considering possible courses of action that have not already been tried and tested by others. Engineering fundamental change with such a prevailing culture is always a challenge.

Saudi Arabia has gone through changes no less remarkable than Singapore. In a mere two generations the lives of most Saudi citizens have undergone complete transformation, from a predominantly nomadic way of life, struggling against the elements, to being citizens of one of the world’s most prosperous countries [2]. Saudi Arabia today is a modern nation with every conceivable convenience and a high standard of living secured by an enviable position as the nation with some of the world’s largest proven petroleum reserves [3]. Even so, the far-sighted Saudi leadership is already working on a post-petroleum future and embarking on the development of alternative industries. There is also concern among the leadership about the effect of petroleum wealth on the levels of motivation and energy among some Saudi youth. Reliance on foreign workers and its implications for national resilience is yet another concern. Universities such as KAU play leading roles in creating an increasingly diverse, robust, resilient and promising national future by educating its future leaders, professionals and citizens. Universities, as the main instrument in the process of the preparation of young people for high skilled jobs, must also help to overcome the inertia generated by a population accustomed to government largesse.

Alternative energy costs converging with oil and gas [4]



3 The Role of Religion

Religion plays an important part in both nations but in contrasting ways. Singapore is a multi-ethnic, multi-religious nation that has an enviable record of racial and religious harmony over the five decades since independence. One

interesting illustration that is highly symbolic of the Singaporean approach towards multiple religious coexistence is the commissioned military officer corps, which is blessed by leaders of no less than seven different religions.

Saudi Arabia is the guardian of the two holiest places in Islam: Mecca and Medina. The nation hosts millions of pilgrims annually with remarkable levels of efficiency and hospitality. This unique position in Islam, along with the influence consequential to it being one of the world's largest oil producers, bestows on Saudi Arabia a commensurate level of global influence and a stature unmatched in West Asia and in the Arab and Islamic world. An important role of leading universities such as KAU in Saudi Arabia must be to educate the future leaders of such an important nation. This educational process requires KAU to inculcate in all its students a broad education with an international and global outlook, a worldview. Graduates possessing this kind of outlook and who have benefitted from wide-ranging internationally oriented education would be suitably prepared to provide leadership in an enlightened administration in support of the nation's leadership. KAU graduates need practical hands-on experience and need to make active contributions in professions relevant to the needs of Saudi society and its economic structure. In order to fulfil such requirements, KAU is therefore required to educate the nation's youth in a wide range of specializations and for a wide variety of professions. Although particular curricula depend on the expected fields of endeavour of future graduates, it is a well-accepted view among the world's best universities that a broad preparation in the humanities and sciences encompassing a wide range of professions would be of benefit to both the graduates and the nation.

King Faisal Convention Center at King Abdulaziz University (photo by Guanng Su)



Internationalization of the education model in KAU involves creation of opportunities for KAU students to be exposed to international ethnic and religious diversity and international, interdisciplinary and interfaith dialogue. Judicious exploitation of such opportunities will enable KAU graduates to adapt and tailor best international practices to create a uniquely Saudi outlook that takes into account the globalized world's complexities. As the graduates advance in their careers they will be able to assist in the formulation of appropriate effective responses of a modern Islamic country to the pressures and impact of globalization. Successful reconciliation between traditional Islamic values and the impact of rapid economic development and modern technology can in turn serve to accentuate Saudi Arabia's leading position among the world's Muslim nations.

4 Issues Faced by a Mainstream Saudi University in Internationalization

By virtue of its history, Saudi Arabia is by and large a conservative society. Not only was the traditional nomadic way of life common until a couple of generations ago, the special position of the Saudi monarchy and religious establishment as the guardians of the two holiest places in Islam, the cities of Mecca and Medina, confer upon the Saudi population a special status and obligation to be exemplars of the virtues extolled in the Holy Quran. This conservatism is a national strength in that it provides the Saudi population with solid cultural heritage and stamina. This enables them to resist corrosion by unwanted and undesirable aspects and influences of modernization and allows Saudi Arabia to develop societal resilience. This can also be a liability if, as a result, Saudi Arabia concentrates too much of its gaze inwards and shuts out too much of the outside world in an effort to keep corrupting influences at bay. KAU has a key role to play in reconciling the apparent differences between conflicting values.

A university is positioned as a summit of learning. In today's world, this must include learning in an intellectual and questioning manner, rigorously addressing the complexities abounding in the kaleidoscopic outside world. Among Saudi universities, KAU is unique in the kingdom in terms of historical position and geographic location. Not only is KAU holding the name of the founder of Saudi Arabia, King Abdul Aziz, it is also located in the major Red Sea Port of Jeddah housing one of the country's main airports and is well connected internationally. It is also close to Mecca and Medina, the two most potent symbols of Islamic culture and values. The port and airport open the doors of the world for KAU students so that they can understand and absorb and adapt to influences from the outside world. The proximity of Islam's Holy Shrines is a perpetual reminder to KAU's learning community of Saudi Arabia's unique position and responsibilities. As KAU embarks on its Third Strategic Plan, there is an opportunity of exceptional potential for the university to stand out from the pack, not just in Saudi

Arabia, but also globally, by creating a new model of education—“KAU Education—the Best of Both Worlds: the modern world and the Islamic World”.

Sun sets on Jeddah Seaport (photo by Guaning Su)



5 Importance for Saudi Students to Understand and Tap World Mega-Trends

KAU education can be seen as a bridge between the modern world and the Islamic World. The modern world has witnessed an exponential explosion of knowledge and rapid proliferation of pathways to access knowledge. Such an explosion of knowledge has however brought in its wake untruths, half-truths, unverifiable claims, propaganda and misinformation of every conceivable variety. The world is only now beginning to attempt to sift the gems from the chaff.

Another modern trend is the proliferation of new discoveries at the boundaries between disciplines, the so-called trans-disciplinary research and holistic approach to problem solving. Saudi Arabia itself is an excellent example. Being energy-rich and water-poor gives rise to opportunities for synergy between petroleum, environmental and agricultural disciplines, due to the close link between water availability and food production, as well as the trade-offs between water recovery, desalination and energy consumption. The opportunity to discover and develop solutions at the boundaries of these very divergent fields could result in a leading position for Saudi research, innovation and industry. Saudi Arabia can take a leading role in development of results that optimize the input of energy for agricultural production and clean water output.

On the humanities front, there is the challenge to develop the interface between the traditional Islamic values of the historically mainly nomadic Arabian Peninsula on the one hand, the highly developed infrastructure of modern Saudi Arabia on the other, and the prosperous and well-travelled Saudi populace. This poses important questions concerning Islamic values and culture in a modern context. Results from research on these areas can be readily embedded in undergraduate and professional education programmes at KAU.

Prince Faisal bin Salman, Governor of Madina, (*right*) receives in his office in Feb. 2015 the KAU team who conducted a study on the volcanic regions in Madina as KAU Vice-President for Graduate Studies and Research (*back*) looks on



History tells of the regular rhythm of the rise and fall of great powers and civilizations. Both Asia and the Middle East had glorious periods of pre-eminence historically but it has so happened that modern technology has been mainly led by Western Europe in the last 300 years. The United States only began the progress that led to its present position of prominence some 100 years ago. From the perspective of the time scale of millennia, the dominance of the West in technology might perhaps be seen to be a transient phenomenon.

Asia is already starting to reclaim its past stature, led by China, Japan and Korea, proving that technological progress is not the sole preserve of the West. If we look back at the flowering of Islamic culture during the period the Moors were in Southern Europe and the Caliphate of the successors of Prophet Mohammed (p.b.u.h) spanned the entire Middle East and Southern Europe, it is clear that Islam has historically provided fertile soil beneficial to a society of intellectual excellence. Ideas and inventions with enduring world impact flowered under Islam at that time.

This can reoccur with the Islamic world and with Saudi Arabia. KAU can be an important agent of change, leading the way with an educational model of

excellence. The convergence of Islamic values, modern technology and the internet provides fertile ground for the grooming of KAU students. As a major university with close to 100,000 students, KAU can be the reliable portal to the world for its students in the first instance, and the students themselves can, in their turn, likewise serve as an important portal for Saudi Arabia.

Photo of the 1st KAU International Advisory Board meeting held on KAU Main Campus



Such a role as an internationalization portal has major implications for KAU. This can be seen as one of the driving forces that led the university to establish the IAB. It is also an important driving force behind the establishment of KAU's first two strategic plans and the current preparation of the third strategic plan. Indirectly, it provides part of the impetus that the university leadership has drawn on to enhance KAU's international reputation that has resulted in increasingly higher international rankings.

Preparing such a large university for strategic re-positioning is by no means an easy feat. It starts with an administration open to ideas, open to and able to implement change. It needs highly qualified, active research faculty who are not only international authorities, but who are also knowledgeable about Saudi Arabia and able to apply their expertise to the country's benefit. Many of the strategic plan initiatives are driven by such considerations. Guided by the university leadership and with the support of the IAB, they will be implemented progressively over the course of the next few years.

KAU Dean of Student Affairs (*4th from right*) and KAU Dean of Admission and Registration (*4th from left*) pose in a photo with new graduates



6 KAU Education

The KAU Education model must be tailored to Saudi Arabia’s national and regional circumstances and requirements. Therefore, the model can be expected to be different from other international universities. However, there are common threads running through the best models of university education despite cultural differences.

In 2007, responding to Singapore’s national need for economic transformation as a high value added society, Nanyang Technological University in Singapore convened a “Blue Ribbon Commission” to undertake a bottom-up review of NTU’s undergraduate education. The recommendations of this Blue Ribbon Commission review have been implemented progressively over many years. It was also a key element of the requirements driving the NTU Campus Master Plan completed in 2010, the recommendations of which are being implemented in phases [5]. Some of the methods and outcomes of the NTU review as well as reviews conducted by other universities could be adapted for KAU. The following sections shall suggest aspects that may be applicable to the development of a KAU Model of Education.

First develop qualities and virtues of the self. So equipped, establish a harmonious and strong family. When all families are strong, the country is resilient and well governed. Only then can we solve the world’s problem successfully - Confucius

Taking heed of the advice of the ancient Chinese sage Confucius, what should be the profile of a KAU graduate?

I am sure many will agree on the following five desired attributes:

- Moral character
- Disciplinary depth and life-long learning

- Creativity and innovation
- Leadership and teamwork
- Professionalism and public service

There may be other possible classifications and combinations but these characteristics are basic to an educated person, whether in Saudi Arabia or Singapore. As Islam is of paramount importance, permeating all aspects of life in Saudi Arabia, the five attributes should be interpreted in the Islamic context.

7 The Importance of Residential Education

I am a fervent believer in the benefits of residential education delivered by teachers who are outstanding role models inculcating the desired values in our graduates. The 18–22 age group attending university is at a formative and impressionable stage. Providing them opportunities to develop in a microcosm of society with light-touch supervision develops social abilities that stand them in good stead when they graduate and proceed to the wide outside world. Residential education requires the organization of residential halls on campus and training of appropriate academic mentors. This being Saudi Arabia, Islam is of paramount significance in all aspects of life including campus life. Maturing into adulthood on an Islamic campus dedicated to the pursuit of knowledge has the additional benefit of showing the youth how they can reconcile traditional Islamic beliefs and values with the activities necessary for a modern society and nation.

There are of course difficulties in implementing residential education in a 100,000 strong student body like that at KAU. However, many of KAU's students are part time. Of the remaining, perhaps the highest performing students can be given priority in terms of eligibility for on-campus residence, especially if they are engaged in scientific or entrepreneurial pursuits. By this means, at least the best of the graduates would receive the benefit of a residential education.

Another important issue relates to the idea of co-educational campuses where men and women study together. This is common among international universities. While an experimental institution such as the King Abdullah University of Science and Technology (KAUST) can obtain special permission for such an educational model, KAU as a mainstream Saudi university is unlikely to be able to do so under prevailing circumstances. While this is a constraint on a broad education, it is reflective of current Saudi society and is readily accepted as such. There is no need to be dogmatic on this topic.

8 Student Governance

Regardless of whether the student resides on or off campus, an effective system of student government is a key to life skills education and effective governance of students in the university. At NTU, there are three categories of student organizations. One is residence based, organized by campus residential halls. This is the most robust of the three categories. Then there are student organizations in each school based on major study disciplines. The third, purely voluntary, are student initiated interest groups covering areas such as music, sports, community service and culture. Above all these organizations is the umbrella organization, the Students Union headed by an elected President. KAU may wish to develop its own model taking references from universities around the world. Two features are important in my view. Fundamental building blocks such as residential halls provide a sense of belonging at a more human scale in a mega-university. A central unified organizational structure that truly represents the students and is regularly engaged by university administration is also required.

The purpose of student government is not only to allow students to prepare themselves for their future adult political environments. It provides opportunities for the natural emergence of student leaders. It is also an effective means of communication between the university leadership and the student community, especially during times of crisis. A case in point being at NTU, where having such a communication mechanism in place proved to be invaluable during the 2003 SARS crisis.

9 A Broad Arts-Science Education as the Foundation

An enquiring mind is a great asset for intellectual curiosity, motivation to explore and life-long learning. In the best universities of the world, a strong foundation in the Arts and Sciences is incorporated in the educational model. This has also been the direction set at the two major Singaporean universities: Nanyang Technological University and National University of Singapore, both of which have risen steadily in rankings in recent years.

For example, at Stanford University, renowned as the source of Silicon Valley, Integrated Humanities was a requirement for all entering freshmen with readings assigned even before arrival on campus. In addition, science requirements were satisfied through course requirements and electives. This broad foundation is common among the very best universities such as the Ivy League in the US, Stanford, MIT and Caltech, as well as the best public universities such as University of California, Berkeley and University of Michigan.

Such a foundation programme would need to take into account local Saudi conditions. There is a rich trove of literary tradition in Arabic to draw upon for the humanities. Islamic art and mosque architecture could perhaps be fertile domains

for the arts, while the rich Islamic and Arab heritages in the fields of mathematics and science could prove rich knowledge resources for the sciences. Islamic history and other regional history might also be considered for inclusion as suitable foundation studies subjects.

Former KAU Vice President for Development (*left*) receives the ABET site reviewers during their visit to KAU



10 Professional Education

For a developing country such as Saudi Arabia, professional education is particularly important. Graduate engineers build infrastructure and staff the growing industries. Business graduates enable enterprises through marketing and finance and accountants assure the markets of transparency and objectivities. Architects, doctors, dentists and numerous other professions can be added to the list. KAU has taken the wise decision of seeking accreditation as far as possible, for such international standards help KAU graduates stand out among the crowd. KAU will, I am sure, continue to enhance the professional education based on international quality standards and assurance. Providing a common Arts-Science foundation to all may however pose a challenge due to curriculum overcrowding. I am sure KAU will find its own solution. In the case of NTU, many specialized courses that overloaded students were eliminated from the curriculum. Instead, the emphasis

was redirected and is now on practical work place experience through internships, which often lead directly to employment.

11 Undergraduate Research and Elite Science and Technology Programmes

A common problem faced by mega-universities such as KAU is the wide spectrum of academic abilities among the large student population. It is clearly necessary to tailor courses and programmes for the majority of students. This however leaves exceptionally capable students in the lurch. They may get bored and distracted by the normal curriculum. Some of these able students may have the potential, with the right preparation, to become the new generation of Saudi academic leaders.

A strong undergraduate research programme is an important component of elite science and technology programmes. It can also serve to kindle interest in research among undergraduates. A good undergraduate research record with publications gives students a distinct advantage when applying to the best graduate schools. To be effective, such a programme should be well funded, open to as many applicants as possible and engage the best research-intensive faculty members as supervisors. This is already possible given the rapid increase of research at KAU.

In addition, intensifying and extending the scope of programmes for the very best of KAU science and engineering students would complement the undergraduate research scheme in the interests of producing the next generation of Saudi academics.

12 Internships

The career opportunities open to KAU graduates will become increasingly diverse with the spread of the effects of globalization. It is no longer cost effective, nor is it feasible, to train graduates for every kind of job. Thus, there is a need for professional education to return to fundamentals. Additional learning is often acquired on the job or by specialized training programmes arranged by employers.

KAU graduates can get a head start with on-the-job learning by interning with employers of interest. Although this is time consuming, it provides a form of learning impossible to duplicate in a classroom. Often, good performers on internship are snapped up by the employers as their worth has already been proven during their internship.

Although the range of industries and businesses in Saudi Arabia may not provide all the varieties of internships desired, an effective means of overcoming this problem is by seeking internships outside the country. Such foreign internships have the added advantage of also providing valuable international experience.

13 International Experience

To prepare students for the globalized environment they will face after graduation, it is very helpful if, during their period of study at KAU, they spend some time; say up to a semester, in one or more foreign countries. The most common arrangement for this is by means of student exchange. As English is becoming the language for international exchange, it is imperative that English standards and language proficiency be maintained at a high level at KAU. It is also important for KAU to develop courses in English for incoming exchange students, as the number under exchange with any partner institution tends to be driven by equity considerations.

A photo taken at University of Vienna during one of the KAU IAB meetings (photo by Guaning Su)



14 Internationalized Education Promoting Understanding of Saudi Arabia to the Outside World

KAU students going international are the best ambassadors for the country. Because of the special position of Saudi Arabia, they also represent the Islamic world. Just as it was an eye opener for the members of the KAU IAB to visit Saudi Arabia, to interact with academically gifted students and dedicated high performing faculty, international experience for KAU students would change foreign countries' perception of Saudi Arabia and its citizens for the better.

KAU President Osama Tayeb (*left*) and KAU Vice-President for Business and Knowledge Innovation (*center*) and KAU Vice-President for Academic Affairs (*right*) during one of the IAB meetings held on campus



15 Adaptation of Best Practices Abroad

Internationalization of KAU education spreads the university’s wings by the frequent presence of its faculty and students on foreign soil. Such contacts often require the support of foreign universities’ leadership. Investing time in developing KAU’s international network to support its educational model provides KAU leadership with opportunities to interact with and observe the operations of renowned and distinguished global universities. Such interactions often yield important “ah ha!” moments of revelation in understanding the practices of good role models. In addition, the development of such networks and links cannot but succeed in raising KAU’s international profile and provide its leadership with case studies from which important KAU initiatives can be launched and ideas adapted.

KAU Vice-President for Graduate Studies and Scientific Research (*right*), KAU Acting President (*2nd right*), Saudi business tycoon Sheikh Saleh Kamel (*2nd left*), and KAU Vice-President for business and knowledge innovation take part in the 10th board meeting of Wadi Jeddah



16 Innovation: Linking up Industry, Faculty and Students

Saudi Arabia did not have an industrial economy until the advent of petroleum as the principal fuel driving the modern technological revolution. Today, modern technology continues to rely heavily on the burning of fossil fuels despite the development of advanced nuclear generation technologies. However, the world is facing an inflexion point.

Increasingly, the world is coming to the realization that the human population on this planet and the technology at its command are now capable of influencing the macro environment on Earth. The rising consciousness of climate change caused by human activity, coupled with development of advanced materials and techniques for power conservation, is now increasingly turning the tide of public opinion in favour of sustainable power generation technologies. Solar energy is approaching parity in cost with conventional fossil fuel fired power plants, wind energy use is widespread, and electric/hybrid vehicles and improved building techniques are reducing the growth of energy consumption. This is a mega-trend of the 21st century and holds both risks and promise for Saudi Arabia.

The obvious risk is the reduction of the importance of petroleum to the world's energy needs, resulting in the worst-case scenario in a collapse of oil prices

adversely affecting the dominating mainstay of the Saudi economy. While this is an unlikely scenario, Saudi Arabia would be well advised to prepare for the day when its position as one of the major producers of the planet's dominant energy source is no longer to be taken for granted. Among other things, KAU should ensure that its graduates are well prepared to contribute to the economic transformation of Saudi Arabia that is likely to take place within their working lives. One possible opportunity is tapping the Arabian Peninsula's abundance of sunlight to develop solar power plants in the largely empty desert interior.

Preparation for a post-oil future for Saudi Arabia has already begun. Specialized courses on these issues should be provided to KAU students on topics such as Sustainable Energy, Ecology of the Arabian Peninsula, the Water-Energy-Industry nexus, Advanced Materials and Economics of Sustainability.

At the same time, KAU must lead the way in generating innovations for the future diversification of the Saudi economy. A focused approach as KAU develops its research intensity is necessary to complement the national economic development plans. Entrepreneurship education should be provided to those who are so inclined so as to maximize the likelihood of practical applications of research results. In so doing, engagement of existing industries is necessary but is not in itself sufficient. To give these efforts a boost, industries where Saudi Arabia has comparative advantage should be engaged, even if they are foreign, since many of the industries needed for Saudi Arabia may not exist in the country yet. With the financial strength of Saudi Arabia and research excellence in the university, combined with students inclined towards innovation and enterprise, the work being accomplished at KAU today can lay the groundwork for the industries of Saudi Arabia tomorrow.

In this context, two programmes can be considered. One programme we found useful in Singapore is to develop an Entrepreneurship Minor Programme open to all students. It helps to create an enterprising entrepreneurial atmosphere on campus. Whether the students become entrepreneurs on campus, upon graduation or subsequent to gaining working experience is not important. The main result is planting the seeds of entrepreneurship in KAU graduates. The design of such a programme should however be tailored to the specific needs of the university and the nation.

The other programme that is helpful is to build incubators or accelerators on campus that allow researchers and innovators, including undergraduates, to trial their ideas and apply their research to the real world through the building of prototypes and demonstrators to spark the interest of customers, industry and investors. It takes a considerable period of time to build such mindsets and habits among students and professors and it is therefore important to start early to build the habit on campus and to engage industry, angel investors and venture capital. Wadi Jeddah, set up by KAU to commercialize KAU innovations and to encourage innovation and entrepreneurship, links KAU closely with industry, a most worthwhile objective.

17 Building National Resilience

An important role of any national university such as KAU is to build national resilience as a hallmark of an excellent education.

National resilience requires first of all a confident self-image. Regardless of the diversity and range of opinions in the world concerning Saudi Arabia, it is important for Saudi citizens to have a consistent self-image that debunks any negativity in the perception of the rest of the world. Such an effect is best developed in the Arts-Science Foundation Courses that all KAU graduates should go through. For example, in studying the religion of Islam, beyond learning of the rules and requirements and studying the Holy Quran, KAU graduates should be able to engage in intellectual discussions on religions other than Islam and if need be, explain to adherents of other religions how Islam serves as guidance for life and contributes to the common good. As another example, students should learn how Saudi Arabia works as a monarchy. They should also understand the benefits and pitfalls of the endowment of rich petroleum reserves and the necessity to create a future Saudi Arabia that plays its role in sustaining the Earth's resources. There is no need to be dogmatic in building national resilience in this manner. It should be structured, not as propaganda, but as objective learning that is helpful for Saudi citizens to ensure kinship with their fellow citizens and solidarity within the nation.

18 Conclusion

In this chapter we have outlined how educational excellence can be built in King Abdulaziz University. As doctoral education is closely tied to the research enterprise, it is left to the appropriate chapters on research. This chapter therefore focuses on undergraduate and professional education. Another area left uncovered is education in the practice of medicine which is normally the preserve of the university medical sectors and hospitals.

A discussion of national requirements of Saudi Arabia was followed by proposals to build 'excellence in education' from its foundation building blocks upwards. We started with desired attributes of KAU graduates and advocated a strong Arts-Science Foundation for all students. This was accentuated by 'undergraduate research for selected students', 'residential education' and 'international experience'. Life skills were practiced through 'student governance'. Finally, we touched on how we can maximize the societal contributions of KAU and its graduates through 'innovation and entrepreneurship' thereby helping to develop next generation industries and most importantly of all, adding to and reinforcing the 'national resilience' of Saudi Arabia.

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