



ECONOMIC RESEARCH

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GCC Economics

Chief Economist
Dr Jarmo T. Kotilaine
Tel.: +973 1754 9860
j.kotilaine@ncbc.com

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EDUCATION IN GCC

Shaping the future

The extraordinary growth spurt of the GCC countries in recent years has been accompanied by an unprecedented awareness of the finite nature of the region's oil wealth and the need to invest it in sustainable economic development. Education is now recognized as never before for its critical importance in this regard. Historically, the region has suffered shortages of critical skills coexisting with significant levels of underemployment among the local labor force. Not only is education essential for rectifying these anomalies, but it also represents an opportunity to substantially boost the productivity of the region's large young population. Education is now set to remain a key spending and policy priority across the region in the years to come. Its relative importance looks certain to grow as the GCC countries deal with the economic correction caused by the global slowdown and falling oil prices.

- **The Gulf countries have a history of failing to produce sufficient numbers of qualified professionals for their needs.** This has resulted in both persistent unemployment and a heavy reliance on imported labor. In some Gulf countries, expatriates now constitute an overwhelming majority of the workforce. At the same time, the region's economies have been fairly unsuccessful in capitalizing on the investment made in the education of girls in spite of their typically high level of educational attainment
- **Education in the GCC is a relatively new sector but it has become a key spending priority in most countries.** Modern educational institutions emerged in the course of the 20th century. To date, education has been very heavily reliant on the public funding, but private sector participation is now on the rise along with significant new infusions of government funds.
- **Unprecedented attention is being devoted to upgrading secondary and higher education, as well as various vocational training programs, in an effort to increase the general skill level and quality of the labor force.** Apart from the obvious increase in educational expenditure, investments have also been channeled into broad reforms of the curricula and to efforts to increase access to education by various means. Most countries in the region have curricula that largely match international norms, but Saudi Arabia has traditionally place a much stronger emphasis on instruction in Arabic and Islam.
- **A number of new initiatives in the region are explicitly designed to import international best-practice standards and to create a more competitive marketplace in education.** One example is the Qatar Education City, which houses campuses of six US universities. A number of foreign universities have set up campuses elsewhere in the region as well. The new USD12.5bn King Abdullah University of Science and Technology in Saudi Arabia will mark a significant break from past traditions in the Kingdom
- **The key challenge for the region remains translating a fairly high level of investment in education into quality outputs.** Although progress is being made in this regard, some of the necessary steps go beyond the education sector itself. In particular, it will be essential to create a system of incentives that offers better rewards to higher skilled people. The central role of the public sector in employing locals has historically been a disincentive in this regard. However, the private sector is now growing and even public sector jobs becoming more competitive

Introduction

The favourable demographic profile of the GCC coupled with the huge oil windfall in recent years presents a unique opportunity for investment in human capital

A growing share of government spending is being channeled to build new schools, colleges and universities

This renewed focus on human capital development and innovation in education is essential for sustainable diversification of the GCC economies

The dramatic rise in oil prices until recently has presented the Gulf oil producers with an extraordinary windfall (estimated to be USD647bn in the last five years) for the second time since the oil crises of the 1970s-1980s. There has been an unprecedented determination to invest this boon with a view to fostering sustainable development through economic diversification. The mistakes made in the wake of the first oil boom have increased awareness of the need to manage the oil wealth better, inspired by a growing awareness of its finite nature. The experiences of Bahrain, Dubai and Oman, which are close to exhausting their hydrocarbons reserves, have provided concrete examples of the need for, and benefits of, new thinking. A key element of this new approach is greater attention to one of the region's greatest resources: its young people. The demographic profile of the Gulf countries, with a very low median age, represents both an urgent challenge and an exceptional opportunity to harness these productive forces in a way that will ensure long-term development far beyond the traditional oil-based strategy.

The realization of this imperative has led to unprecedented attention being devoted to education and training. New schools, colleges and universities are being built at a record rate and curricula revised across the region. Impressive new financial allocations have been made by all GCC governments and at the same time, regulations have been revised to allow for easier and greater private sector participation, including entry by foreign institutions. For instance, the 2009 budget of Saudi Arabia, approved on 22 December, increased education spending by SAR17bn to SAR122.1bn, which represented a remarkable 26% of total government expenditure and constituted the largest single category. The government made provisions for the construction of 1,500 new schools in addition to another 3,240 schools which are currently being built. In addition, some 2,000 schools are to be renovated. The largest venture in the area of higher education was the completion of a SAR12bn campus at the King Khaled University. The budget further provided for the establishment of a Princess Norah University for women, as well as a Medical City at Riyadh's King Saud University.

The focus on human capital development has also increasingly led the GCC governments to question the way education is being provided, as well as its quality and appropriateness for the needs of the region's economies. References are routinely made to the Golden Age of Islam in the Middle Ages when the Arab World found itself on the cutting edge of intellectual inquiry and scientific research. Scholars of the Middle East constituted a critical bridge between achievements of the ancient Greeks and the scientific revolution of the Renaissance. Having been the world's leading center of science for centuries, the Middle Eastern countries are once again reviving their long-dormant ambitions in the spirit of the Qur'anic command to seek knowledge.

Innovation in the area of education has been particularly notable in Bahrain, Qatar and the UAE but considerable strides are being made across the GCC. Nonetheless, reforming established practices is not always easy and progress in some cases has proven very gradual and the results mixed. The good news is that the determination to persist is likely to make education-related spending and the eventual returns from it a key driver of the Gulf economies in the coming years and beyond as well as an important counter-cyclical factor, at least in the near term.

The importance of education for sustained economic development

Education is widely recognized as a key precondition for successful economic modernization and growth

A great deal of research points to a strong causal connection between investment in education and economic growth. The recent *Growth Report* of the World Bank, based on extensive empirical analysis, captured this relationship well: "Every country that sustained high growth for long periods put substantial effort into schooling its citizens and deepening its human capital. Conversely, considerable evidence suggests that other developing countries are not doing enough."¹ Education contributes to economic growth "both through the increased individual productivity brought about by the acquisition of skills and attitudes and through the accumulation of knowledge".² Not only does education increase the productivity of labor in an economy, but it also raises the quality of jobs and contributes to social welfare more generally.

Education also brings considerable indirect benefits. Thus for example research and development (R&D) is a critical driver of productivity improvements. R&D investments in turn rely not only on the availability of funding but also on availability of sufficient skilled labor. In the absence of adequate R&D investments, economies risk being stuck in a low-skill, low-quality trap with stagnant growth. Individuals do not invest in education, because they do not expect firms to make use of the resulting skills, while firms do not seek to innovate, because they cannot expect to have the requisite skills base to draw upon. Such a situation can easily become self-reinforcing.

Sustained investment is needed to ensure not only adequate access to education but also adequate quality standards

A key challenge of investing in education is the inherently long-term nature of both the financial commitment and the returns. The benefits accruing in higher growth are not always linear and never immediate. For example Ireland's transformation into a financial centre was made possible by a large pre-existing supply of qualified people. However, the country experienced decades of exporting its human capital on a large scale before this point was reached. The contribution of India's highly qualified engineers to the economy increased dramatically once they became the critical factor in enabling the country to find its niche in software services.

Just as important as the investment in education, however, is its quality. The Commission for Growth and Development found that "the quantity of education (years of schooling, rates of enrollment) in many countries was more impressive than the results: literacy, numeracy, and other cognitive skills."³ But even quality itself is not sufficient in isolation as "the effect of educational quality on growth seems significantly larger in countries with a productive institutional framework, so that good institutional quality and good educational quality can reinforce each other. Thus, the macroeconomic effect of education depends on other complementary growth-enhancing policies and institutions."⁴ Training its population well does in itself guarantee that a country will capture the returns such an investment can potentially yield. If an economy is not capable of absorbing its skilled workers, a risk exists that it becomes an exporter of human capital. Past examples of this abound. Lastly, it is generally agreed that the timing of education is critically important. In particular, investments made at the early stages of a

¹ Commission on Growth and Development, *The Growth Report: Strategies for Sustained Growth and Inclusive Development*, Conference Edition, The International Bank for Reconstruction and Development / The World Bank, Washington, D.C., 2008, p. 37.

² *A World Bank Review: Priorities and Strategies for Education*, The International Bank for Reconstruction and Development / The World Bank, Washington, D.C., 1995, p. 20

³ Commission on Growth and Development, *The Growth Report*, p. 8.

⁴ Eric A. Hanushek and Ludger, Wößmann, *Education Quality and Economic Growth*, The International Bank for Reconstruction and Development / The World Bank, Washington, D.C., 2007, p. 11

child's development raise subsequent returns, since "children must learn how to learn."⁵ Prioritizing higher education is important and can be effective but the ultimate success of those investments is to a great extent determined by the skills and attitudes acquired prior to college.

Public expenditure on education

In view of the high social returns from education, the sector receives is rightly recognized as a public expenditure priority in the region

The funding of education in the GCC countries is primarily reliant on public expenditure. The role of private institutions, albeit growing, remains fairly marginal. Although the relative absence of private provision has had adverse implications for competition, the recognition of education as a public expenditure priority is on the whole positive. The social return to education is generally thought to exceed the private return. In other words, the economic contribution of educated people is not fully captured in their salaries. At the same time, excessive reliance on the private sector could in practice make it impossible for people to obtain a level of education warranted by their talents. Faced with the full market cost, many would be able to afford to go to school or university to the extent that they would like to. In addition to education itself being provided free of charge in the Gulf, additional public support is frequently available in the form of free textbooks, stationery and uniforms to school children. Qatar even offers such benefits to private school students.

Even by international standards, the GCC countries have traditionally maintained high levels of public spending on education

Historically, the proportion of public funds devoted to education in the Gulf has been fairly respectable by international standards. Saudi Arabia has maintained the highest rate of public expenditure with a steady 6-7% of GDP being ploughed into education in recent decades. This figure is clearly ahead of the global weighted average of 4.9%, as well as of the figures for most OECD countries. The situation in Kuwait has been largely comparable. Oman, which started its public education program in the 1970s, has increased expenditure from 2% then to close to 4% now. In Bahrain, the public education budget has remained fairly steady at 3-4% of GDP. The lowest proportion of government expenditure on education as percentage of GDP is observed in the UAE where the average figure for 1995-2003 was 1.7%.

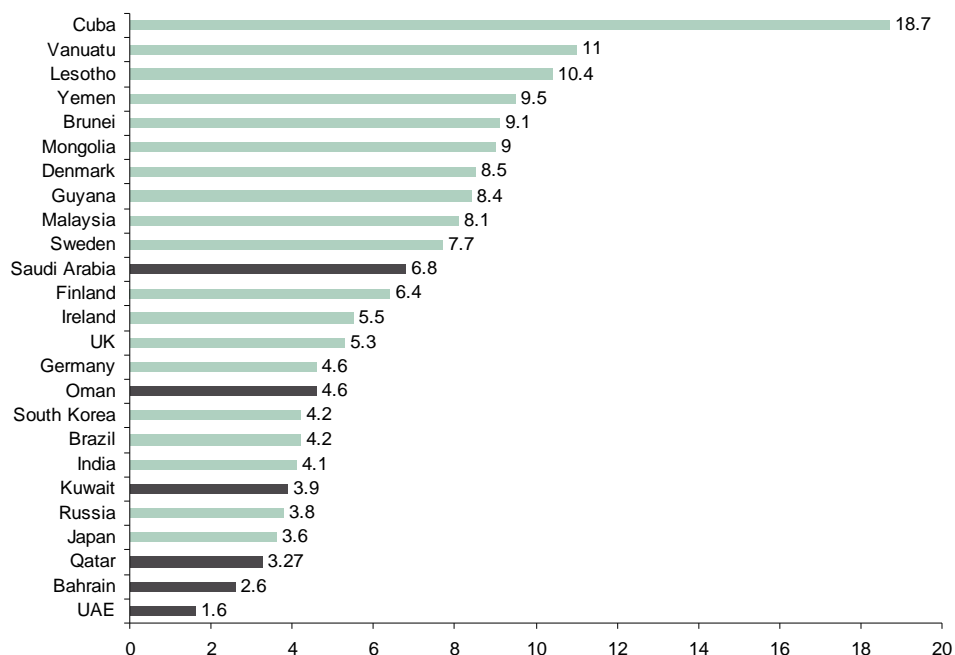
Table1 : Average of public expenditure in education as a percentage of GDP

| Country | 1965-74 | 1975-84 | 1985-94 | 1995-2003 | Literacy rate (latest in %) |
|---------------------------------|---------|---------|---------|-----------|-----------------------------|
| Bahrain | - | 3.3 | 4.1 | 3.6 | 86.5 |
| Kuwait | - | 4.1 | 7.1 | 6.3 | 93.3 |
| Oman | - | 2.1 | 3.6 | 3.9 | 81.4 |
| Qatar | - | 3.6 | 4.0 | 3.3 | 89.0 |
| Saudi Arabia | 3.6 | 6.7 | 7.2 | 6.3 | 78.8 |
| UAE | - | 1.3 | 2.0 | 1.7 | 77.9 |
| International comparison | | | | | |
| China | 1.0 | 2.4 | 2.3 | 2.3 | 91.0 |
| Indonesia | 2.6 | 2.1 | 1.1 | 1.2 | 90.4 |
| Malaysia | 4.1 | 6.1 | 5.5 | 6.2 | 89.0 |
| Philippines | - | 1.8 | 2.4 | 3.4 | 93.0 |
| Egypt | 4.7 | 5.4 | 4.8 | 5.6 | 71.4 |
| USA | 7.0 | 6.7 | 5.2 | 5.4 | 99.0 |
| United Kingdom | 5.0 | 6.3 | 5.0 | 5.0 | 99.0 |
| Ireland | 5.0 | 6.0 | 5.2 | 4.3 | 99.0 |

Source: World Bank, NCBC Research

⁵ Commission on Growth and Development, *The Growth Report*, p. 38.

Figure 1: Public expenditure as a percentage of GDP on education

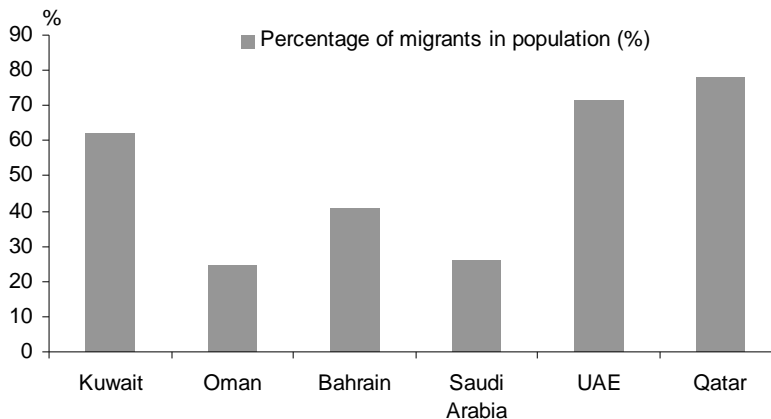


Source: UN HDR 2002-03, UIS

Differences in education spending as a percentage of GDP across the GCC are in large part due to different levels of migrant workers in the various countries

It should be noted, however, that the figures on education expenditure are not directly comparable due to the differing weight of expatriate workers across the region. As a general principle, countries with the largest populations of migrants, who do not have their children living with them or whose children do not have access to free education, tend to spend a lower proportion of their GDP on education. The UAE is a particularly obvious case in point, a pattern that is further amplified by the country's established network of private schools. The highest levels of educational expenditure in proportional terms are observed in Saudi Arabia and Oman, which have the lowest ratios of migrants in their population. The gap of two percentage points between the two countries can in turn be explained by the fact that the Kingdom spends substantial amounts of money on higher education, which remains at its early stages in Oman.

Figure 2: Share of migrants in population of GCC countries (%)



Source: UNESCO Institute of Statistics, NCBC Research

The recent oil windfall has spurred a new awareness of the need to invest in education

A growing number of scholarship schemes are being offered by national governments to fund higher education programmes in the GCC or abroad

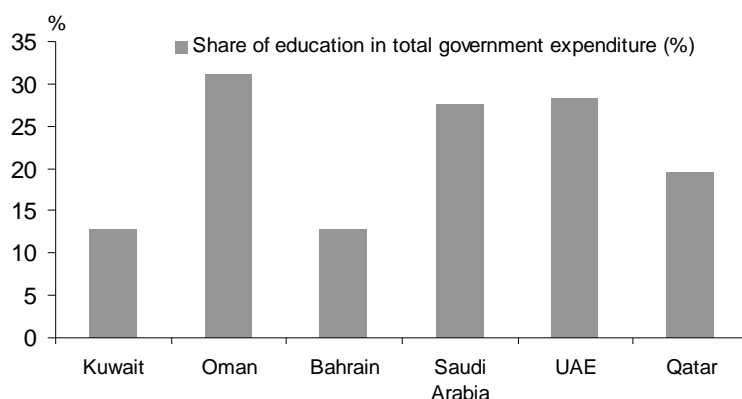
The recent oil windfall has enabled the GCC countries to step up their spending on education infrastructure. Such efforts are now driven by a substantial change in the priority accorded to education. The most high-profile ventures are taking place in the area of higher education but increasing attention is also being devoted to technical and vocational training as well as secondary and even primary education. Perhaps the most impressive of these new initiatives is the Qatari Education City, which houses the branch campuses of several prestigious US universities. The Qatar Foundation, a non-profit organization for promoting higher education, which was set up in 1995 under the auspices of the Emir of Qatar, bears the entire cost of the Education City. Comparable ventures are afoot or under consideration elsewhere. Increasingly, efforts to upgrade education in the region are guided or driven by ambitious national plans which both seek to modernize the curriculum and improve the facilities available for education.

The GCC countries have in addition initiated various scholarship schemes to boost access to education outside their domestic institutions. A good case in point are the recently instituted King Abdullah scholarships of the Saudi government which fully fund select Saudi students wishing to study for a master’s degree or a doctorate at foreign universities. The build on a tradition going back to 1928 when Saudi Arabia first sent a group of 14 students to study in Egypt. By the early 1980s, more than 10,000 Saudi students were studying abroad on government scholarships. In recent years, the government has both boosted funding for overseas studies but also made it more targeted, increasingly focused on degree programs in disciplines deemed to be of importance. For instance in November 2008, King Abdullah announced a further 50% increase in funding for Saudi students studying abroad. A number of other scholarship schemes exist across the region to give bright students access to higher education, such as the Prince’s scholarships in Bahrain. In 2000, Qatar set up a pioneering Qatari Centre for Talented and Creative Students.

| Country | 2003 | 2004 | 2005 | 2006 | 2007 |
|--------------|--------|-----------------|-----------------|-----------------|-----------------|
| Saudi Arabia | 49,609 | 55,832 (13%) | 69,899 (25%) | 87,164 (25%) | 96,483 (11%) |
| Oman | 382 | 418 (9%) | 490 (17%) | 560 (14%) | 654 (17%) |
| Kuwait | 684 | 740 (8%) | 789 (7%) | 950 (20%) | 1,219 (28%) |
| Bahrain | 125 | 136 (9%) | 156 (15%) | 159 (2%) | 171 (8%) |

Source: UNESCO Institute of Statistics, IMF, central banks, NCBC Research

Figure 3: Share of education in public expenditure



Source: UNESCO Institute of Statistics, NCBC Research

The fact that intermediate education has lagged behind higher education, whose standards are increasingly converging with international norms, has necessitated the introduction of bridge programs in various countries

One of the challenges for the Gulf countries is ensuring that the generous public expenditure in this area is properly targeted and efficiently used in a manner that best caters to the evolving needs of the region's economies. There is growing recognition of the relative failure to do this successfully to date, something that a number of schemes are now beginning to address. The educational culture of the Gulf countries is widely faulted by having prioritized rote learning over independent intellectual inquiry. Students have historically been encouraged to merely memorize instead thinking creatively. The lack of creative thinking has been reflected in the relatively modest number of Arab scientists.

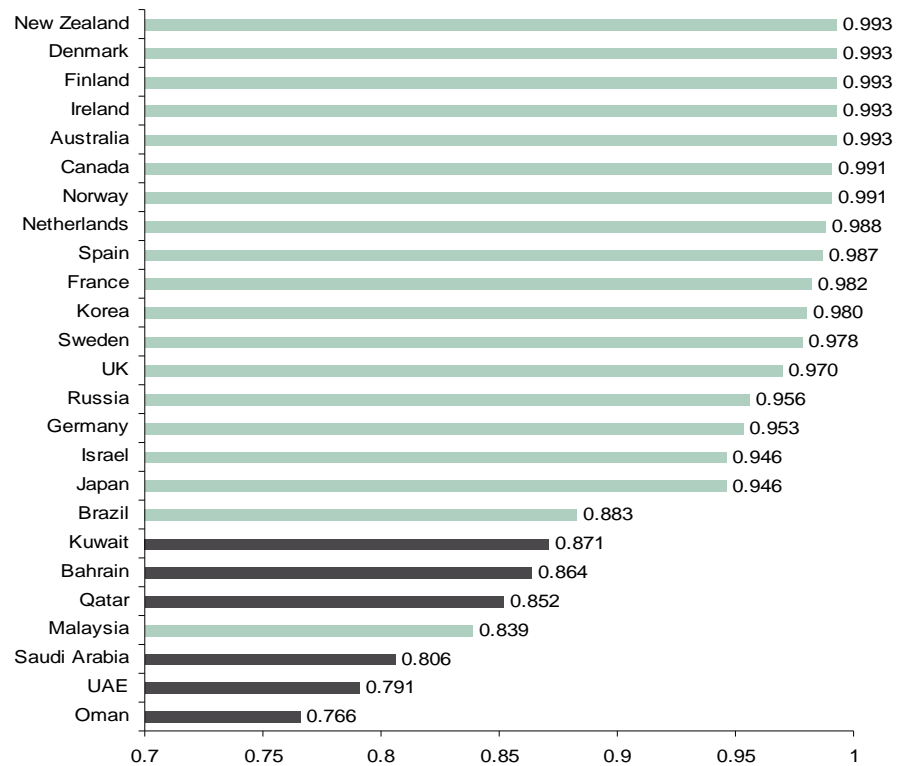
A particular challenge is ensuring that high school graduates are adequately prepared for higher education where standards are increasingly converging with international levels. At the moment, this challenge is primarily addressed through various catch-up programs. For example, all Emirati public high school graduates are required to take a foundation year to acquire an adequate knowledge of English and mathematics before they embark on their university studies. The Qatari government has set up a one-year intensive academic bridge program, which equips students with the skills required to get into university. In Saudi Arabia, students at the elite King Fahad University of Petrochemicals and Engineering are required to complete a similar curriculum during their first year. A similar facility has been set up at the new Al Faisal University in Riyadh.

Past experiences have shown that properly targeting of public expenditure on education is crucial for generating the maximum benefits from the investment

Targeting expenditure appropriately is essential for maximizing the quality of the output produced by the financial investments channeled into education. International comparisons suggest that there is no direct correlation between the amount of public funds spent on education and the returns to that investment. China, which has devoted an average of only 2.3% of its GDP on education over the last three decades, has not only successfully created the workforce for the country's impressive transformation but has done this with negligible private sector participation. Indonesia, with even less spending in relative terms, has achieved a 90.4% literacy rate. By contrast, Egypt has managed to achieve only 71% literacy in spite of allocating 4.5-5.5% of GDP on education.

Analysis of the education component of the UN Human Development Index highlights the lack of direct correlation between the budgetary resources devoted to education on the one hand and the literacy and educational attainment levels on the other. The education index of the HDI measures constitutes a weighted average of literacy and gross enrolment in primary, secondary and tertiary education. The most successful countries in the region in this regard are Kuwait, Bahrain and Qatar, all of which have a history of private as well as public provision, as well as a long tradition of reforming the education system.

Figure 4: Education component of the UN Human Development Index



Source: UN HDR 2007-08

Educational attainment levels

Even though the GCC countries have made significant progress in terms of educational attainment, they still lag behind the West, albeit partly due to the large expatriate population

In spite of impressive progress in boosting education attainment levels, the Gulf countries still lag behind the West, although the situation is in part attributable to the large proportion of expatriate manual laborers in the local population. In aggregate terms, some 40-50% of the GCC workforce still only has at best primary education. Whereas 32% of the workforce in Kuwait has no formal schooling, the illiteracy rate in the GCC workforce hovers around 5-10%. Just under one-third of the Saudi labor force has completed only primary education, which along with that for Qatar is the highest proportion in the region. Also, the proportion of people with diplomas (indicating proficiency in vocational training and technical education) is marginally higher in Saudi Arabia -- around 7.5%, compared to about 5% for its GCC peers. In the UAE and Qatar, the labor force is largely composed of workers with secondary education (around 40% of the total).

Table3: Educational attainment of the GCC labor force

| | Saudi Arabia | UAE | Kuwait | Qatar |
|------------------|--------------|------------|------------|------------|
| Illiterate | 6.5 | 10.1 | 31.8* | 6.8 |
| Read & Write | 15.3 | 15.1 | 0.0 | 19.6 |
| Primary | 32.2 | 12.7 | 7.7 | 27.5 |
| Secondary | 17.9 | 40.8 | 38.5 | 18.8 |
| Diploma | 7.4 | 4.6 | 5.4 | 4.9 |
| University Level | 19.6 | 16.6 | 15.7 | 22.3 |
| Ph.D. | 0.6 | 0.0 | 1.0 | 0.2 |
| Others | 0 | 0.0 | 15.7 | 0 |
| Total | 100 | 100 | 100 | 100 |

Source: ILO Laborsta, annual reports by respective government agencies

* does not have formal education (can read and write)

The fortunes of the GCC economies rest critically on their ability to capitalize on their demographic opportunity

Demographics provide an opportunity

The age structure of the GCC countries constitutes one of their greatest assets, as well as one of their greatest challenges, from the viewpoint of economic modernization. The median age in the largest economy of the region, Saudi Arabia is only 21.5 and even that is bested by Oman's 18.9 years. Also elsewhere in the region the figures are fairly low by international standards. The Qatari median is 30.7 years, followed by the UAE's 30.1. A remarkable 38% of the Saudi population is under the age of 14 years, whereas the corresponding proportion in Oman is as high as 43%. While this state of affairs will ensure an ample flow of labor going forward, it also requires an appropriate infrastructure for equipping the region's youth with right set of skills when they enter the job market. The economic future of the Gulf countries critically hinges on their ability to harness this plentiful resource. Moreover, meeting this challenge with success could one day turn the young people of the Gulf into a key comparative advantage of the region. A relevant point of comparison is Ireland, which, after centuries of underutilizing and exporting its human capital on a large scale, relatively quickly found a way of channeling it into the country's impressive transformation into the "Celtic Tiger."

The basic demographic indicators in the Gulf significantly enhance the potential for such investments to yield returns. Life expectancy at birth in the region is in excess of 75 years, which is comparable to developed nations. Literacy rates are as high as 93% in Kuwait and still a fairly respectable 78.8% in Saudi Arabia and thus in all cases ahead of most other emerging markets.

High literacy and life expectancy levels constitute a good basis for additional investments in education

Table4: Demographic characteristics of GCC countries

| | Saudi Arabia | UAE | Kuwait | Qatar | Oman | Bahrain |
|-----------------------------|--------------|------|--------|-------|------|---------|
| Total Population (thousand) | 28147 | 4621 | 2597 | 825 | 3312 | 718 |
| Population growth rate | 1.9 | 3.8 | 3.6 | 1.1 | 3.2 | 1.3 |
| Migrants (thousand) | 5576 | NA | 1291 | NA | 577 | 235 |
| Net Migration rate/ 1000 | -6.8 | 24.4 | 16.4 | -2.3 | 0.33 | NA |
| Sex Ratio (male/ female) | 1.15 | 1.95 | 1.51 | 1.74 | 1.24 | 1.18 |
| Life Expectancy at birth | 76.1 | 75.9 | 77.5 | 75.2 | 73.9 | 74.9 |
| Male | 74.1 | 73.3 | 76.4 | 73.5 | 71.6 | 72.4 |
| Female | 78.2 | 78.6 | 78.7 | 76.9 | 76.3 | 77.5 |
| Literacy rate – Total | 78.8 | 77.9 | 93.3 | 89.0 | 81.4 | 86.5 |
| Male | 84.7 | 76.1 | 94.4 | 89.1 | 86.8 | 88.6 |
| Female | 70.8 | 81.7 | 91.0 | 88.6 | 73.5 | 83.6 |
| Median Age – Total | 21.5 | 30.1 | 26.1 | 30.7 | 18.9 | 29.9 |
| Male | 22.9 | 32.0 | 28.0 | 32.8 | 21.3 | 33.0 |
| Female | 19.8 | 24.6 | 22.6 | 25.4 | 16.6 | 26.4 |
| Age Structure (%) | | | | | | |
| 0-14 years | 38.0 | 20.5 | 26.6 | 21.8 | 42.7 | 26.4 |
| 15-64 years | 59.9 | 78.6 | 70.6 | 76.8 | 54.5 | 69.8 |
| 65 and above | 2.4 | 0.9 | 2.9 | 1.4 | 2.8 | 3.8 |

Source: CIA Factbook

In practice, however, the region has struggled to employ its entire youth productively. Saudi Arabia in particular has a long history of relatively high – double-digit – open unemployment. At the same time, many key sectors of the economies have been critically reliant on imported labor.

Limitations of the educational system has made the GCC region heavily reliant on expatriate labor in spite of its favorable demographics

Migrants in the population

One of the defining characteristics of the Gulf economies has been their persistent heavy reliance on migrant workers in spite of the favorable demographic indicators. This pattern, the seeds for which were sown after the discovery of oil, dates back to the 1960s and especially the first oil boom in the early 1970s, when the region's countries channeled their oil windfall into labor-intensive infrastructure projects. In the absence of suitably skilled domestic workers, the necessary labor was imported from various Arab and Asian countries. The proportion of migrants in the region's population rose from 4.4% in 1960 to 22.6% in 1975 and subsequently climbed to 37% in 2005. The bulk of the migrants were manual laborers, initially mainly from neighboring countries such as Egypt, Yemen and Palestine, but the region increasingly also began to attract highly skilled professionals.

Table5: Growth of migrants as % of population in the GCC region

| Countries | 1960 | 1970 | 1980 | 1990 | 2000 |
|--------------|------|-------|-------|-------|-------|
| Bahrain | 17.1 | 17.2 | 29.8 | 35.1 | 37.8 |
| Kuwait | 32.6 | 62.3 | 69.6 | 72.4 | 62.2 |
| Oman | 5.6 | 5.4 | 15.2 | 24.5 | 24.8 |
| Qatar | 32.0 | 61.6 | 72.2 | 79.2 | 76.0 |
| Saudi Arabia | 1.6 | 6.2 | 20.0 | 29.0 | 23.9 |
| UAE | 2.4 | 29.3 | 70.8 | 71.2 | 70.4 |
| GCC | 4.39 | 13.25 | 29.40 | 37.17 | 33.02 |

Source: UN ESA Population Division

By now, large numbers of expatriates have seemingly established themselves as a permanent feature of the local labor markets. In Saudi Arabia, some 5.5 million out of the total population of 28 million are non-residents as of July 2008, most of them in the working age group of 14-64 years. In Kuwait, the percentage is almost 50%. In some countries, migrants have become an overwhelming majority of the local population. The highest figure is in Qatar at around 78.3% but even in the much larger UAE economy, the proportion is a remarkable 71.4%. This development pattern has had the unfortunate consequence of allowing the region to forge ahead without making greater investments in human capital. In many sectors, internationally low productivity levels have been able to persist because of the low cost of plentiful imported labor. Turning the tables in this regard will be one of the key challenges for the region's economies.

Table6: Distribution of expatriate population across the GCC states in 2005

| Countries | Population | Expatriates | % Share of Expatriates in Population |
|----------------------|------------|-------------|--------------------------------------|
| Bahrain | 727,000 | 295,461 | 40.6 |
| Kuwait | 2,687,000 | 1,668,991 | 62.1 |
| Oman | 2,567,000 | 627,571 | 24.5 |
| Qatar | 813,000 | 636,751 | 78.3 |
| Saudi Arabia | 24,573,000 | 6,360,730 | 25.9 |
| United Arab Emirates | 4,496,000 | 3,211,749 | 71.4 |
| GCC | 35,863,000 | 12,801,253 | 35.69 |

Source: UN ESA Population Division 2005 data

Labor market

The reliance on expatriates is heaviest in the most labor-intensive sectors of the economy, notably construction followed by retail and wholesale trade. The construction typically sector provides between 20% and 40% of total employment in the region. In Saudi Arabia, the

proportion is as high as 38.7%, as compared to 20% in UAE and 35% in Oman. By contrast, in the hydrocarbons sector, local workers have a much stronger presence. However, although oil and gas contribute almost half of the regional GDP, the sector only employs some 10-15% of the work force. The same problem applies to financial services, where local workers are also strongly represented. However, in spite of the many ambitious financial center projects in the region, the sector still only employs between 1% and 2% of the labor force.

Labor-intensive sectors, such as real estate and construction, rely heavily on expatriate labour. By contrast, financial services, hydrocarbons and the public sector are dominated by GCC nationals

The most labor-intensive segment of the economy where GCC nationals dominate is the public sector, historically an important shock-absorber during economic downturns. However, attempts to diversify the region's economies and to boost productivity levels have tended to reduce the traditional reliance on government jobs. A total of just under 300,000 public sector jobs were created for Saudi nationals during the decade 1996-2006, which boosted the overall government employment by 30%. At the same time, the private sector grew by 26%. During 1996-2001 when oil prices were low, the respective growth rates were 22% and 10%. The government sector currently accounts for some 14% of the total Saudi labor force. Within it, the proportion of Saudis is has consistently been just over three-quarters, which represents the largest pool of Saudi workers in any sector.

Table7: Distribution of labour force among major sectors

| Sectors | KSA | UAE | Qatar | Oman |
|------------------------------------|------|------|-------|------|
| Agriculture | 7.1 | 7.3 | 2.7 | 9.5 |
| Mining and Quarrying | 1.4 | 2.9 | 4.1 | 2.0 |
| Manufacturing | 11.0 | 12.7 | 9.2 | 10.8 |
| Construction | 38.9 | 20.2 | 26.8 | 34.7 |
| Wholesale, Retail trade and Repair | 24.8 | 18.9 | 12.4 | 16.2 |
| Financial services | 1.9 | 1.2 | 1.1 | 0.3 |
| Others | 14.9 | 36.8 | 43.7 | 26.5 |

Source: Respective central bank's annual reports

The two leading sectors in the region in terms of employment - construction and wholesale/retail trade -- require relatively low-skilled labor in large numbers. This has tended to be supplied by low-cost expatriate, primarily Asian workers. Largely as a result, the dominance of foreigners as a proportion of the workforce is far higher than their share of the total population. Expatriates constitute a majority of the labor force in almost all of the GCC countries, including Bahrain and Saudi Arabia where the proportion, in spite of being the lowest in the region, still hovered around 50% and 65% respectively in 2004. While in Kuwait foreigners constituted 82% of the workforce, the figure came close to 90% in the UAE and Qatar.

GCC governments have issued regulations designed to limit the role of foreign labor in ad bid to boost employment of nationals

The high proportion of migrant employees reflects the fact that, in spite of growing investments in education, the local population has not been able or willing to meet the labor needs of the fast growing economies of the region. Traditionally, the region's governments have sought to address the issue through various policy measures, most importantly quotas and quantitative targets designed to boost labor market participation by the locals. The region's governments are seeking to limit the use of foreign labor to specializations where qualified local are not available in sufficient numbers. Such efforts are bearing some fruit, albeit slowly. For example in Saudi Arabia the overall level of Saudization in private companies stood at 13.1% at the end of 2007, as compared to 12.8% in 2006.

In particular, this strategy has been found unduly restrictive during times of economic expansion. Moreover, it has repeatedly run into other problems, which the new emphasis on education and training is hoping to address:

GCC labor markets are characterized by a significance mismatch between the local skills base and the needs of the economy as well as by low female employment

Local employment suffers further from entrenched attitudes and high reservation wages

Females have consistently outperformed males in educational attainment levels but lag far behind in labor market participation

- The local skills base has been limited due to the limitations of the education system. Thus, the region's schools and universities have struggled to produce graduates with the right skills set in sufficiently large numbers. This in spite of the fact that in Saudi Arabia the proportion of university graduates in the local population increased from 3.6% of the labor force in 1980 to 19% in 2000.
- The region's countries have generally met with considerable success in female education, whose attainment levels in fact typically exceed those of boys. However, female employment still lags far behind male employment. It varies between 16% of the labor force in Saudi Arabia and Qatar and 26% in Kuwait. This means that many positions that could be filled with qualified locals are not. The traditional attitudes in this regard are changing but this will inevitably be a gradual process.
- The dual nature of the labor market has arguably served the need of economics marked by sharp cyclical volatility linked to the oil price. The locals have with relative success been offered jobs in the "primary sector" of the labor market, which has been characterized by reasonable wages, a high level of job security and good benefits. However, the "secondary sector" has served as a much more flexible employer, which has been easy to expand during booms and to downsize at times of economic contraction.
- Anecdotal evidence points to attitudes that limit the attractiveness of certain sectors to locals. During the period of high reliance on expatriates, a number of sectors and jobs have come to be viewed as undesirable by locals. The education system has done little to date to formalize qualifications and improve standards in a way that would increase the attractiveness of at least some of such jobs. Moreover, the locals` often have high reservation wages, which are unattainable in many sectors. Empirical evidence suggests that some labor-intensive sectors are stuck in a low-productivity trap, made possible by the availability of low-cost expatriate labor. This in turn will make it all the more difficult for these sectors to meet the reservation wages of potential local employees.

Women's education and labor market participation

Low participation by women in the labor force has always been a key characteristic of the GCC region. Various reasons, chiefly religious norms and cultural traditions, account for the persistently low participation of women in the workforce even though there are increasing signs of gradual change. In some instances, regulatory factors, such as gender segregation rules or the inability of women to drive cars in Saudi Arabia, limit access by women to various jobs. This state of affairs paradoxically coincides with a situation where women throughout the region consistently higher educational attainment levels than their male counterparts. Indeed, granting equal access to girls has long been an objective of education policy in the Gulf. The strategy has been highly successful and girls have consistently achieved better scores and lower dropout rates than boys. According to the World Bank, Saudi women now make up some 58% of the university graduates in the country, but only 22.4% of Saudi females are economically active. The basic picture applies across the region. Only in Kuwait was more than a quarter of the labor force comprised of women as of 2006. Elsewhere in the region, the figure varied between 14 and 20%.

Table8: Labor force share of women

| Countries | Kuwait | Bahrain | Saudi Arabia | Qatar | Oman | UAE |
|---------------------------------|--------|---------|--------------|-------|------|-----|
| Female share of Labor force (%) | 26 | 19 | 14 | 14 | 17 | 15 |

Source: World Bank Edstats 2006 data

Table9: Female education - Where the GCC countries stand

| Countries/GER (%) | Kuwait | Bahrain | Saudi Arabia | UAE | Oman | Qatar |
|-----------------------------|--------|---------|--------------|------|------|-------|
| Primary Education | 96 | 119 | 100 | 103 | 83 | 104 |
| Secondary Education | 91 | 104 | 90 | 91 | 87 | 100 |
| Tertiary Education | 26 | 47 | 35 | 37* | 26 | 33 |
| Literacy Rate (youth 15-24) | 98.5 | 99.7 | 95.0 | 96.1 | 97.6 | 97.8 |

Source: UNESCO Institute of Statistics, World Bank Edstats

Figures quoted are for 2006 * except for 2003

Women make up the lion's share of enrolment traditional disciplines such as sciences and arts, less so in engineering and construction

While gross enrolment rates for women are traditionally higher than for men across the region, the discrepancy is particularly pronounced in Bahrain, Kuwait and Qatar. This state of affairs is particularly striking in view of the fact that significant labor force participation by women is confined to very few sectors, primarily education and health. In some GCC countries, women are restricted from entering primarily technical disciplines, including engineering. Nonetheless, women made up 73% of all Bahraini and 71% of all Qatari science graduates in 2006. Even in Oman and Saudi Arabia, roughly 45% of all science graduates were female. By contrast, however, the share of female graduates in engineering and construction disciplines was a dismal 4% and 15% in Saudi Arabia and Oman respectively, primarily for regulatory reasons. Only in Bahrain did the proportion attain a respectable 26% in 2006.

Table10: Women lead in gross enrollment rates in higher education

| Gross enrolment rate (% tertiary education) | Kuwait | Bahrain | UAE | Saudi Arabia | Oman | Qatar |
|---|--------|---------|-----|--------------|------|-------|
| Female | 26 | 47 | 37 | 35 | 26 | 33 |
| Male | 11 | 19 | 13 | 23 | 25 | 10 |

Source: World Bank Edstats

Evolution of a modern education system

Following the discovery of oil the GCC countries began to develop modern educational institutions, albeit initially with a heavy focus on Islam and limited access by girls

Modern educational institutions are a relatively new phenomenon in the Gulf countries. Traditionally, formal education was provided by Qur'anic elementary schools, the so-called *kuttab*s, which equipped their pupils with basic skills in reading and Islam. But even such schools were few in number. Following the discovery of oil in the early part of the 20th century, the region quickly established itself as an important source of energy to the world. This provided economic resources for the Gulf countries to embark on extensive investments in physical infrastructure, including educational facilities. At the initial stages, the curricula remained heavily focused on Islam and access to education by girls was extremely limited. Soon enough, however, accelerating economic growth created a growing need for technical skills. Faced with the prospect of growing reliance on imported labor, the governments in the region were forced to reconsider their approach towards education. In practice, however, the transition from the old paradigm proceeded with varying speeds in the different countries and invariably quite slowly. In the meantime, it became increasingly common for wealthier families to educate their offspring abroad, especially at the university level. Popular choices in this regard include American and British universities, but also some of the more established institutions in the region, such as the American Universities in Beirut and Cairo. There is now a fair bit of mobility for educational purposes also within the region.

Saudi Arabia

Saudi Arabia built up a comprehensive education system since its inception in 1925

At the time the Kingdom of Saudi Arabia was founded in 1932, only Qur'anic education was available for very limited numbers of people through religious schools attached to mosques. The holy cities of Mecca and Madinah constituted an exception, having been important international centers of Islamic education for centuries. The process of creating a formal education system was started with the establishment of the Directorate of Education in 1925. Later, an Education Management Committee, formed in 1930, set up a single national system of education. The first primary curriculum was designed in 1940. Three years later a private school system was also formalized.

King Abdulaziz bin Abdulrahman Al Saud, the founder of the Kingdom, initiated an extensive program of school-building in 1945. Within six years, the Kingdom had 226 schools with 29,887 students. A Ministry of Education was set up to oversee the process in 1953. In 1958, Saudi Arabia, along with other member of the Arab League, agreed on a basic structure of education with a six-year elementary phase followed by three years of intermediate and three years of secondary education. The first university began operations in Riyadh in 1953 and a Ministry of Higher Education was set up as a separate entity in 1975. The Ministry is responsible for creating and administering universities and colleges in Saudi Arabia. In addition to mainstream education, the Saudi authorities set up extensive facilities for adult education, initially with the goal to eradicate illiteracy in the Kingdom. A wide range of courses and examinations is available for students up to the university level.

Bahrain is a pioneer of modern education in the region and now offers a diverse range of facilities

Bahrain

Bahrain was a relative pioneer in the Gulf in the field of education. The first modern school in the country was opened as early as 1919, followed by another one in 1926. Bahrain was also a regional leader in the area of girls' education and opened the first school for the purpose in 1928. A Committee of Education consisting of several leading merchants and Sheikh Abdulla bin Isa Al Khalifa as president supervised the fledgling system. Direct government control was imposed in 1929 due to financial problems faced by the schools. In 1936, the first industrial school for boys and the first adult education center were opened. A secondary school for women began its operations in 1951. Bahrain now has a large variety of private schools.

Higher education in Bahrain was launched with the establishment of the Gulf Polytechnic in 1968. University College for Science, Arts and Education opened its doors a decade later. In 1986, both institutions were merged to create the University of Bahrain. The Arabian Gulf University – with faculties of science, engineering and medicine – was established in 1980 as a joint venture by the GCC countries and Iraq. In addition to the universities, the College of Health Services -- established in 1976 -- offers various medical technologies and nurses' training programs. The Hotel and Catering Training Center offers postsecondary vocational courses in management and culinary arts.

Qatar

Qatar, guided by an ambitious vision of a knowledge-based society, has recently taken some of the boldest strides in educational reform in the GCC region

The first government primary school in Qatar opened as late as 1952. The same year, a "Committee of Knowledge" was constituted to oversee the progress of education in the country. In 1956, the foundations for a modern educational system were laid through the establishment of three-stage system of schools. A formal regulatory framework was created a year later by the new Ministry of Education. Higher education was launched in 1973 with the establishment of two Faculties of Education, which were transformed into the University of Qatar in 1977 with separate campuses for men and women. A Girls' Education Department was established at the Ministry of Education in 1983.

In recent years, the Qatari government has made concerted efforts to accelerate the process of modernization in the field of education. The most ambitious expression of this aspiration to date was the establishment of the Qatar Foundation for Education, Science and Community Development in 1995. This venture, more than anything, highlights the acute awareness of the importance of education in Qatar, and reflects the government's ambition to turn the gas-rich country into a modern, knowledge-based society. The purpose of the Foundation is to develop and utilize human potential through a network of centers and a unique Education City, with branches of some of the world's leading universities.

Kuwait

As elsewhere in the region, Kuwait's schools consisted of a handful of *kuttab*s, funded by wealthy citizens, until the government took control of education in 1939. By 1945, 17 public schools were established. As oil production picked up in the post-World War II era, the government began investing large sums of money into social services and made education one of its top priorities. By 1960, there were about 45,000 students – 18,000 of them girls – enrolled in the Kuwaiti educational system. The constitution of 1962 stipulates that education is assured

and promoted by the State, thus reflecting the belief that education is a fundamental right of all citizens.

Schooling was first made compulsory in 1965, and in 1967 a private school system re-emerged with the help of considerable government subsidies. Today, there are numerous private schools in the country, many of which have foreign sponsors and are co-educational. By contrast, government schools are invariably segregated by gender. Currently, close to 500,000 students are enrolled at Kuwaiti schools.

Kuwait's system of higher education came into being in the form of a co-educational university in 1966. In 1982, the Public Authority for Applied Education and Training (PAAET) was established to supervise the various educational facilities that had been created to fill the need for technical and vocational training. In addition, there are a number of private post-secondary colleges and universities that are accredited by the Kuwait Ministry of Higher Education.

United Arab Emirates

Alongside the traditional Qur'anic schools, local pearl merchants of the Trucial Sheikhdoms set up some semi-modern schools during the first half of the 20th century. However, formal modern education only began in 1953 with the establishment of the Al-Qassemia School in Sharjah. A number of schools, founded by local governments and education departments, followed in the 1960s. Following the establishment of the UAE in 1971, the federal Ministry of Education and Youth was established and put in charge of education at all levels.

Educational standards among the locals are very high. On average, more than 80% of UAE secondary school graduates opt for higher education, a choice that is particularly popular among women. The UAE has a good network of technical colleges known as Higher Colleges of Technology (HCT), which were established in 1987. The UAE University was established in 1977 at Al Ain while the Sheikh Zayed University for women came into being in 1998. There are now more than 20 other universities in the country, including a number of foreign ones.

Oman

The establishment of a modern educational infrastructure in Oman only began after the advent to power of Sultan Qaboos in 1970. Prior to that, the country only had limited numbers of privately run schools funded by wealthy individuals. Although the main focus of these schools was to teach the Qur'an, they also offered instruction in grammar and basic arithmetic.

As recently as 1970, Oman had only three schools with a combined total of fewer than a thousand students. These figures quickly shot up to 207 schools and more than half a million students in 1975-76. The establishment of the Sultan Qaboos University in 1986 marked the launch of higher education in the sultanate. The university started with five colleges; Engineering, Medicine, Agriculture, Education, Art and Islamic Studies, and Science. Subsequently, three more colleges -- Commerce and Economics, Education and Islamic studies and Law -- were added to the university.

A diverse network of tertiary institutions means that as many as 80% of Emirati graduates opt for higher education

The advent of a modern educational system in Oman started only in 1970, but the Sultanate has made impressive progress in educational infrastructure since then

Educational objectives in the GCC region

The educational philosophy in the GCC countries varies markedly. Whereas the former British protectorates of the Gulf coast modeled their modern schools to varying degrees on a Western paradigm, education in Saudi Arabia has consistently prioritized religious education with Islam constituting the key focus and inspiration for education in the Kingdom. The openly stated objectives of education in Saudi Arabia are twofold: On the one hand, the Saudi education system seeks to develop the correct understanding of Islam; the implantation and propagation of Islamic faith and to bring up children according to the values and traditions of Islam. On the other hand, education seeks to equip the nation's youth with the knowledge and educational skills that are necessary for the economic and social development of the country. While the study of Islam remains at its core, the modern Saudi educational system provides quality instruction in diverse fields of modern and traditional arts and sciences.

Religious education is a key part of the curricula across the GCC but its role has been particularly central in Saudi Arabia

Although religious education is part of education across the GCC region, its central role in Saudi Arabia is not matched elsewhere in the region. Indeed, the self-declared mission of the education ministries in the GCC States is above all the creation of suitably qualified human capital for the needs of the economy. According to the Qatari Ministry of Education, education in the country seeks to maintain an interaction between the country's heritage, values and beliefs whilst also embracing a rational openness to the 21st-century world with its scientific and technological achievements. Similarly, the UAE Ministry of Education is committed to creating an education system that matches international standards. The stated objective of the Bahraini educational system is to contribute towards the development of students scientifically, vocationally, culturally and socially, while emphasizing national identity.

The Kuwaiti government's stated aspiration to integrate the scientific and spiritual, moral, intellectual, social and physical education of students is underpinned by the principles of Islam and Arabic heritage but also the contemporary culture in Kuwait. The Omani education system is guided by two considerations: (i) the needs of the emerging global and national economies for employees who are technologically literate and skilled communicators capable of analytical thinking and (ii) the government's policy of the Omanization of the Sultanate's economy. The Ministry of Education seeks to create an education system which reflects international best practices while remaining firmly imbedded in Islamic principles and in Arabic and Omani culture.

Education structure in the region

Primary and Secondary Education

Primary education is considered a universal entitlement in the region. Secondary education generally extends over three years and allows students to choose between a focus on science or arts as well as, in some cases, such as in Saudi Arabia, technical secondary education. Public schools in the region also offer a religious curriculum at the secondary level. In 2000, also Qatar established the Secondary School for Industrial Technologies to promote technical education in the country.

Enrolment levels in primary and secondary education are now very high across the GCC region. However, Bahrain and Qatar stand out in terms of the inclusiveness of their education systems.

Oman by contrast continues to lag behind its peers as only three-quarters of children attend primary school. The gross enrolment ratio is more than 100% in Bahrain, Qatar, Saudi Arabia and the UAE, reflecting the fact that there are higher age group children studying in primary schools.

| Table11: Primary education | | | |
|-----------------------------------|-------------------------------|-----------------------------|---|
| Countries | Gross enrollment ratio | Net enrollment ratio | Gross intake rate to last grade of primary (%) |
| Kuwait | 96 | 83 | 91 |
| Bahrain | 120 | 98* | 117 |
| Qatar | 105 | 94 | 99 |
| UAE | 104 | 88 | 100 |
| Oman | 82 | 74 | 94 |
| Saudi Arabia* | 102 | 87 | NA |
| Regional average | 97 | 84 | n/a |

Source: 2006 UNESCO Data

*for 2005

The transition rate from primary to secondary school is close to universal in all the GCC countries. This is mainly due to mandatory secondary education in some countries and free education in all.

| Table12: Secondary education | | | |
|-------------------------------------|-------------------------------|-----------------------------|---|
| Countries | Gross enrollment ratio | Net enrollment ratio | Gross intake rate to last grade of primary (%) |
| Kuwait | 89 | 77 | 98 |
| Bahrain | 102 | 93 | 96 |
| Qatar | 101 | 91 | 98 |
| UAE | 90 | 79 | 99 |
| Oman | 89 | 77 | 98 |
| Saudi Arabia* | 94 | 71 | n/a |
| Regional average | 68 | n/a | n/a |

Source: UNESCO Data, World Bank Edstats

All figures indicate 2006 figures except *for 2005

Saudi Arabia

Public schools in Saudi Arabia maintain strict gender separation and are traditionally focus heavily on Islam and the Arabic language

In Saudi Arabia, schools remain strictly segregated in terms of gender with the exception of a small number of international private schools with restricted access. Primary education in Saudi Arabia takes six years and leads to a General Elementary Education Certificate. The curriculum consists of Islam, the Arabic language, mathematics, history, geography, and science. However, the overwhelming focus of education at this level is Islamic and Arabic studies.

| Table13: Primary school curriculum in Saudi Arabia (hours per week) | | | | | | |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Subjects | 1st Grade | 2nd Grade | 3rd Grade | 4th Grade | 5th Grade | 6th Grade |
| Islamic Studies | 9 | 9 | 9 | 9 | 9 | 9 |
| Arabic Studies | 12 | 9 | 9 | 9 | 8 | 8 |
| Social Studies | 0 | 0 | 0 | 2 | 2 | 2 |
| Science | 1 | 2 | 2 | 2 | 3 | 3 |
| Mathematics | 2 | 4 | 4 | 5 | 5 | 5 |
| Art Education | 2 | 2 | 2 | 1 | 1 | 1 |
| Physical Education | 2 | 2 | 2 | 2 | 2 | 2 |
| Total Hours | 28 | 28 | 28 | 31 | 31 | 31 |

Source: King Saud University

The Saudi government has made significant efforts to boost teaching training standards

There are 12,377 elementary schools in the Kingdom, roughly equally split between girls' and boys' schools. The student-teacher ratio is one of the lowest in the world at just above 11. In addition to state schools, there are also a limited number of private elementary schools. These schools are under close surveillance by the Private Education Department of the Ministry of Education. The ministry issues the General Elementary Education Certificate after private school pupils complete their elementary education.

Primary school teachers are trained at one of the country's 17 teacher-training colleges, which offer bachelor's degrees in primary education. Admission to such colleges is conditional on a good academic record and a successful pass in an entrance examination. In spite of competitive admissions and a standardized curriculum, criticism of the quality of teaching is common. In recognition of the problem, the government has made efforts to boost standards in teacher training and a four-year bachelor's degree is not the standard minimum requirement across the board.

Post-primary education in Saudi Arabia is divided into intermediate and secondary education, over 10,000 schools with again a roughly equal split by gender. Although, social sciences (eg history and geography) become part of curriculum at intermediate level, Islamic studies and Arabic language continue to be the priority with the highest number of weekly periods.

Table14: Intermediate school curriculum in Saudi Arabia (hours per week)

| Subjects | 1 st Grade (7 grade) | 2 nd Grade (8 grade) | 3 rd Grade (9 grade) |
|--------------------|---------------------------------|---------------------------------|---------------------------------|
| Islamic Studies | 8 | 8 | 8 |
| Arabic Studies | 6 | 6 | 6 |
| English | 4 | 4 | 4 |
| Science | 4 | 4 | 4 |
| Mathematics | 4 | 4 | 4 |
| Art Education | 2 | 2 | 2 |
| Physical Education | 1 | 1 | 1 |
| History | 2 | 2 | 2 |
| Geography | 2 | 2 | 2 |
| Total Hours | 33 | 33 | 33 |

Source: King Saud University

Girls, instead of Physical Education, typically have Feminine Education at all levels.

There is limited private sector participation in education in Saudi Arabia, partly due to a rigid supervisory environment. However, the role of private provision looks set to grow

There are three types of secondary education provided by Qur'anic schools, general (academic) schools and vocational schools respectively. The general schools offer a general curriculum for the first year followed by specialized course in either liberal arts or science for the remaining two years. The first year of general schools offers Islamic studies, social studies, natural sciences, mathematics, English, physical education (typically for boys only) and home economics (for girls only). In vocational schools, technical industrial education is offered through various departments: mechanical, electrical, technical agricultural, technical assistants' program and technical-commercial.

Though private education is officially encouraged, private initiatives in education have at least until very recently been limited in number as compared to other member countries of the GCC. There are only 800 odd private schools in the Kingdom, partly due to a highly rigid and controlled system for setting up and operating them. Only Saudi citizens can obtain a license to open private schools. Among other things, private schools are expected to replicate the Islamic orientation of government schools, although some of them do offer fewer hours of instruction in Arabic and Islam than their public sector counterparts. In the few instances where schools offer foreign curricula, these have to be modified to match the demands of the Saudi authorities.

Qatar

Six-year primary schools are segregated on gender lines in the case of public institutions but private schools are allowed to be co-educational in Qatar. Though religious studies are part of the curriculum, the focus of primary schooling is science, mathematics, English and Arabic. On average, one-seventh of total class hours is devoted to religious studies. Private schools have leeway to add to the curriculum as long as there are no substantial changes in the basic structure.

Table15: Primary school curriculum in Qatar (hours per week)

| Subjects | 1 st Grade | 2 nd Grade | 3 rd Grade | 4 th Grade | 5 th Grade | 6 th Grade |
|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Religious Studies | 5 | 5 | 5 | 5 | 5 | 5 |
| Arabic Language | 10 | 10 | 10 | 9 | 8 | 8 |
| English Language | 5 | 5 | 5 | 6 | 6 | 6 |
| Mathematics | 5 | 5 | 4 | 5 | 6 | 6 |
| Hygiene and Science | 2 | 2 | 3 | 3 | 4 | 4 |
| Social Studies | - | - | 1 | 2 | 2 | 2 |
| Art Education | 2 | 2 | 2 | 2 | 2 | 2 |
| Physical Education | 2 | 2 | 2 | 2 | 2 | 2 |
| Total | 31 | 31 | 32 | 34 | 35 | 35 |

Source: IBE's 2002 curriculum data set

The Qatari educational system is very diverse and increasingly competitive

The Qatari authorities provide training for government and private school teachers alike in order to maintain consistent standards. The Supreme Council of Education develops programs designed to enhance the skills and knowledge of experienced teachers who may contribute to coursework planning as well as to the training and mentoring of new teachers. The School Support Organization helps all private schools and helps teachers develop lesson plans that reflect the curriculum standards.

Public secondary schools are similarly segregated by gender while private schools can be co-educational. There are four types of secondary schools broadly classified as government schools, independent schools, schools operating under the Qatar Foundation and private schools. Government schools provide preparatory and secondary education to almost 26,000 out of a total of 61,000 students in the country. They are completely funded and regulated by the government. Independent schools are funded by the government but enjoy autonomy in pursuing their educational objectives. All such schools are supposed to meet established curriculum standards in Arabic, English, mathematics and science, as well as to comply with periodic financial audits. These schools do not charge any fees.

Table16: Types of schools in Qatar

| | Government Schools | | Independent Schools | | Schools subsidiary to Qatar Foundation and Aspire | | Private Schools | | Total | |
|--------|--------------------|------|---------------------|------|---|-----|-----------------|------|-------|------|
| | S | T | S | T | S | T | S | T | S | T |
| Male | 15614 | 1890 | 5154 | 471 | 222 | 42 | 9329 | 3339 | 30319 | 5742 |
| Female | 10364 | 1234 | 8469 | 685 | 488 | 94 | 11586 | 1182 | 30907 | 3195 |
| Total | 25978 | 3124 | 13623 | 1156 | 710 | 136 | 20915 | 4521 | 61226 | 8937 |

Source: Qatar Statistics Authority

S – Students T – Teachers

Qatar also boasts a large number of private schools, which provide education to almost one-third of students at the preparatory and secondary levels. Almost all teaching staff in private schools is non-Qatari. Particularly prominent institutions include Doha College, based on the

British system of education, and the American School in Qatar, which offers an American secondary school curriculum. Other schools offering secondary-level schooling include the Pak Shama School (with the Pakistan Education Center), the Doha English Speaking School, the Jordanian School, the Middle East International School, the Park House English School, the Qatar Academy, and the Qatar International School.

Kuwait

It is mandatory for all children aged between six and fourteen to attend school in Kuwait. Government schools are segregated by gender and all instruction is provided in Arabic. Education is provided free of charge to all Kuwaiti students.

| Table17: Primary school curriculum in Kuwait (hours per week) | | | | |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Subjects | 1st Grade | 2nd Grade | 3rd Grade | 4th Grade |
| Islamic Education | 4 | 4 | 4 | 4 |
| Arabic language | 10 | 10 | 9 | 9 |
| English language | 4 | 4 | 4 | 4 |
| Science | 2 | 2 | 3 | 3 |
| Mathematics | 5 | 5 | 4 | 4 |
| Social Studies | - | - | - | 2 |
| Physical Education | 3 | 3 | 3 | 2 |
| Fine Arts | 3 | 3 | 3 | 2 |
| Music | 1 | 1 | 2 | 2 |

Source: International Bureau of Education (IBE)

Kuwait has an established tradition of private education although only Arabic private schools receive government subsidies

Many of Kuwait's private schools, by contrast, are co-educational. Arabic private schools receive generous government subsidies, but other international private schools do not enjoy government support. Most expatriates are not eligible for the free education provided in public schools and therefore send their children to private schools. Large numbers of American and British schools are available as well as some schools based on the Indian system and other foreign models. The Ministry of Education supervises these private schools and also sets fee levels and arbitrates complaints.

Table18: Secondary school curriculum in Kuwait (hours per week)

| Subject | 1st Grade | 2nd Grade | 3rd Grade | | 4th Grade | |
|--|-----------|-----------|-----------|---------|-----------|---------|
| | | | Arts | Science | Arts | Science |
| Islamic Education | 3 | 2 | 2 | 2 | 2 | 2 |
| Arabic Language | 7 | 6 | 7 | 5 | 8 | 5 |
| English language | 6 | 5 | 7 | 6 | 7 | 5 |
| French language | -- | -- | 5 | -- | 5 | -- |
| Mathematics | 5 | 5 | 1 | 6 | - | 6 |
| Sciences | | | | | | |
| Integrated Sciences | 3 | -- | -- | -- | -- | -- |
| Biology | -- | 2 | -- | 2 | -- | 3 |
| Geology | -- | -- | -- | 2 | -- | -- |
| Physics | -- | 2 | -- | 4 | -- | 5 |
| Chemistry | -- | 2 | -- | 3 | -- | 4 |
| Scientific Knowledge | -- | -- | 1 | -- | -- | -- |
| Social studies | | | | | | |
| Social Studies | 3 | 3 | -- | -- | -- | -- |
| History | -- | -- | 2 | -- | 2 | -- |
| Geography | -- | -- | 2 | -- | 2 | -- |
| Economics | -- | -- | 2 | -- | -- | -- |
| Sociology | -- | -- | 1 | -- | -- | -- |
| Psychology | -- | -- | -- | -- | 2 | -- |
| Philosophy | -- | -- | -- | -- | 2 | -- |
| Practical Studies/Fine Arts/ Computer Studies | 2 | 2 | -- | -- | -- | -- |
| Physical Education | 2 | 2 | 1 | 1 | 1 | 1 |
| Home Economics (for girls) | 2 | 2 | 2 | 2 | 2 | 2 |
| Total Weekly Periods (boys) | 31 | 32 | 31 | 31 | 31 | 31 |
| Total Weekly Periods (girls) | 33 | 34 | 33 | 33 | 33 | 33 |

Source: International Bureau of Education (IBE)

The Faculty of Basic Education, which offers academic, cultural and pedagogical training and the Faculty of Education at the University of Kuwait train teachers through a four-year program leading to a bachelor's degree. The government favors Kuwaiti teachers for primary education.

The Ministry of Education supervises all aspects of secondary education, public or private, including fees, school inspections and arbitration of complaints. Secondary education in Kuwait consists of a four-year cycle comprising grades nine through twelve. In grades nine and ten, students follow a common curriculum. In grades eleven and twelve students may opt for science or arts specializations. Options to specialize in religious education and special education are also offered.

Bahrain

Primary education in Bahrain is divided into two cycles. The first one includes the first three years during which pupils have a single teacher for all subjects except English, design and technology, music and physical education. During the second cycle all teachers are specialized. Intermediate education is offered to students aged 12-14.

Although there are separate public schools for boys and girls, many of the country's numerous private schools are co-educational. The private schools are regulated by the Directorate of Private Education, which supervises the teaching of Islamic studies and Arabic at such schools. The Ministry of Education provides these schools with free government-approved textbooks in Islam and the Arabic language and also assigns specialists to supervise the teachers of these

Bahrain offers secondary vocational education in applied and technical streams, preceded by a one year foundation course

subjects. A minimum of six periods in a week are to be assigned to the Arabic language during the first cycle and four periods in the second cycle.

Secondary education in Bahrain consists of three years of study focused on ensuring a minimum level of general knowledge along with the necessary information, skills and attitudes that will help students to continue their study and self-learning. A wide range of subjects such as science, literature, commercial, technical or applied courses, are available to students to choose from. Among the applied courses, textile and clothing as well as printed advertisements are exclusively for girls. Upon completing their studies, students are awarded the "General Secondary School Certificate". Bahrain has religious schools also at secondary level, which offer exclusively instruction in Islam, including Shariah law, for boys only. .

Secondary vocational education in Bahrain is preceded by a one-year foundation course. During this year, students pursue courses in mathematics, the English and Arabic languages, science and basic mechanical and electrical engineering. After the successful completion of a foundation course, there are two routes available for the following two years of study. The applied route helps students acquire specific practical skills with the objective of joining the labor force upon graduation. The technical route focuses on developing competencies and skills which will enable students to go on to higher engineering courses.

UAE

Primary education in the UAE is compulsory for all children between six and twelve years of age. Boys and girls are taught separately in government schools. The primary education system in the country matches Bahrain's split of the first six years of education into the "junior primary stage" and "senior primary stage". At the junior stage, one teacher teaches Islamic education, Arabic, English, mathematics, and science. Other subjects at this level include art, physical education, music and family education. At the senior stage, social studies (divided into three separate units that include history, geography and civics) are added to the curriculum. All expenses related to schooling are borne by the government. In addition to free education, it provides school uniforms and transportation free of charge for all students.

In the UAE, secondary education till the ninth grade is universal and compulsory

The UAE is home to a large numbers of private schools where the language of instruction is English. The curriculum at these schools is approved by the Ministry of Education and Youth or an authorized accreditation organization. Teaching is expected to be carried out in a manner consistent with the culture and values of the UAE. The curriculum includes Arabic language, Islamic studies and civic studies taught in accordance with Ministry guidelines. In practice, however, private schools in the UAE enjoy a high degree of autonomy.

Supervised by the Ministry of Education and Youth, secondary education is universal and compulsory until the ninth grade. The secondary education cycle, consisting of three years, essentially focuses on preparing the students for university education, for technical or vocational training or for joining the workforce directly. Secondary education consists of a common first year followed by specialization in science or arts. Graduates obtain to a Secondary School Leaving Certificate. Technical Secondary Education offers both preparatory and secondary cycles. The preparatory cycle offers an engineering course for the acquisition of basic skills leading to the Intermediate Certificate. At the end of the secondary cycle, a Technical Secondary Diploma is awarded.

Oman

The primary education system in the Sultanate of Oman is structured slightly differently from the rest of the region. Under the Basic Education program, primary education has been divided into two cycles: the first cycle covers grades one to four and the second cycle covers five to ten.

Table19: Primary school curriculum in Kuwait (hours per week)

| Subjects | 1 st Grade | 2 nd Grade | 3 rd Grade | 4 th Grade |
|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Islamic Education | 6 | 6 | 6 | 5 |
| Arabic | 12 | 12 | 10 | 7 |
| English | 5 | 5 | 5 | 5 |
| Mathematics | 7 | 7 | 7 | 7 |
| Sciences | 3 | 3 | 3 | 5 |
| Social Studies | 0 | 0 | 2 | 3 |
| Physical Education | 2 | 2 | 2 | 2 |
| Artistic Education | 2 | 2 | 2 | 2 |
| Music Education | 1 | 1 | 1 | 1 |
| Environmental life skills | 1 | 1 | 1 | 1 |
| I T | 1 | 1 | 1 | 2 |
| Total Periods | 40 | 40 | 40 | 40 |

Source: Ministry of Education, Oman

Primary education is largely provided by government schools, which are more than a thousand in number, with more than half a million students. There are a limited number of private schools also offering primary education. These schools follow the same curriculum as their government counterparts.

The Omani system of public education has recently undergone a thorough overhaul

Under the new Basic System of Education, the erstwhile three years of secondary education made way for a two-year secondary education phase. Initially introduced at 17 schools in 1998-99, the new system has been gradually introduced at more schools. Students passing the general preparatory certificate examination are admitted to the first grade of secondary school between the ages of 15 and 17. Secondary education has two options: general education, which prepares students for university; or a vocational education. General education consists of one year of basic academic subjects and two years of humanities or sciences. Specialized vocational education includes basic academic subjects, with an emphasis on Islam, commerce, agriculture, industry, or teacher training.

Higher Education

Higher education is a relatively new phenomenon in the Gulf. The first university in the region – Riyadh University, subsequently renamed King Saud University -- opened its doors in 1957. Following a gradual maturation of the sector since then, higher education system has experienced renewed dramatic expansion in recent years, which now looks set to continue in the foreseeable future.

In most GCC countries the preferred medium of instruction is English, although Arabic is still typically used for all subjects other than science (including medicine) and technology in Saudi Arabia. This is partly due to poor English language proficiency levels in the Kingdom. Most universities in the region are coeducational although some, such as the University of Petroleum and Minerals and the Islamic University in Saudi Arabia admit men only. Similarly, there are some institutions for women only, including Sheikh Zayed University in the UAE, the private Dar al Hekma College of Jeddah and the new Princess Noura bint Abdulrahman University, which

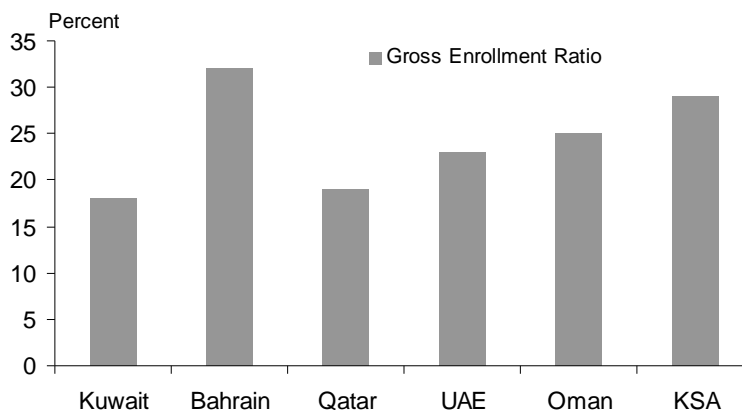
In recent years private participation in higher education in the GCC region has increased, in part due to a more friendly government policies

will be built on the outskirts of Riyadh and will be the largest women's university in the world with some 40,000 students. In Saudi Arabia, however, strict gender separation applies in the classroom and in halls of residence.

A fair number of private universities have emerged in the region. In Saudi Arabia, the number of private universities has increased from zero to three during this decade while the number of private colleges has more than tripled to 17. In fact, also King Abdulaziz University was originally – in 1967 – a private venture by Jeddah businessmen, although it became a state institution in 1971.

Apart from the basic institutions of tertiary education, the GCC countries have various programs in place to encourage higher education amongst their citizens. For example, Qatar has established the Higher Education Institute which offers full scholarships to Qataris who wish to pursue higher studies in Qatar or abroad and provides about 1,200 scholarships currently. Efforts are only being made to promote distance learning, an example being Saudi Arabia's new National Centre for E-learning Distance Education.

Figure 5: Higher /Tertiary education



Source: UNESCO Institute of Statistics, NCBC Research

Saudi Arabia

The main institution in charge of monitoring the Saudi higher education system is the Council of Higher Education. The practical regulation and supervision is in the hands of the Ministry of Higher Education which was established in 1975. The Saudi higher education sector, long constrained by insufficient resources, is now experienced its most robust expansion since its inception. Overall enrolment levels in Saudi tertiary education have expanded by 70% during the past decade, from 350,000 in 1999-2000 to 603,000 in 2005-2006. 42% of the students study at accredited universities. Some 90% of high school graduates now continue their studies at the tertiary level, an increase on just 62% as recently as 2000.

Ensuing adequate access to quality higher education has been a major challenge in Saudi Arabia and has in recent years been fully recognized as such by the authorities. A recently as 2003, the Kingdom had only eight full universities, including the King Saud University in Riyadh, the Islamic University in Madinah, King Fahd University for Petroleum and Minerals in Dhahran and the King Abdul Aziz University in Jeddah. There was considerable criticism of the quality of teaching and of the failure to provide sufficient skills for the needs of the economy with most students studying the humanities (including Islamic studies) and many never even graduating. However, considerable efforts have been made this decade to boost the sector through

Saudi universities have in the past been criticized for insufficient standards and a failure to equip students with necessary qualifications. However, some institutions match international standards of excellence

initiatives such as the Public Education Development Project (TATWEER). In addition to increasing the numbers of institutions, the government has developed an ambitious 25-year strategy for university education and a program for vocational development. In recent years, the number of fully accredited universities has almost tripled to 22. In addition, there are 102 teacher training colleges and 18 girls' colleges which were recently linked to universities. 28 community colleges also exist. The focus of the expansion has been on science, medicine, IT and engineering, which is beginning to significantly transform the composition of graduates.

KAUST, envisioned as a world-class technical university marks a potential turning point for Saudi educational policy

Several more new universities are in the pipeline, with some being built as a part of the new city projects currently under construction. Of particular importance in this regard is the King Abdullah University of Science and Technology (KAUST), a graduate research university being built on the Red Sea Coast near Jeddah. Set to open in September 2009, it is expected to ultimately have 2,000 students and 600 faculty members. KAUST represents a new departure in Saudi education policy – an USD12.5bn university, most of which comes from the king's personal wealth and which will be classified as a private institution, with the greater autonomy this entails. Among other things, it will be the first truly coeducational Saudi university with none of the traditional rules on gender separation applying. KAUST will open in 2009 with 500 male and female students and represents a major step forward for the official education policy of promoting science and technology studies. KAUST is deliberately intended as a world-class institution offering the best resources in the region for academic research. It has signed agreements on designing the curriculum and faculty recruitment with Stanford University, the University of California at Berkeley and the University of Texas at Austin. KAUST will be in the global top-10 in terms of the size of its endowment. Saudi Aramco, one of the key forces in the Saudi corporate sector and the driver behind the world-class King Fahd University of Petroleum and Minerals, is playing a central role in the construction and planning of the new university. The KAUST venture is directed by Ali Al Naimi, the minister of petroleum and mineral resources. The recruitment standards for KAUST faculty will be set to match those observed at leading international institution. Most of the faculty will initially be from overseas and they will typically hold appointments at other research institutions. Another ambitious venture, which in many ways matches the high standards of the King Fahd University, is the new private Al Faisal University in Riyadh which began operations in 2008. It is a research university composed of Colleges of Engineering, Science and General Studies, Medicine and Business.

In Saudi Arabia, a realization of the need for greater vocational training, has led to a renewed focus on technical colleges

Efforts to develop universities have gone hand in hand with the recognition of the need for greater vocational training through other means. 34 technical colleges with some 40,000 students now operate under the General Organization for Technical Education and Vocational Training which has been reformed with foreign assistance. Programs on offer include machine tooling, metalworking, electro-mechanics and auto mechanics and offer young Saudis the opportunity to learn skills that are in high demand. Many courses are specifically tailored to meet the needs of unemployed Saudis. In addition, three colleges are operated by the Royal Commission for Jubail and Yanbu. There are 46 health colleges are the Ministry of Health, with a total enrolment of over 14,000. In addition, two Institutes of Public Administration exist in the Kingdom.

In spite of the ambitious plans, the Saudi system of higher education is faced with considerable challenges, many of them in fact linked to the rapid pace of expansion. The dramatically expanded sector is likely to struggle to recruit sufficient numbers of suitably qualified teaching staff. Moreover, the reform of higher education does not directly address the quality of inputs going into it. At the moment, it is generally agreed that the quality of school education does not create a good basis for higher education among students. Quite apart from problems with the

Sustained progress in higher education is critically dependent of attracting quality teaching staff and introducing more intensive mathematics and English in schools

quality of teaching, the traditionally heavy focus in schools on Arabic and Islam has meant that many incoming students struggle with English and mathematics. Moreover, although application standards are becoming more competitive, only few institutions offer a truly meritocratic environment will strict standards for excellence. Nonetheless, attempts are being made to better assess students' aptitude, in part through national tests. Moreover, a growing number of national and institution-specific catch-up programs exist in order to bring new students up to speed in key areas. King Faisal Foundation's University Preparation Program is an innovative program that has been recently launched at the Al Faisal University Campus. The program aims to provide some of the brightest secondary school graduates with training in English, Mathematics and the Sciences in a bridge program that would impart all the necessary skills for a world-class university education.

Another major challenge will be integrating higher education with the corporate world in a country that currently devotes barely 0.25% of its GDP to research and development. Involving corporate funding and support, in part from foreign companies, has been a feature of some of the recent university projects. One of the objectives of the King Abdulaziz City of Science and Technology will be to forge greater links between academia and the business community.

Qatar

Higher or university education in Qatar has become highly competitive in keeping with global standards. The Supreme Education Council has created a separate Higher Education Institute (HEI), tasked with the express intent of developing high-quality and competitive higher education for the benefit of society and the economy. The HEI also oversees comprehensive scholarship programs for higher education, which allow Qatari students to pursue their higher studies at home or abroad.

The Qatar Education City set has brought together a number of prestigious universities from the USA offering world-class programs

The premier Qatar University which was formed by the government in 1975 currently comprises six faculties: Education; Arts and Science; Islamic Studies; Law; Engineering; and the Faculty of Economics & Administration. Even though most faculties are open to both male and female students, the engineering courses only admit male students. A number of private colleges exist specifically for female students. The Qatar Education City houses branches of specific departments of prestigious universities from the USA, including business administration and computer science from Carnegie Mellon and the Weill Cornell Medical School, in a massive campus spread over 2,500 acres near Doha.

A strong emphasis on mathematics, sciences and English has contributed to the relative success of higher education in Qatar

With a view to meeting the country's demand for skilled and semi-skilled labor, the Department of Training and Vocational Development was set up as early as 1962. The agency aims to qualify and train Qatari workers and technicians. A regional training centre it set up with the help of the UN Development Program in 1970 offers programs in the fields of carpentry, welding, electrical work, and other industrial work. It also trains female Qataris in the fields of modern clerical and secretarial work. A Graduate Employment Committee has been set up to integrate and absorb the Qatari university graduates into various government bodies and other businesses and enterprises. The committee's main concern is to ensure the optimum use of the graduates and their knowledge so they can best contribute to development and progress.

The relative success of higher education in Qatar is in large measure due to a relatively standard of education at schools. There are large numbers of private schools in the country providing which place a strong emphasis on mathematics, science and English in their teaching. Indeed, most private schools use English as the language of instruction.

Bahrain, apart from two full universities, also has a growing number of foreign institutes offering specialized higher education

Bahrain

Bahrain has two full universities, namely Bahrain University (BU) and the Arabian Gulf University (AGU) while other institutions, such as the Medical University of Bahrain and Bahrain Institute of Banking and Finance, provide more specialized courses. The College of Health Services offers various medical technology training and nursing programs. Bahrain Polytechnic opened its doors to 240 students in 2008. The new institute will complement the role of higher education colleges and universities by providing an applied and industry-focused vocational education. Programs on offer include business studies, accounting, finance, marketing, advertising, management and economics, international business, information technology, civil and mechanical engineering and health sciences. In addition, Bahrain has a large numbers of foreign institutes offering specialized higher education. The most prominent ones are the New York Institute of Technology, the Birla Institute of Technology and the University of Wales.

Kuwait

There are two state-supported institutions of higher education in Kuwait, namely Kuwait University and the Public Authority for Applied Education and Training (PAAET, a 2-year college). Kuwait University is a co-educational institution made up of five campuses in Kuwait City. In addition to these, a number of private colleges and universities including the Gulf University for Science and Technology, the Australian College of Kuwait, the American University of Kuwait, the Gulf American College, the Maastricht MBA School and Box-Hill College for Girls have been approved by Kuwait Ministry of Higher Education.

Kuwait has been pursuing an ambitious strategy for higher education and research for decades

The government has for decades sought to use public funding to stimulate scientific research and technology. The Kuwait Foundation for the Advancement of Sciences (KFAS) was set up by the Emir in 1976 as a non-profit organization. All joint-stock companies in the country are required by law to contribute 1%-2% of their annual profits to KFAS, whose mission is to promote scientific, technological, and intellectual progress in Kuwait and abroad. It has funded a large number of national scientific institutions, including the Dasman Centre for Research and Treatment of Diabetes. PAAET plays a key role in diversifying Kuwait's economy by training students for careers beyond the oil industry.

UAE

The UAE's system of higher education has traditionally benefited from extensive private sector participation while still remaining free of charge for all citizens. The Ministry of Higher Education and Scientific Research supervises and coordinates higher education activities in the UAE. The oldest university in the country, the United Arab Emirates University (UAEU) opened in 1977 in Al Ain. It currently has faculties in the arts, science, education and political science, business administration, Shariah law, agriculture and engineering. The medium of instruction in most courses is Arabic with several programs being conducted in English. Most courses are segregated on the basis of gender. Sheikh Zayed University, with campuses in Abu Dhabi and Dubai, is a major institution exclusively for women. It was established in 1998 with the aim of educating Emirati women in English, Arabic and IT skills as well as in academic areas. It provides four-year undergraduate studies in the arts and sciences, business studies, communication and media sciences, education, and family sciences.

The private higher education system in the UAE has received widespread government support. Programs are extremely varied, ranging from private enterprises with a vocational training focus,

to private endowments with funds for intellectual research. The American University of Sharjah (AUS) is one of the most prominent private institutions in UAE.

The Higher Colleges of Technology were established in 1988 at five locations at Abu Dhabi, Dubai, Sharjah, Al Ain, Ras al Khaimah and Fujairah, with separate divisions for men and women. They provide three-year programs in areas such as business administration, accounting, banking, information systems, computers, engineering, and aviation technology and health sciences. The Ajman Institute of Science and Technology also provides courses mostly in technology-oriented streams. Additional tertiary institutions of note include the Dubai Aviation College, Emirates Banking Training Institute or the Career Development Center of the Abu Dhabi National Oil Company.

Oman

Oman has made rapid progress in higher education since the establishment of its first public university in 1986

Higher education in Oman is a fairly recent development, with the first public university, Sultan Qaboos University, established in 1986. Its opening coincided with the creation of the Ministry of Higher Education, which is responsible for implementing educational and research plans and programs offered by institutes of higher education under its supervision. The university run by the Ministry comprises seven colleges: Arts and Social Sciences, Commerce and Industry, Education, Science, Agricultural and Marine Sciences, Engineering, and Medicine and Health Sciences. The number of students admitted for 2003-04 in its Bachelors, Masters and Diploma programs totaled 3,105. The total number of students enrolled in the same academic year was 12,385. The Ministry of Higher Education also runs the Law College and College of Banking and Financial Studies, while the Ministry of Manpower operates the Higher College of Technology in Muscat as well as five other colleges of technology. A number of health institutes to prepare medical professionals, such as nurses, paramedics and pharmacists, are run by the Ministry of Health.

In 1996, the private sector was invited to invest in the higher education system, and as a result 14 private colleges and four private universities now operate in the Sultanate. Private-sector participation at the tertiary level is now ahead of its more established role in primary and secondary education. In spite of considerable progress, the Sultanate faces many of the challenges faced by the rest of the region, especially insufficient standards among high school graduates.

Recent progress of educational reforms in the GCC

Apart from higher public expenditure, reforms are focusing on boosting the general quality of education as well as access to it

The acute awareness of the need to productively employ the region's large young population has propelled the region's governments to undertake a number of increasingly ambitious reforms in recent years. Indeed, the GCC countries now have some of the most dynamic and rapidly growing education systems anywhere in the world, a state of affairs that looks unlikely to change any time soon. Apart from the high public expenditure, ambitious new initiatives to improve the quality and expand the scope of education have been launched. The focus of these efforts is twofold: to boost standards and the general quality of education in a way that better caters to the needs of the region's economies but also to improve access to education by increasing the size and number of institutions and their program offerings. As part of the process, efforts are being made across the region to create a more competitive market place in education. It has now become very common for GCC governments to invite recognized foreign universities to assist in the process, either through advice and support or directly by setting up facilities in the region in a way that seeks to replicate international best practice standards. This continues a great tradition of institutions such as the American Universities in Beirut (founded in 1866) and Cairo (1919) which have for decades served as regional centers of academic excellence and set a standard for other institutions to match.

In general, the ongoing reforms are characterized by an unprecedented openness to new ideas and a determination to question all the shortcomings of the old paradigm. Ambitious government-led reform programs are now the norm across the region and increasingly premised on a willingness to view reform as an open-ended, dynamic process, rather than merely a set of one-off initiatives. Reforms are being undertaken at all levels of education and, importantly, a focus now seeks to improve the relatively poor returns in terms of the quality of outputs that have historically been obtained from extensive financial inputs into the sector. Curricula are being reviewed across the region as the entire philosophy of education is shifting from the traditional focus on rote learning to a much more student-centric approach designed to foster creative thinking and intellectual inquiry.

Reforms are being undertaken at all levels of the education system in an effort to match international standards

One of the biggest near-term challenges of the numerous initiatives is ensuring a degree of synchronization that allows quality improvements across the board rather than merely the emergence of "islands of excellence" that cater to the needs of particular sectors in the economy but allow mediocrity to persist in large parts of the education system. While the determination to reach this goal is strong, there are a number of hurdles in the way of quick progress. Most importantly, the region will struggle in the near to ensure adequate numbers of quality faculty for a sector that is undergoing a rapid quantitative expansion. Many of the new initiatives will have to work hard to establish a reputation and to attain the necessary critical mass and momentum for these reservations to dissipate. Moreover, although the cultural attitudes that have proven an obstacle to reform in the past, are changing in a world that is more interlinked than ever before, this process will be slow and may not be altogether continuous. The positive news is that the region has demonstrated over and over again that it can attain very high standards in particular sectors and institutions. Creating more success stories is likely to ultimately change the prevailing attitudes even more strongly in favor of the new paradigm.

Saudi educational reforms have focused on a massive expansion of institutions and a thorough review of the curriculum

Saudi Arabia

In recent years, Saudi Arabia has stepped up its efforts to fundamentally overhaul its education system with a view to ensuring that its youth are equipped with the necessary skills for gainful employment, as well as the growing needs of the economy in a number of sector. The Ministry of Education in 2004 initiated a 10-year reform of primary and intermediate education, the King Abdullah Project for the Development of Public Education, which has invested some USD3.1bn to date. The project has allocated some USD1.1bn to general efforts to improve the educational environment and about USD950mn towards developing infrastructure and promoting extra-curricular activities. A further USD770mn has been earmarked for the training and development of teachers, while another USD260mn is to be channeled into curriculum development. The Ministry of Education plans to carry out training programs for more than 400,000 teachers focusing on their individual specializations, school management, educational supervision and computer skills. English is now being introduced at primary schools throughout the Kingdom.

An unprecedented number of initiatives have been launched to set up new institutions of higher education and the Ministry of Higher Education has seen its budget more than triple since 2004 to over USD15bn. High-profile ventures include the inauguration of the Al Faisal University in Riyadh in 2008, and the scheduled opening of the much-vaunted King Abdullah University of Science and Technology in 2009. At the same time, a number of entities have been set up to establish and monitor standards in Saudi education. Notable examples include the National Center for Measurement and Assessment, the National Commission for Academic Accreditation and Assessment and the Center for Higher Education Statistics. The government in 2002 adopted a new science and technology plan and committed to spending 1.6% of the country's GDP on R&D by 2020.

At the same time, vocational training is being boosted through the strategic plan of the General Organization for Technical Education and Training. The plan is being driven by market needs and much greater emphasis in being based on practical training. In addition to a general expansion of technical colleges, more training facilities are being established for women. Success in the area of vocational training is particularly important in reducing the reliance of many sectors of the economy on expatriate labor.

Qatar

The past decade or so has been repeated attempts by the Qatari authorities and others to critically evaluate the country's education system. For instance the 1996 Higher Education Committee and the Rand Institute Report on Qatar's education system agreed on a lack of a centralized vision; an outmoded, rigid curriculum and a lack of accountability and training among the teaching staff as the main shortcomings of the system. A number of measures have been taken in response to these findings. The Supreme Education Council was set up in 2004, to assume the role of chief governing body in charge of formulating education policy in Qatar. Three institutes support it: the Education Institute, the Evaluation Institute and the Higher Education Institute (set up later in late 2005). All of them are completely independent of each other and each has been tasked with separate objectives to regulate aspects of education.

In a significant revamp of the existing system, the Centre for British Teachers (CfBT) Education Trust was entrusted to design new curriculum benchmarked on international standards. The development of the new curriculum standards in Arabic, English, mathematics and science was completed and implemented in 2005. Qatar is the first Arabic-speaking nation to establish formal standards for written and spoken Arabic. The Education Institute is presently responsible

Qatar's educational reforms include a new curriculum based on international standards, a teacher certification program and a review of education policy

for developing and implementing teacher training programs including the newly launched Teacher Preparation and Certification Program. A number of Independent schools (i.e. government funded schools which have been granted autonomy, but need to adhere to the curriculum standards and financial audits laid down by the government) have been launched since 2004 as a vital part of the wider reforms in education. In 2007, 18 new independent schools were launched, taking the total number of independent schools to 73 within only three years. One of the key focus areas of the reforms has been raising the accountability of teachers and of schools. In 2007, a set of professional benchmarks for the teachers and school administrators was established in order to ensure better employee assessment and to improve performance.

Rather than simply transplanting western universities in the Qatar Education City, the aim is to build a critical mass of teachers and researchers through cooperation with the foreign institutes

One of the cornerstones of the education reforms in Qatar has been setting up of the Qatar Education City, a 2,500 acre campus housing several US universities alongside government educational agencies and institutes. The aim is to generate significant positive externalities within the community, by providing world class education, research and cooperation in Qatar. To this end, Qatar University is offering a new Primary Teacher Preparation Program with partnership of Texas A&M University. While impressive, the venture has been criticized as some for its failure to cater to local needs by simply transplanting foreign institutions.

Oman

In 1998-1999, Oman replaced its 12-year General Education System by a new 10-year Basic Education System, which is premised on a more student-centered approach to education. Teachers have been provided with extensive learning tools and are encouraged to use learning technologies such as computers in the classroom. Education past the Basic Level consists of a core curriculum and a number of electives. Courses have been or are being developed in a number of new areas including computer programming, communications, computer engineering, graphic arts, geography, photography, fashion studies, entrepreneurship and accounting for small businesses, introduction to marketing, and hospitality and tourism.

The Omani government has offered considerable incentives for private sector initiatives in education and significant investments have been made in women's education

The Ministry of Higher Education has sought to increase the provision of education through private initiatives. As incentives, the government is offering free land, exemption from taxes and duties, monetary grants, free electricity and textbooks. Also in an effort to improve the quality of education, the Ministry of Higher Education has started an accreditation process under the auspices the Council for Higher Education. At the same time, the ministry has launched a strategic plan is to align Oman's education system with the needs of the labor market.

Significant investments have been made in the education of girls since the opening of the first colleges for females in Oman, the Mazoon College for Management and Applied Sciences and Al Zahra College for Girls in 1999. In order to improve the match between the education system and the labor market, especially in the area of vocational training, a Ministry of Manpower was established in 2002. The ministry at present operates four vocational training centers and five technical colleges open only to nationals.

Bahrain

The Bahraini government has undertaken several key reform initiatives in recent years in order to boost educational standards and to better match the education system with the needs of the economy. Most recently, the National Education Reform Initiative brought together the Ministry of Education, the Bahrain Economic Development Board and the private sector in order to develop new recommendations for the education system. A new independent body, the Quality

Bahraini reforms have focused on boosting curriculums standards and creating improved facilities for technical education

Assurance Authority, has been set up on the basis of the recommendations with a brief to assure quality standards at schools, universities and vocational institutes. The Authority is responsible for conducting inspections of schools, vocational providers and universities, for running school-level examinations and for setting educational standards for the schools.

Beyond efforts to boost standards, Bahrain is following the regional trends in expanding the size of the sector through investments in new schools (including international ones), universities and vocational training. Among other things, this has led to the opening of a new polytechnic, designed to provide various technical skills to students. Courses are offered as either a two-year diploma program providing vocational skills directly applicable to the job market, or a four-year program leading to a bachelor's degree.

UAE

Given the rapid expansion of the UAE economy in recent years, the local education system has struggled to match the growing needs for a range of skills, something that has led to a dramatic increase in the reliance on expatriates. The authorities in the country have sought to address the imbalance and in 2007 presented a three-year strategic plan for higher education and scientific research. As part of it, the government is setting up a national research foundation which will support research through competitive grants. The UAE, much as Qatar, has attracted a growing number of international universities. Among others, Paris-Sorbonne University in late 2006 opened a campus in Abu Dhabi. It offers the same courses as in France, as well as foundation courses of one semester or more in the French language.

The UAE is setting up a national research foundation, and has attracted a number of international universities. Abu Dhabi and Dubai education councils were set up to target primary and secondary education

In order to boost general education standards, the Abu Dhabi and Dubai Education Councils were set up in 2005 to target primary and secondary education. A public-private partnership for public school management, a government reform initiative, seeks to establish uniform curriculum standards and boost educational attainment. Many of these reforms are being implemented at a select number of Ministry schools known as Al Ghad schools, which opened in 2007-08. In addition, the management of a number of Abu Dhabi schools has been contracted out to local and regional organizations. The Education Councils are further charged with issuing licenses for educational establishments as well as for the supervision of the educational institutions. Abu Dhabi is also seeking to boost teaching standard through collaboration with teacher training institutes in Singapore, widely recognized as a world leading in this area.

Qatar Education City: Catch-up with the best

Recent years have seen Qatar introduce a range of extremely ambitious reforms aimed at transforming its system of higher education. The tiny Gulf state with a population of some 850,000 has ushered in profound changes that are fundamentally changing the face of Qatari education in an effort to realize the government's vision of creating a knowledge-based economy. The most salient and best-known elements of these reforms are the Qatar Foundation and the Qatar Education City (QEC), which in the eyes of many represent the boldest attempt in the entire region to overcome the traditional shortcomings of the Gulf education systems by leapfrogging to the highest international standards. The initial focus of the city is on select degree programs designed to meet the greatest needs of the economy.

The Qatar Education City

The Qatar Foundation for Education, Science and Community Development is a private, chartered, nonprofit organization, founded in 1995 by the Emir of Qatar to provide educational opportunities and to improve quality of life for the people of Qatar and the region as a whole. The Foundation's flagship project is the Qatar Education City located on the outskirts of Doha. Spread over a 2,500 acre campus, the Qatar Education City houses the Qatar campuses of some of the world's most renowned universities in addition to various government agencies such as the Qatar-RAND Policy Institute and some schools. The US universities present in the QEC, have set up full-fledged extensions of their home campuses (albeit at least initially in select disciplines only) with regular faculty and staff. The objective is the fully match the education experience of students on the US homes campuses of these institutions are to offer equivalent formal qualifications. All courses are free for Qatari students while others receive financial assistance on the American model.

The universities currently present in the QEC are:

- **Virginia Commonwealth University School of the Arts in Qatar (VCUQ).** Established in 1998, VCUQ has offered students a Bachelor of Fine Arts degree in communication design, fashion design or interior design through a four-year curriculum. It was the first university to set up in the QEC.
- **Weill Cornell Medical College in Qatar (WCMC-Q).** Established under the terms of a 2001 agreement between Cornell University and the Qatar Foundation, WCMC-Q is part of Weill Cornell Medical College of New York, a top-ranked clinical and medical research center in the US. WCMC-Q offers a unique, six-year integrated program of pre-medical and medical studies leading to the Cornell University MD degree. During the two-year pre-medical phase, students follow Cornell University courses in basic sciences and psychology, with additional seminars in writing and medical ethics. This is followed by the four-year Medical Program. Both programs have separate admissions processes in place.
- **Texas A&M University at Qatar (TAMUQ).** Since its launch in 2003, the Texas A&M University at Qatar has brought world-class engineering programs to Doha, offering undergraduate degrees in chemical, electrical, mechanical and petroleum engineering. TAMUQ also offers graduate programs and further houses two interdisciplinary research centers to address the production and utilization of natural resources and other relevant issues.
- **Carnegie Mellon University in Qatar (CMU-Q).** Carnegie Mellon University in Qatar has offered undergraduate degrees in business and computer science since 2004. In 2007, a

degree program in information systems was introduced. A small student-to-faculty ratio provides an opportunity for close interaction between students and professors.

- **Georgetown University School of Foreign Service in Qatar (SFS-Qatar).** The School was established in 2005 and currently offers a four-year liberal arts curriculum, with a major in International Politics leading to the Bachelor of Science in Foreign Service degree.
- **Northwestern University in Qatar (NU-Q).** NU-Q offers programs in journalism and communication. The journalism program, with concentrations including print, broadcast and multimedia, leads to a Bachelor of Science in Journalism degree awarded by Northwestern's Medill School of Journalism. The communication program, with curricular offerings in the areas of communication theory, history, and industries and media technologies and practices, leads to a Bachelor of Science in Communication degree with a major in Media Industries and Technologies, awarded by Northwestern's School of Communication.

Other academic institutions located in the Qatar Education City include:

- **Qatar Academy.** Qatar Academy is a private, non-profit, educational institution founded in 1996 by the Emir of Qatar. It offers an international education for boys and girls from pre-school all the way up to a high school diploma. The Academy is fully accredited by the U.S.-based New England Association of Schools and Colleges and the European Council of International Schools.
- **The Learning Center** is a school for students who have average or above average potential but have experienced academic problems.
- **Academic Bridge Program.** Established in 2001, this center offers a university-preparatory program and aims to equip specially select, top-caliber secondary school graduates for admission to English language degree programs at QECity campuses and other world-class universities. Unlike many other schools, a co-educational mode of teaching is followed.
- **Faculty of Islamic Studies.** The Faculty of Islamic Studies is dedicated to research and strategy on matters pertaining to Islamic heritage and values, particularly the areas of jurisprudence and Islamic finance. Currently the school offers two diploma courses in Islamic Studies and Islamic Finance, and four M.A./M.Sc. degrees in Islamic Studies, Islamic Finance and Public Policy in Islam. Master's degree programs in Islamic Architecture and Contemporary Muslim Societies are also in the pipeline.

Still at its formative stages, the QEC is expected to undergo frenetic growth in the coming years. A 350-bed, all-digital Specialty Teaching Hospital, offering general care and specializing in women's and children's health will be set up. Further, down the road, a law program is expected to be added to the existing programs, along with an executive education program in management.

Conclusion

The first wave of investing the recent oil windfall in the GCC region has primarily focused on developing the physical infrastructure of the region. In this regard, considerable progress has been made. At the same time, however, it has become increasingly obvious that true modernization, which is needed for sustained development, is only possible when comparable investments are made in the ample human capital of the region. The youth of the GCC's population and the relatively low overall employment levels to date mean that human capital could, with appropriate investments, one day rival hydrocarbons as one of the comparative advantages of the region. To road to that point is long, however.

The GCC countries have introduced a number of impressive initiatives, which increasingly amount to a decisive break with past practices

GCC governments have adopted a range of measures designed to improve the quality of education as well as access to it. There have been a number of impressive initiatives to set up new institutions of especially higher education, some of them regional campuses of world-class institutions from the US and the EU. Old conventions have increasingly fallen by the wayside as local policy-makers have sought to combine best international standards with local traditions. Increasingly, the region is witnessing the emergence of more and more centers of excellence in higher education. At the same time, awareness has increased of the need to make appropriate investments at earlier stages of educations as well, so as to equip students with an adequate command of English and with numerical skills, which will in turn enable them to fully reap the benefits of world-class university education. Attempts are also underway to fundamentally overhaul the philosophy of education and the abandon the tradition rote learning in favor of much creative intellectual inquiry.

Although returns to massive financial investments in education have been limited in the past, a growing number of success stories are now emerging

Creating a strong foundation for the education of the region's youth involves daunting challenges, however. Although impressive financial resources have been devoted to education for a long time, the success in turning that investment into high-quality outputs has been limited. The performance of Gulf students has invariably fallen short of Western standards, which has necessitated a variety of catch-up programs for new university entrants. Especially in the case of the Saudi Arabia, the number of hours devoted to the study of the humanities has entailed compromises in other areas, something that is only beginning to be addressed now. Another area of weakness has been a relative neglect of vocational education, which has led locals to shun particular trades and resulted in a high reliance on expatriates. Nonetheless, progress is being made and success stories becoming more numerous. Qatar can serve as an example for education in rest of the GCC region due to the impressive strides it has made towards its goal of a knowledge-based society. Good foundation at school level has also resulted into quality higher education in the country.

Educational reform in the GCC cannot simply focus on improving education standards and attainment, but also needs to deal with question of providing employment to the educated youth of the region

Improving educational standards and attainment is not the only challenge facing policy-makers. Work in other areas will also be needed to ensure that the steadily better educated youth of the region is placed in the labor market in ways that best serve the needs of the region's economies. Two of the greatest deviations from the global norm in this regard involve the low levels of female labor force participation and the oversized public sector. Attitudes are changing across the board but concrete progress is likely to depend on arrangements that address relative pay in the public and private sectors. Similarly, new ideas will be needed for women wishing to participate in the labor force in a way to enables them to reconcile their professional aspirations with their family obligations.

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