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# Quality higher education is the foundation of a knowledge society: where does the UAE stand?

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## ABSTRACT

Since 1997, the United Arab Emirates (UAE) has invested in higher education and its expansion as part of its commitment to building a knowledge-based society. Though the UAE has prioritised quality higher education, it still faces challenges in producing graduates who are capable of actively participating in building its knowledge base. The literature reveals a clear mismatch between the qualities of university graduates and continually changing labour market needs. Along with demographic challenges, cultural and institutional factors impede progress. This paper discusses these challenges and offers policy recommendations designed to support the UAE in its goal of Emiratising its workforce and creating a knowledge-based society.

## KEYWORDS

Knowledge-based society; graduate attributes; United Arab Emirates; higher education

## Introduction

The United Arab Emirates (UAE) is one of the wealthiest countries in the Middle East. Since the discovery of oil in the 1960s, the UAE has rapidly developed across various sectors including higher education. Since 1997, the UAE has expanded its higher education system internationally, attracting many well-regarded foreign universities to its ‘free zones’. This investment is part of the UAE’s commitment to compete globally as a knowledge-based society (Emirates Competitiveness Council, 2014).

In 2017, the UAE’s Ministry of Education (MOE) launched its National Strategy for Higher Education 2030, prioritising quality higher education, particularly with respect to research and the country’s focus on becoming a knowledge economy. The 2030 plan is focused on developing students, linking academia and the labour market, engaging the private sector in curricular development, promoting and expanding the production of research and increasing the global competitiveness of its higher education institutions by creating new and innovative academic programmes. This expansion is aimed specifically at producing specialised and professional graduates who can compete in vital global sectors by producing research, engaging in entrepreneurship and joining the labour market.

This ambitious goal, however, stands in stark contrast to the realities of its education system (Wiseman *et al.*, 2014; British Council, 2016; Tezcan-Unal, 2019). The small percentage of nationals within the country's population (11.5%) and the disconnect between students' abilities and aspirations (a prioritisation of high wages paired with a lack of attention to preparation) mark the 2030 goals as unattainable in the near future (Badry, 2019). To actively participate in the global economy as a knowledge-based society and knowledge economy, the UAE must reshape its higher education system to match its cultural, economic and institutional contexts. Institutions of higher education cannot rise to this task alone; the private sector and government must also participate (Snellman, 2015).

As the success of any higher education system is measured by the quality of its graduates and their subsequent placement in the labour market, understanding the connections between UAE's education sector and private and public employment sectors is crucial. With more than 60% of the UAE's population under the age of 29, education and entry-level employment will remain a top governmental priority for years to come (UNDP, 2016). This literature review describes the cultural and institutional challenges that are currently impeding the UAE's effort to produce globally competitive graduates and transform itself into a knowledge-based society. The article offers policy recommendations in response to the 2030 national plan. The sections that follow introduce the concepts of a knowledge-based society and knowledge economy, discuss the role of higher education in producing employable graduates in a knowledge society, describe the primary challenges the UAE is facing in establishing itself as a knowledge economy and conclude with recommendations for achieving the 2030 national goals.

### **Defining the knowledge society**

In the 1970s and 1980s, the third industrial revolution transformed most of the world (Schwab, 2017). In the 1990s, an informational revolution transformed the world further and ushered in a fourth industrial revolution (Brynjolfsson & McAfee, 2016; Schwab, 2017). This transformation also significantly altered world economies, globalising them through the proliferation of information and communication technologies (ICT) (Snellman, 2015). In this new economic reality, knowledge-based economies exist when 'the production, diffusion, and use of technology and information are keys to economic activity and sustainable growth' (OECD, 1999). These economies depend on human capital and creative, adaptive thinking. Zacher (2015) described knowledge-based societies as 'advanced societies reaching a stage of development predominantly based on production and utilisation of knowledge'. Both knowledge-based societies and economies centre cognitive resources; higher education institutions are the predominant origins of these resources (Snellman, 2015).

Maintaining knowledge-based societies requires continuous adaptation and response to rapid technological development. This adaptation requires the expansion of technological skill sets and the evolution of education-to-labour market trajectories to avoid elimination by automation (McKinsey Global Institute, 2017; Snellman, 2015). The Coronavirus pandemic has highlighted two things relevant to UAE's higher education sector: the potential of distance education and the reality that most jobs can be accomplished remotely through the employment of ICT. Companies can cut costs and eliminate jobs that can be automated or are made redundant through remote work. Future jobs will require 41% more critical thinking, 77% of job tasks will require science and mathematic skills and 26% of administrative jobs will be lost (McKinsey Global Institute, 2017). Both institutions of higher education and their students must adapt to these labour market realities.

### **The changing role of higher education in knowledge societies**

Higher education institutions are the lead actors in the production and dissemination of knowledge (Beerens, 2008). These institutions facilitate education, confer degrees and produce research that responds to the rapidly changing global environment (Snellman, 2015). Higher education must adapt to the changing labour needs of the market and focus on the creation of knowledge-based societies and economies (Smith *et al.*, 2018). As higher education is increasingly responsive to the influence of academic capitalism (Slaughter *et al.*, 2004), prioritising the skills demanded by the market is crucial (Harvey, 1999; Bowers-Brown & Harvey, 2003). While higher education institutions can push students down certain employment paths, students also rely upon their unique life experiences and professional opportunities prior to employment (Harvey, 2001).

Reshaping education to meet the goal of employability is crucial for building a knowledge-based society (Poltermann, 2014). Alongside advanced technical development that responds to rapid shifts in technology, attitude and soft skills, such as communication, collaboration and innovation, are crucial for students entering a global market (Ontario Public Service, 2016; van Laar *et al.*, 2017). Universities should thus embrace a new, more social and market-oriented role to address emerging economic needs for knowledge-based societies (Snellman, 2015). Massive access and expansion should be coupled with a focus on lifelong and continuing education. Responding to multiple external expectations (government, industry, students), however, is difficult and Snellman (2015) recommended that universities should prioritise establishing their status as central knowledge producers (research centres) alongside collaboration with other sectors of the knowledge-based society. As knowledge production is increasingly regarded as a benchmark of national performance, emphasising the importance of research and knowledge production is critical for higher education (Beerens, 2008).

## Employability of graduates in a knowledge society

Understanding both the demographic composition of the UAE and its higher education landscape is critical for assessing both the quality of higher education and the accessibility of a knowledge-based society. The population of the UAE increased significantly due to an influx of international workers following the country's economic growth. Expats comprise 87.9% of the total population (CIA, 2020). Emiratis comprise only 11.5% of the total population, though the government is committed to leveraging its national citizens to position itself as a global actor (Wiseman *et al.*, 2014). The demographic imbalance within the UAE has, however, caused foreign workers to dominate the workforce, comprising 73% of private sector labour. With its small national population and low ratio (3:100) of public universities to private (Ashour & Fatima, 2016; CHEDS, 2012), the private sector in the UAE is able to directly influence higher education and the UAE is rapidly becoming the largest importer of higher education worldwide (Ashour *et al.*, 2016). The higher education sector in the UAE has thus become extremely market dependent, leading some to question the quality of education that students are receiving (Ashour, 2017).

The UAE is committed to improving the quality of education and is investing Dh10.2 billion between 2017 and 2021, representing a large portion of the total federal budget (Gulfnews, 2017). Despite high investment in education, students still fall below the average in mathematics, reading and science compared to other developed countries (British Council, 2016). This has resulted in a relative minority electing to study mathematics and natural sciences. Recent figures from the Federal Competitiveness and Statistics Authority (FCSA, 2017) indicate that only 14% of students in private universities and 32% in federal institutions are enrolled in subjects such as engineering and information technology, while the highest percentage of Emirati students (67% in private universities and 56% in federal institutions) are enrolled in social sciences. The remainder of the students are enrolled in health and medical science. These figures reflect a sizeable mismatch between degrees conferred and labour market needs (Hvidt, 2016).

There is also minimal variation in this trend year to year, despite changing labour demands (Price Waterhouse and Coopers (PwC) & Lybrand, 2019). High enrolment in business and engineering at private universities reflects the lower comparative cost of instruction, prioritising profitability over student success or specialisations. The government has recognised the need to shift education towards labour demands, prioritising sectors such as energy and petrochemicals, manufacturing, trade and logistics as well as technology, media and communications. While this shift has been identified, and supported by data that suggest data science and statistical analyses are valuable skillsets, the extent and speed to which private and public universities can and will respond is limited by economic conditions (British Council, 2018). Universities should be

guided by the UAE government to redirect enrolment in needed fields and redirect resources (capital, instructional staff) to support the programmes that are educating the future of the Emirati workforce.

This is a difficult task, as there is a tenuous connection between education and economic success in the UAE (Hvidt, 2016). While the UAE is not an exception when it comes to education lagging behind labour demands (Steer *et al.*, 2014; UNDP, 2016; World Bank, 2008), the nation's youth are not prepared to successfully compete in the private sector (Arab Thought Foundation and PWC, 2013). Only 22% of UAE students believe their education prepares them sufficiently for career success (McKinsey Global Institute, 2017). Additionally, the nation's youth are competing for jobs with international peers. Preparing Emiratis to compete at a global scale requires not only adapting to labour demands but also fostering lifelong learning and self-directed adaptation in a population that works to minimise the education required to start a career (British Council, 2018). Employers in the private sector echo this need, indicating that soft skills are lacking in the nation's population and that higher education institutions in the UAE are not adequately preparing students for contemporary competencies required by employers (British Council, 2018). There are distinct institutional and cultural challenges contributing to this preparation gap.

## **Institutional and cultural challenges**

This section describes challenges institutions of higher education in the UAE face when educating students and facilitating knowledge production towards the goal of becoming a knowledge-based society and economy. This section also proposes recommendations for resolving some of these challenges.

### ***Institutional challenges***

The UAE has made enormous strides in resolving educational gender disparities, advancing literacy rates and expanding its higher education system in the last 40 years. Unfortunately, the desired Emiratisation of the workforce has not yet been realised (Salama, 2013; Olarte-ulherr, 2015; Alshaal, 2018). Despite the growth of the higher education sector, there is a distinct lack of synchronisation between education and economic policy (Badry, 2019), far too much supply for the associated demand (Wilkins, 2010; Ashour & Fatima, 2016) and an inattention to vocational education (Badry, 2019). Higher education in the UAE has thus largely relied upon student-fee-based models that sacrifice research funding and do not allow for the expansion of research or innovation, which are crucial to adapting the sector to contemporary needs.

Badry (2019) indicated that this misalignment between the higher education sector and the realities of the labour market has resulted in a workforce that has become decreasingly competitive. This misalignment has also resulted in

a surplus of supply that has caused many institutions to close and others to function well under capacity (Ashour *et al.*, 2016; Wilkins, 2010). Another result of this desynchronisation is the inattention to vocational training and prioritisation of four-year degrees. This shift has satisfied students as customers, who find technical and vocational work unattractive, but does not adequately meet labour market demands (Badry, 2019). Attending to student–consumer desire has limited UAE’s higher education sector in responding to labour needs and diversifying its workforce in the interest of Emiratisation.

Standardisation and incapability to innovate and adapt directly contradicts the 2030 national goals of developing creative curricula. Unfortunately, stringent regulatory policies presently limit institutions from innovating and reshaping their offerings for fear of losing accreditation. This lack of curricular adaptation limits Emirati students from gaining valuable soft skills necessary for successful careers (Harvey & Bowers-Brown, 2003).

While the country is making clear investments in science, technology, engineering and mathematics (STEM) education and its information infrastructure (Esposito *et al.*, 2017), the UAE’s educational system is fundamentally not designed to serve a knowledge society (Wiseman *et al.*, 2014). Inadequate preparation throughout prior education could cripple higher education’s ability to graduate students who are globally competitive (Andrews, 2015). Hvidt’s (2015) study on the challenges of implementing knowledge-based economies in the Gulf region found that the primary, secondary and tertiary education systems by and large do not prepare students adequately for a knowledge society, which requires life-long learning and skills such as critical and innovative thinking. Reinventing the higher education landscape alone cannot overcome cultural and institutional constraints originating from the primary and secondary education systems.

UAE’s higher education institutions are structurally incapable of producing the research, technology transfer and capable graduates that more mature institutions can (Kearney, 2009). Few universities in the UAE (UAE University, the University of Sharjah and Zayed University) classify themselves as research universities and receive public funding. Despite the high costs of higher education in the UAE (Oxford Business Group, 2015), universities are not competing internationally when ranked on their research output, international recognition, or graduate placement (Wilkins, 2010). Limited national funding (most institutions are private) has led to extremely heavy teaching and administrative loads and limited freedom or resources for research (O’Sullivan, 2015), hamstringing professors’ abilities to research, create or innovate. Similarly, academic job insecurity limits both commitment and engagement (Chapman *et al.*, 2014).

### **Cultural challenges**

This section discusses cultural issues affecting graduate quality, educational aspirations and career choices.

### ***Attitude towards education***

Families in the UAE are generally supportive of education but lack academic support systems (Daleure *et al.*, 2013). Older generations with limited education may also struggle to support students underachieving or struggling academically. Improving the cultural climate towards education in the UAE is crucial for improving the outcomes (O'Sullivan, 2015).

For many university students, credentials are more important than knowledge acquisition (Ashour *et al.*, 2016). Universities have become service providers to students as consumers, which Bunce *et al.* (2017) correlated with lower academic performance. Success, however, is more reliant on knowledge acquisition than credentials (Brouwer & Jansen, 2019). Many UAE students, unfortunately, expect high grades without putting in the requisite work and are accommodated by many universities, inflating graduation rates and mitigating actual knowledge acquisition. This credential-based perspective towards education is shaped by the public sector employment market, which provides easy access to well-paid jobs for Emiratis without continued or advanced education.

The attitudes of students towards education are shaped by the likelihood of finding a job without requiring further education studies. The easy access of nationals to well-paid jobs not requiring a degree plays a key role in lowering national students' appreciation of the economic return of education (Ashour, 2020). The salaries offered to Emiratis in the public sector, police and military are attractive enough to make a student bypass or drop out of their education. This situation, however, is expected to change, as governmental regulation has increasingly tied wages to education, encouraging many nationals to pursue degrees after years in the workforce. Unfortunately, this time lapse has negatively affected the confidence and ability of many Emiratis, leading them to pursue non-STEM degree paths (for example, social sciences, business, humanities) which they erroneously believe are easier to pass and which are also out of alignment with projected future labour demands (Ashour, 2019).

### ***Attitude towards employment***

The UAE's policy of Emiratisation has both helped reduce the unemployment rate of Emirati graduates (Daleure, 2016) and created job frustration and tense workplace environments (Alabdelkarim *et al.*, 2014), as Emiratis are promoted and overcompensated without sufficient qualifications or experience (Kirk, 2010). The national prioritisation of work in the public sector indicates a lack of readiness to meet the challenges of a knowledge-based economy. Emiratis are inclined to work in the public sector by family influence and negative perspectives on private-sector employment (Daleure *et al.*, 2014; Wiseman *et al.*, 2014). Emiratis prefer jobs with prestige, a high salary and minimum requirements. The private sector prefers to hire foreign employees because they are less expensive to hire, creating imbalances in the labour market (Toledo, 2013), with only 0.5% of the private sector and 60% of the public sector



comprised of Emiratis (Salem, 2014). The most attractive private sector job, banking, offers Emiratis remuneration and working conditions closest to the public sector, attracting the highest percentage of private sector Emirati employees (Ewers, 2013). The national attitude toward employment, then, is to avoid investment in education in certain fields, severely limiting the nation's pipeline of students in STEM education and technical jobs. The low retirement age in the UAE is also an issue, with many nationals opting for early retirement, leaving a mentorship gap between nationals in most employment sectors.

### *Language proficiency*

In the UAE, all universities require students to have an adequate command of the English language. English proficiency has always been a concern, particularly for students who acquired their secondary education in the Arabic language. As required by the UAE Ministry of Education, the International English Language Testing System (IELTS) is part of the admission requirement. A score of 5.0 out of 9 is required for bachelor's degree courses in almost all academic disciplines taught in the English language (Schoepp, 2018) and 4.5 out of 9 for academic courses taught in Arabic, such as mass communication, sociology and psychology. These conditions apply in all types of universities that are accredited by the UAE Commission of Academic Accreditation (CAA). However, despite numerous reforms by the UAE government, language proficiency of students is still often insufficient. This insufficiency limits students' academic progress and their potential field of study because the English language is the medium of instruction in the majority of available academic programmes. If students cannot pass IELTS, their study options are limited to the few courses that are taught in Arabic or to the very few universities that do not apply this rule. Bridging students from pre-university Arabic instruction to university instruction in English, or offering more English-language courses, is necessary to improve language proficiency and ensure academic success.

In 2016, the UAE Ministry of Education introduced the Emirates Standardised Test (EmSAT) as a requirement for entry into higher education. The EmSAT ensures that students possess base-level academic requirements in Arabic, English, chemistry, physics and mathematics and was created using benchmarking data from British and American universities. This standard is a major challenge for student enrolment in technical and natural science fields. Poor pre-university academic preparedness and low grades lead to limited success and student attrition (Paura & Arhipova, 2014). Many Emiratis who pass secondary school must complete an academic bridging year before enrolling in a university. There has been a slight improvement in this area. In 2016, 77% of students were required to pass a foundation year before they could enrol in a college, compared with 80% in 2014 (Pennington, 2017). The pre-university preparatory year consumes one-third of the higher education budget but the plan by the UAE government to abolish the foundation year by 2021 is far too ambitious. The

high cost of the foundation year cuts into higher education funding for other important areas, such as research, innovation or the creation of new programmes. The foundation year also delays student from completing their degrees, since no credits are earned when passing these courses.

### ***Gender imbalances in education and employment***

Gender imbalances are common in both higher education and the labour market. In the UAE, there is a clear achievement gap, indicating women outnumber and outperform men in pre-university education and higher education (Ridge, 2014). A study by Ashour (2020) revealed that this reverse education gap has its origins in the socialisation processes at home and school, as well as in rational choices made by male students who prefer work over education (since they marry early and have financial responsibilities as breadwinners). The gap also stems from socially constructed, non-cognitive traits in females, who are more disciplined, focused, committed and attentive in the classroom, combined with their increased motivation in a patriarchal society. The cultural construct of gender in the UAE grants greater freedom and independence to males, leading them to be subject to greater influence by their peers and exhibiting problematic behaviour and academic failure. In contrast, females who have multiple home responsibilities, are more diligent and are higher achievers.

This imbalance may negatively affect the future of higher education and employment sector in the UAE, as women comprise only 25% of the national workforce (Wang & Kassam, 2016). The mismatch between education and employment, as well as career choices, is clearly influenced by tradition and family values and strict patriarchal expectations (Aswad *et al.*, 2011). Recruiting and retaining more women in STEM subjects and more men in higher education in general could benefit future generations by encouraging the development of a highly educated national workforce and decreasing the reliance on imported labour.

### **Conclusion and recommendations**

This paper has discussed the institutional and cultural challenges facing the UAE in positioning itself as a knowledge society, with a specific focus on the role of higher education in reaching this national aim. The UAE has made great strides in implementing, expanding and improving its national higher education sector since 1971 but providing quality higher education and producing quality graduates who can compete at a global level will require dramatic institutional and national shifts.

While national budgetary expenditure suggests a generous commitment to education (Zacharias & Saadi, 2018), establishing the UAE as a knowledge-based society and knowledge economy will require a commitment to adapting and improving graduates' skills to match the changing needs of the labour market. While capital investment can help, it may not be enough to resolve institutional,

structural and cultural issues. Creating a knowledge-based society is necessary given the decline in oil prices, the global trend in digital transformation, the expected economic recession resulting from the coronavirus pandemic and the UAE's national need to pivot to a more sustainable economy. The UAE's response to these challenges requires it to address critical institutional and cultural issues, including lagging curricula, low teaching standards, weaknesses in STEM skills and subject offerings and national attitudes towards education, as well as the quality of students who transit from secondary school to higher education. The agenda should include improving basic STEM skills through the school system and early university years, as well as emphasising innovation, creativity and critical thinking across curricula in all educational stages (McKinsey, 2017).

The complete transformation of the higher education landscape in the UAE is necessary for it to achieve its desired goal of becoming a knowledge-based society. Research, innovation, instructional excellence and quality must be prioritised. Similarly, international accreditation, benchmarking and research collaboration could benefit the UAE's universities. Furthermore, strengthening vocational education and consolidating redundancies to ensure supply meets demand are critical to establishing the UAE as a knowledge-based society and knowledge economy. The UAE government should ensure that priority subjects are offered through reputable public and private institutions. The private sector should be more actively involved in identifying priority fields and curriculum development by mapping current and future skills required in each industry. Furthermore, the government should avoid focusing on rigid standardisation of quality assurance processes, which require excessively documented evidence and do not promote innovation. Instead, the UAE government should impose robust restrictions on private universities to ensure that they provide a high quality education, given that many small privately owned establishments and overseas university branches (with a few exceptions such as Middlesex University in Dubai) are primarily in place to make money out of the UAE.

To address the cultural challenges, there is a need to increase interest in STEM fields by raising awareness of their importance and career potential and removing any negative stereotypes around them (Aswad *et al.*, 2011). The government should also reward the enrolment of Emirati students in fields with increasing labour sector demand (medicine, engineering, information technology) through providing monetary support and ensuring that salaries are higher than the salaries for subsidised public sector roles that require less formal education. Higher education policy should also be adapted to offer early work experience in these demanded fields to university students through internships and certificate programmes that emphasise job skills (British Council, 2018).

To change the attitude of national employees and university students to working in the private sector, the government could support private sector recruitment by subsidising salaries and encouraging professional development and continuing education. Singapore provides a good example to follow. The government asks every industry to predict changes over three to five years and

to identify the skills needed to adapt to these changes; the government also offers subsidies to every Singaporean citizen aged 25 years or older to join a training course. Applying these policies in the UAE would contribute to enhancing the employability of university graduates. National employees who pursue lifelong learning could also be incentivised (World Economic Forum, 2018). Employers should be also incentivised to develop junior employees' skills through professional development and ongoing training opportunities.

Knowing that expatriate workforces have significantly contributed to building the economies of countries such as Canada, Australia, United States of America and the United Kingdom (Hvidt, 2015), the UAE could similarly benefit by integrating experienced expats into society through a more secure employment relationship, so they feel safe transferring their experiences to nationals. Similarly, women's participation in the workforce should be encouraged to address the gender imbalance and increase the overall participation of Emirati women in both private and public sectors as well as in STEM fields.

Language proficiency is another obstacle the UAE needs to overcome. The UAE's educational policy should be redesigned to achieve biliteracy in Arabic and English, with a balanced bilingual academic programme from the outset. English and Arabic curricula should be designed in a way that helps students to compete in the globalised world by being proficient in English (the global language), while maintaining their identity by preserving Arabic. While many international universities offer students intensive six-month English courses prior to admission, extensive bridge programmes might not be received well in the UAE given the national desire to minimise time investment in education to maximise salary increases at work. Some countries have seen success from implementing bridge programmes and pre-enrolment courses should be sustained in the UAE, particularly for low-achieving students in STEM fields. For example, Venegas-Muggli (2019) assessed the impact on students' academic progression of a pre-college outreach programme in Chile to enhance their language and mathematics aptitude and to develop their soft skills. The study showed that students who participated in this initiative achieved higher average grades and attendance levels when they joined colleges than those who had not participated. Implementing similar programmes for low-achievers in secondary education in the UAE would undoubtedly help resolve issues such as pre-college unpreparedness and dropout. These programmes would also assist students in improving their performance in STEM subjects and developing their personalities and attitudes to education.

Finally, encouraging people to obtain a university degree and an employment placement can only be applauded, so long as the process is based on academic merit, qualifications and competencies rather than policy targets. As the UAE adapts its education and labour systems, it must also continue to import technology, knowledge and foreign labour to ensure that it has the resources to establish the knowledge-based society and economy it needs.

## Disclosure statement

No potential conflict of interest was reported by the author.

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