

What Makes the UAE a Knowledge Society?

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Abstract

This paper starts with the idea that knowledge has become one of the most important factors to determine human development and explore the different requirements that need to be met by the government and the citizens of the UAE to succeed in building a knowledge society (KS). An explanation and examination of the five pillars of establishing a KS in the Arab World, as stated in the 2003 United Nations report, is carried out to study the possibility of creating a KS in the UAE. The present paper highlights the important roles teachers can perform to help students to become active members of the new society.

What Makes the UAE a Knowledge Society?

Introduction

Discussion about building a knowledge society has been gaining momentum in the UAE since 2007 with the establishment of the Mohammed Bin Rashid Al Maktoum Foundation (MBRF). According to the United Nations Development Programme (UNDP, 2003), since unification in 1971, the UAE has achieved noticeable progress in disseminating Information Technology (IT). In addition, the UAE is ranked amongst the best Arab-countries in the field of human development- and 32nd globally - moving up 5 places from its ranking in 2005 (UNDP, 2010).

Sheikh Mohammad Bin Rashid Al Maktoum, the ruler of Dubai, is internationally recognized as a pioneer, especially in calling for the establishment of a knowledge-based economy and society in the UAE. At the Knowledge Conference in Dubai in 2007, he explained "that planning, organization, and sound management of resources and awareness of the interconnection and integration in the performance and roles of knowledge producers are basic conditions for enduring knowledge development" (as cited in Gulf News, 2007).

At this point, it is obvious that building a knowledge-based economy and society is a top-priority in order to excel in the area of economic and human development. Sheikh Nahyan bin Mubarak Al Nahyan, UAE Minister of Higher Education and Scientific Research, asserts that his "primary focus is on educating the next generation of leaders for tomorrow's knowledge-based economy and society"(as cited in EDB, 2010). In addition, the 2021 vision of the UAE states that "the UAE [wants] to

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transform its economy into a model where growth is driven by knowledge and innovation" (UAE Cabinet, 2010).

Below, I will examine the readiness of the UAE to meet the requirements of building a KS. The discussion will be mostly supported by evidence from official UAE documents, UN publications, local newspapers as well as personal observations and practical knowledge.

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What is a knowledge society?

Peter Drucker (2001) wrote, in the Economist, an article whose title is "Next Society in 2001". He states that "the next society will be a knowledge society. Knowledge will be its key resource and knowledge workers will be the dominant group in its workforce" (para. 9). A knowledge-based society is defined as "one where knowledge diffusion, production and application become the organising principle in all aspects of human activity: culture, society, the economy, politics, and private life" (UNDP, 2003, p. 2)¹. Furthermore, these knowledge societies provide an environment "in which institutions and organizations enable people and information to develop without limits and open opportunities for all kinds of knowledge to be mass-produced and mass-utilized throughout the whole society" (DESA, 2005, p. 141).

Why is it important to understand knowledge societies?

There is consensus among writers about the utmost goal of building a KS: human development. According to UNESCO, "In knowledge-based economies, human capital is the main source of profit" (2005, p. 159). The same point was stressed by the report by DESA that a KS "supports the goal of high quality and safety of life for all people everywhere"(DESA, 2005, p. xi).

Drucker's definition echoes the World Bank Development Report (1998) which shows that "countries that postpone these tasks [developing national knowledge strategies] will fall behind those that move faster, and the unhappy consequences for their development prospects will be hard to remedy" (World Bank, 1998, p. 16). Such

¹. Since the focus of this paper is on the UAE, which is part of the Arab World, the definition used by the UNDP in 2003 will be used throughout this paper.

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advantages explain the motives that encourage the leaders of the UAE to invest more in building a KS by meeting the five key requirements outlined by UNDP in 2003.

What are the pillars of building a KS?

The UNDP (2003, p. 12) suggests a concluding strategic vision of the Arab knowledge society, supported by five pillars:

- i. Guaranteeing the key freedoms of opinion, speech and assembly through good governance bounded by the law.
- ii. Disseminating high-quality education for all.
- iii. Embedding and ingraining science, and building and broadening the capacity for research and development in all societal activities.
- iv. Shifting rapidly towards knowledge based production in Arab socioeconomic structures.
- v. Developing an authentic, broad-minded and enlightened Arab knowledge model.

❶ Guaranteeing the key freedoms of opinion, speech and assembly through good governance bounded by the law

The third part of the UAE constitution describes the rights and duties of UAE citizens. Article 30 states "Freedom of opinion and expressing it verbally, in writing or by other means of expression shall be guaranteed within the limits of law" (UAE Cabinet, 2010). Additionally, the 2021 vision of the UAE asserts that "A strong and effective justice system will bolster security, and the UAE will be diligent in its duty to defend and uphold the rights, interests and freedoms of all" (UAE Cabinet, 2010).

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According to Sheikh Mohammad Al Maktoum "knowledge and freedom are two sides to the same coin"(Gulf News, 2007). Speaking at a press conference at Zabeel Palace he was quoted as saying "We strongly believe that media is the mirror of the nation. It has a noble message to disseminate and to enlighten the public, away from exaggeration, bias and distortion of facts. Media is the nation's voice" (Emirates247.com, 2010).

Before the 10th session of the Human Rights Council, Minister of State for Foreign Affairs, Dr. Anwar Mohammad Gargash concludes his speech by stressing that "the UAE is proud of its human rights achievements in a short span of time. But, it also humbly realises that much more needs to be done, and is ready to do the same both individually and at the global level" (Emirates News Agency, 2009).

For Dr. Abdulkhaleq Abdullah, a professor of political science at Emirates University, comments on the Freedom House report which ranks the UAE 137 out of 196, "it is not a very bright ranking for a country that prides itself to being the first and the best in socioeconomic status" (Abdullah, 2008). Abdullah thinks that the UAE needs "a strong dose of press freedom and political reform. This will certainly enhance its socioeconomic successes" (Abdullah, 2008).

In my opinion, the government in the UAE looks much more open minded than the society. This can be attributed to the fact that the Emirati community seems hard to accept dramatic change because they perceive it from a tribal, sometimes religious, stand, thus always fearing to violate the societal manners and/or their tribal traditions.

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Therefore, it is very cautious with regards to demand for the freedoms of speech and press. Such a situation necessitates that people are encouraged to learn how to express their opinion without fear in order to make it possible to build a KS.

② High-quality education at all levels

In reality, excellence in education is an essential feature of knowledge societies. The 2021 vision of the UAE states that "we want our nation's schools to nurture well-rounded citizens, confident in their inner abilities and fully equipped for adulthood" (UAE Cabinet, 2010).

Since the formation of the UAE in 1971, the leaders of the UAE have shown great interest in developing the education system in the country and have put in place enough measures to boost the sector. "About 22.5 % of the total budget [for the fiscal year 2010] of Dh 43.6 billion has been allocated to the education sector, reflecting the strategic priorities of the country" (Expo Centre Sharjah, 2010).

Today, the UAE offers comprehensive education to all children from kindergarten to university, with citizens provided free education. According to official figures, "95 percent of all female students and 80 percent of all male students who are enrolled in the final year of secondary school apply for admission to a higher education institution in the UAE or study abroad" (Emirates247.com, 2010). Meanwhile, the UAE Economic Report for 2009, released by the National Statistics Bureau, shows that the education sector witnessed remarkable growth in 2008 and 2009. The report showed that "54% of the UAE population has a secondary degree and put illiteracy levels at 7%.

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Lord (2008) researched the conflict that occurs between investment and the educational outcomes. He acknowledges the existence of a gap between them and therefore attributes that to three main causes: an insufficient focus on the quality of education, too little public accountability, and inadequate incentives to improve teaching (Lord, 2008, p. 20). In the area of expenditure on education "Arab countries [including the UAE] spend an average of 5% of GDP on education" (Lord, 2008, p. 20), which is higher than the 1.6% spent by the UAE. However, the return on this investment is currently not high.

In recent years, the performance of students on international tests is one of the measures of the quality of education. According to Thomson (2008), students' low-level science and mathematics skills were confirmed in the Trends in International Mathematics and Science Study (TIMSS), released in 2007. Of the 49 countries that were assessed, Dubai came 39th in mathematics with a score of 444 (scale average of 500 score points) for Year 4 and 34th with a score of 461 for Year 8, 34th in Science with a score of 460 (Year 4) and 22nd (Year 8) with a score of 489. A similar unsatisfactory result was in 2009 when 6500 students from 130 public and private schools in Dubai took part in the worldwide Program for International Student Assessment (PISA). According to OECD (2010), of the 65 countries that were assessed, Dubai came 42nd in reading proficiency with a score of 459, 41st in mathematics with a score of 453, and 41st in science with a score of 466.

The lackluster results were a reflection of the low standards of education in public schools across the UAE. Andreas Schleicher, the head of Pisa, said it was

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"worrying" that one third of the students in Dubai were not meeting minimum standards in reading literacy" (as cited in Ahmed, 2010).

③ Deep commitment to science and scientific research

The 2009 Knowledge Economy Index (KEI) report by the World Bank Institute which was based on four pillars: economic incentive, education, innovation and information and communication technologies (ICT) ranked the UAE 45th out of 146 countries in 2009. Also, the number of researchers in the UAE is very low. The UAE ranks 75 for the number of researchers among 134 countries (MBRF & UNDP/ RBAS, 2009, p. 190). Commenting on this situation, Dr Abdullah Esmail Abdullah, Senior Executive Adviser at the Emirates Foundation said "if we want to develop as a nation we need to compete with research, if we don't we will stay behind" (as cited in Moussly, 2010).

The government has taken a number of steps and initiatives to boost scientific research. Among those initiatives was establishing institutions to fund research in the UAE. The UAE has three main government-backed funds to nurture research.

Firstly, the Information and Communication Technology (ICT) Fund was established in 2007. "The ICT Fund is designed to fuel innovative research & development projects within the UAE ICT sector and support education and training in the field"(ICT, 2007). The second fund is the Emirates Foundation for Philanthropy (EF) created to "support a self-sustaining culture – one fully conducive to new learning – through global-standard education and research support programmes" (EF, 2008). Lastly, the National Research Fund (NRF) in Dubai seeks "To support world-class

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research activities, and create an internationally competitive research environment and innovation system in the United Arab Emirates"(NRF, 2008).

In the field of ICT, the UAE is among the top countries in investment in this sector as a tool for growth and competitiveness. According to Sheikha Lubna Al Qasimi, the Minister of Foreign Trade, the UAE is "one of the world's fastest-growing areas for ICT expenditure... By the end of this year, the UAE would have spent around US\$5bn on technology investments" (as cited in Flanagan, 2010).

What is needed to generate more research and development in the UAE?

According to Shaikh Nahyan Bin Mubarak Al Nahyan (2010), despite its noted financial commitment to education, "there is a need for reform in public school system, in order to create a more innovative society in the UAE....globally we find that innovation is most often driven by breakthroughs in science, mathematics and technology" (as cited in Landais, 2010). It is noticeable that very few Emirati students opt for mathematics, technology or science specialization at the university level. Schools and higher academic institutions must encourage students to take up these subjects to foster innovation in the UAE.

Yet, despite the fact that the number of universities and higher colleges and institutes in the UAE has increased from "1" in 1977 to 64 in 2009/2010, the expansion in enrollment has taken place mostly at the Bachelor's level and with a focus in the humanities and social sciences. The universities in the UAE need to provide MD and PhD degrees to create an environment for scientific research. The scarcity of PhD programs in the UAE universities stand in the way of creating and developing

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research centres. So, the UAE has to invest more in research especially that it was ranked 50th out of 134 countries in terms of expenditure on research in 2008.

Khalifa University for Science, Technology and Research (KUSTAR), and Masdar Institute of Science and Technology (MIST) are two good examples of research centres developed in the UAE. KUSTAR was established in 2008 as an "independent, non-profit coeducational institution, dedicated to the advancement of learning through teaching and research and to the discovery and application of knowledge" (KUSTAR, 2008). Meanwhile, Masdar Institute of Science and Technology (MIST) was established in 2009 in Abu Dhabi "To be a world-class graduate-level institution, seamlessly integrating research and education to produce future world leaders and critical thinkers in advanced energy and sustainability" (MIST, 2010).

Furthermore, civil society and the private sector in the UAE may play a better role in funding research by energizing the traditions of *waqf* (religious endowments). Muslims are encouraged to dedicate permanently any property for any religious, pious or charitable purposes.

In the UAE, among the most important initiatives in support of scientific research has been the establishment in 2007 of MBRF, a personal initiative of Sheikh Mohammed bin Rashid Al Maktoum, who allocated the sum of \$10 billion as a knowledge endowment. Another ambitious endowment fund (Dh 10 million) was launched at Zayed University in 2010. Dr Sulaiman Al Jasem, Vice-President, said "The initiative aims to encourage other higher education institutes to follow the same approach in

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establishing endowed chairs that will allow the university to attract outstanding researchers and faculty members..." (as cited in Gulf News, 2010).

Finally, the UAE has to create networks with other Arab countries and the rest of the world to exchange information and experiences in the research. The UAE has the capacity to succeed in this field because it has developed greatly in the use of the internet and information technology. All universities and research centres will benefit from having an expanded network with other accredited academic institutions involved, taking with it an important UAE economy

④ Productive knowledge-based industry

Besides energy as the key area for investment, the UAE has additional innovative sectors that are now ripe for further development. These include ICTs, mining and utilities, engineering, construction, and real estate. Encouraging investment in all these sectors contributes to the diversification of economies and, and most of all, stimulates innovation. This situation must be changed because oil reserves will run out in the near future.

The 2021 vision of the UAE focuses on building a knowledge-based economy: "We want the UAE to transform its economy into a model where growth is driven by knowledge and innovation" (UAE Cabinet, 2010). The UAE has to pursue deep reform in its economic structure to lay down concrete foundations for the KS. The UNDP report (2003, p. 172) recommended two specific steps towards greater knowledge-based production in the Arab World. These are:

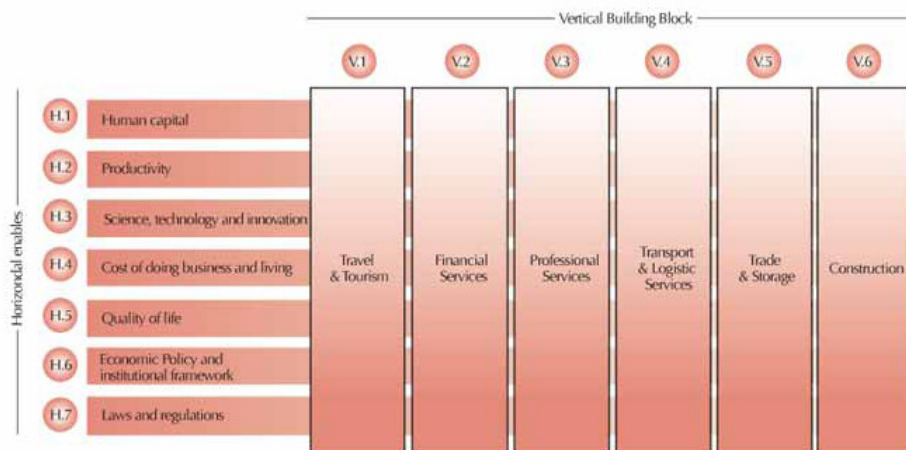
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- 1) moving quickly to the upstream or downstream ends of processing in oil and natural gas industry
- 2) investing state resources in diversifying economic structures and markets and developing renewable resources through knowledge and technological capabilities

Both Abu Dhabi and Dubai have embarked on programmes to transform their economy from one based on oil to one based on knowledge, innovation and the export of cutting-edge technologies. The Dubai Strategic Plan 2015 and the Abu Dhabi Economic Vision 2030 outline the economic visions of the UAE.

The Dubai Strategic Plan 2015 was announced on the 3rd of February, 2007. Figure 6 (Government of Dubai, 2007, p. 21) shows the vertical and horizontal combinations that the plan is based on. It is clear that Dubai no longer depends on oil as the main focus of its economy. There is a strong trend towards a knowledge-based economy.

FIGURE 6: VERTICAL BUILDING BLOCKS AND HORIZONTAL ENABLERS



Source: Team analysis

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The Abu Dhabi Economic vision 2030 aims to increase the "non-oil share of the economy from approximately 40% to more than 60% and significantly diversifying the scope of economic activity to include priority sectors" (Government of Abu Dhabi, 2008, p. 12). An example of the initiatives to diversify the economics of Abu Dhabi is the Masdar Initiative which was launched in Abu Dhabi in 2006 to become "a leader in making renewable energy a real, viable business and Abu Dhabi a global centre of excellence in the renewable energy and clean technology category" (Masdar, 2010).

The efforts of the UAE regarding innovations have been fruitful. "The UAE has managed to position itself as a leader in developing a knowledge-based economy during a short period of time" Al Nahyan (as cited in El Shammaa, 2010).

Additionally, according to Dutta, the author of the annual Global Innovation Index (GII) report, the "leading business school in Europe has named the UAE the most innovative country in the Middle East, citing its robust technology infrastructure and high-quality education system" Dutta (as cited in Cosh 2010). He explained that the UAE scored high marks in the index's technology infrastructure, investment in education, and knowledge application rankings, finishing eighth, 15th and third worldwide respectively (as cited in Cosh, 2010).

⑤ Culture of learning and innovation (Arab knowledge model)

The UNDP (2003, p. 172) outlines that the creation and innovation of an authentic, broad-minded, and enlightened Arab general knowledge model necessitates

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fundamental reforms in the societal context in Arab countries. These reforms would entail the following five actions:

i- Delivering true religion from political exploitation and respecting critical scholarship.

The UAE has a clear policy in this regard. No one is allowed to exploit Islam for personal objectives far removed from its original goal and soul. Islam is introduced in educational schools in a way that encourages forgiveness, cooperation, moderation, justice and liberality. On the other hand, scholars are restricted by government regulations and policy. Also, the Friday sermons and speeches of religious events are prepared by officials in the Ministry of Islamic Affairs and Endowments. This move should be reconsidered and given another thought because it constrains and limits the role of scholars in activating the power of Islam in building a living knowledge society, as was the case 1400 years ago.

ii- Advancing the Arabic language by undertaking serious research and linguistic reform for translating scientific terms and coining simple linguistic usages.

It goes without saying that any knowledge society needs a language to express its identity and achievements. The 1971 constitution of the UAE states that the Arabic Language is its official language. In a bid to emphasize the importance of the Arabic language as a symbol of the UAE's national identity, the government decided to authorise Arabic as the official language at all federal institutions and entities in March 2008. The move was hailed by many intellectuals in the UAE. Dr Ebtisam Al Kitbi, Professor of Political Science at the UAE University, thinks that the move will

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enhance the presence of Arab speaking people in the labour market and restore the national identity.... Al Kitbi added, "to my knowledge, there is no nation that allows an invasion of foreign languages in government institutions the way we did in the UAE. The move will correct the imbalance" (as cited in Al Baik, 2008).

iii-Reclaiming some of the myriad bright spots in the Arab cultural heritage

The rich contributions of Muslims and Arabs in all fields of knowledge have enlightened the ancient and modern worlds with thousands of inventions. Common sense tells us that for centuries following the fall of Rome, Western Europe was locked in the Dark Ages. Arab culture, however, was thriving, and had become an intellectual mecca. For example, the House of Wisdom, built in Iraq in 1004, was the most outstanding single repository of knowledge at the time. It is noteworthy that the House held four hundred thousand books at a time when the best European libraries housed, at most, several dozen. As Arabs, we have to restore credit to the Arab thinkers of the past by having modern intellectual centres. MBRF is an endeavour to revive the role of the House of Wisdom in Baghdad.

iv- Enriching, promoting and celebrating cultural diversity within Arab countries

The UAE houses expatriates who come from nearly 200 countries. This makes it a global and a multicultural hub. In this regard, the UAE is guided by the traditions and the customs of its Arabic society derived from the principles of the Islamic heritage that believes in diversity. The vision of the UAE states that "a spirit of religious tolerance will forge mutual understanding and acceptance within the country's pool of diversity" (UAE Cabinet, 2010).

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Assuredly, there are many advantages of having a diversity of cultures in the UAE. Diversity boosts creation because it brings different people with different caches of experience in contact with different problems. Another important point to illustrate is that people from different cultures have various perspectives about different issues. This difference in perspective can breathe fresh life into the various corners of life in the country.

Furthermore, cultural diversity in the UAE also means a wider range of languages spoken. This leads to more communication and understanding among the residents of the country and the outside world. Finally, having people from different cultural backgrounds enhances the chances for the citizens of the UAE to acquire new skills, experiences and knowledge. At the same time, non-citizens will have the opportunity to better know the heritage and cultures of the UAE.

It is important to notice that these different cultures live side by side, in relative harmony, because it sounds common that the people of a particular culture tend to live in their own bubble; they rarely communicate or socialise with other cultures. The UAE government should work hard to encourage all cultures to work collectively towards a harmonious society working for the advantage of the UAE and the members of these cultures.

v- Opening up to other cultures

The UAE strongly believes in the notion of opening channels of communication to the outside world, rather than being engulfed within geographical boundaries. This is

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clearly reflected in comments from officials, including, for example, what was said by Sheikh Mohammed bin Rashid Al Maktoum "throughout history, no nation has ever made progress without the ability to create, excel, and be open to others"(Gulf News, 2007). Similarly, Chairman of the General Authority for Islamic Affairs and Endowments, Dr. Hamdan Al Mazrouie, observes that "the UAE hosts workers of 203 nationalities and at the same time preserves its national identity....Despite this cultural diversity, there is no fear from openness so long as Islam acts as a real guarantor" (Khaleej Times, 2010).

III- The role of teachers in building a knowledge society

The role of teachers is pivotal in building a knowledge society in the UAE. Hargreaves (2003) argues that "teachers, more than anyone, are expected to build learning communities, create the knowledge society and develop the capacities for innovation, flexibility and commitment to change that are essential to economic prosperity" (p. 1). Hargreaves (2003) believes that teaching for a knowledge society involves developing in teachers and students deep cognitive learning, creativity and ingenuity; the ability to work in networks and teams; a commitment to ongoing professional learning; problem-solving and risk-taking strategies; and the skills to work collaboratively and cope with change. Teachers in the UAE need to provide an excellent model for students to engage them efficiently in establishing a knowledge society in their country.

To start with, teachers have to allow students to express their views objectively and freely. Students have the right to be trained to exercise their rights in expressing their

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opinions through well designed tasks and assignments. It is expected that after a period of 12 years of schooling, students will have the necessary skills to express their views logically and confidently. As a result, future generations will be able to exercise one of the most important rights guaranteed by the Constitution of the UAE. A country whose people cannot express their opinions openly is not congruent with a knowledge society.

Equally importantly, teachers need to exert enough effort to become developers along with being deliverers of education. This can be achieved through continuously pursuing professional and personal development. Also, teachers need to be effective in developing students' critical and creative thinking skills, enabling those students to become active citizens in a knowledge society.

Furthermore, teachers must instill a love of science and research in the hearts and minds of students. In practice, a teacher who teaches his\her students the basics of doing research shares in turning out a generation of skillful researchers. It has been noted that the UAE is late if not short in areas of inventions. A key reason for this shortage is that teachers themselves do not receive enough training in research methodology that can be transferred to students.

In addition, teachers should educate students about the difference between economy-based society and a knowledge-based economy. As a result, students will be aware of the importance of supporting their universities with different and necessary majors

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and specialization in order to contribute to the diversity of skills and experiences needed for a diversified knowledge based economy.

It is evident that teachers who appreciate the magnitude of living in a knowledge society aid their students in the creation of an intellectual model built on the foundations of religious tolerance and openness to the world. Meanwhile, they are proud of their religion, values, civilization and language.

Another thing, which is very important for policy makers, is that the role of teachers in building a knowledge society in the UAE is not effective because most of the teachers, like other members of the community are not fully aware of their central role in building a knowledge society in the United Arab Emirates. Hargreaves (2003) asserts that "If teachers do not understand the knowledge society, they cannot prepare their pupils for it" (p. xvii). This imposes an obligation on all leaders in all institutions and ministries to have all hands on deck to build up a comprehensible strategy for activating the role of the academic institutions in supporting teachers in being active players in the establishment of a knowledge society that contributes to human development in all respects.

If teachers are to be successful in their mission, they must side with Hargreaves (2003) who asserts that all future generations must possess a high-skill, creative and life-shaping mission - the knowledge society requires nothing less.

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Conclusion

The above observations of the capacity and willingness of the UAE to meet the requirements of establishing a knowledge society based on the five pillars adopted by the 2003 UNDP report shows us the UAE's commitment to creating a knowledge society. Despite the remarkable achievements and success in this area, however, there are many increasing efforts that need to be addressed to achieve the vision of the government in this regard.

The UAE faces many challenges in its bid to build a KS. It certainly requires government leadership and funding to overcome such challenges, but it cannot be done by the government on its own. The private sector and academic circles must also work together to turn the national vision into reality. When people find an environment that supports their desires to achieve and advance, they will do extremely well and reach heights previously thought to exist only in the imagination.

I believe that there is a need for more comprehensive research on the impact of establishing a knowledge society on the human development of the population of the UAE from all walks of life. Moreover, research on the effectiveness of building a knowledge society in improving a strategy to address the country's demographic lopsidedness in a way that strikes a balance between comprehensive development and interests of the homeland is badly needed.

In conclusion, the targeted knowledge society in the UAE relies on the quality of human capital, education, research and innovation plans as a means to advance its development. If the UAE wants to achieve its goals in building a knowledge society, it must also invest more in human capital due to the important role it plays in the knowledge-based economy.

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