Challenges and Opportunities of Education and Scientific Research in the United Arab Emirates

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Abstract

This study addressed the challenges and opportunities of education and scientific research in the United Arab Emirates. It discussed the relationship between educational outcomes, scientific research, and real-world requirements. It also highlighted the density of curricula and the accumulation of knowledge, noting that current educational curricula do not align with the demands of e-learning, which has emerged as a strong and new system in future education. The study emphasized the role of higher education and scientific research institutions in advancing and keeping pace with advanced countries. It stressed the importance of academic and research collaboration among higher education institutions, academic accreditation for programs, and the required skills for each specialization to serve both learners and the country. Regarding scientific research, the study observed a continuous decline due to reduced funding for research and decreased allocated funds by universities. It also discussed faculty members' challenges in their academic and administrative duties. The study concluded by proposing innovative solutions to address the challenges of education and scientific research in the United Arab Emirates.

Keywords: Challenges, Opportunities, Education, Scientific Research.

STUDY QUESTIONS

1. What are the challenges facing the education and scientific research sector in the United Arab Emirates?
2. What proposed solutions exist for developing the education and scientific research system in the United Arab Emirates?

STUDY METHODOLOGY

The methodology followed in this study is the analytical inductive approach. We have gathered information from primary sources, and then analyzed and applied it to the reality in the United Arab Emirates.

INTRODUCTION

Education is the cornerstone of the progress and development of nations. Research experiments in advanced countries have unequivocally demonstrated that the true beginning of a nation's progress lies in education and scientific research. The advancement of nations is measured by the development of their sciences and the performance of their students. Moreover, all nations that have progressed have done so by prioritizing the development of education and scientific research, making them central to all their programs and policies. Therefore, we must harness all our energies and resources to keep pace with this rapidly accelerating scientific and informational revolution.

It is noted that countries that do not continuously reform their educational systems and do not link their education system with training and the job market will continue to suffer on all fronts. Education is the primary channel through which the workforce passes and feeds the labor market in the society of the United Arab Emirates. The outputs of higher education are crucial on all political, economic, social, psychological, and scientific levels, to build a healthy and prosperous society that drives progress and development, nurtures the thoughts and minds of individuals, and fosters their creativity toward their work, thus contributing to the

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economy of their country. Therefore, restructuring the facilities of the Ministry of Higher Education alone will not suffice to reform the quality of education or to produce a distinguished caliber of learners. Thus, this study aims to highlight the most prominent challenges facing the education sector in the United Arab Emirates and shed light on the proposed solutions to address these challenges and move forward in the journey of development and renaissance witnessed by the country in various sectors, with education being its foundation.

CHALLENGES FACING EDUCATION AND SCIENTIFIC RESEARCH IN THE UNITED ARAB EMIRATES

Firstly: Educational Curricula

Educational curricula are the foundation upon which the entire educational process is built. Therefore, enhancing and developing curricula is one of the most significant challenges facing higher education, especially in light of the developments occurring in various fields of science and knowledge. It is essential to adapt the educational curricula to these advancements and changes. The United Arab Emirates has embarked on comprehensive development processes for all study curricula in line with the country’s vision and comprehensive strategies. The old curricula often focused solely on rote memorization and repetition, lacking in fostering various skills such as self-learning, innovation, and critical thinking, among others. Hence, these curricula need comprehensive review and development to overcome their shortcomings and foster a new generation of learners capable of actively participating in society.

Secondly: Educational Institutions

If educational curricula are the structure of the educational process, educational institutions are the link between curricula and learners. Educational institutions, particularly teachers, represent the first connection a child encounters upon entering school. For curricula to function effectively, the teaching staff, as the crucial link, must be fully qualified, extensively trained, and professional. Developed curricula alone will not suffice unless teachers are highly professional and proficient. In the Gulf Arab countries, including the United Arab Emirates, the teaching profession is often not highly esteemed due to limited prospects for economic and social advancement. Consequently, there is a lack of significant interest among potential learners, especially in joining the teaching profession in private educational institutions. Additionally, there is a higher proportion of females compared to males in the teaching profession. Many individuals enter the teaching profession due to circumstances rather than a genuine passion for it, resulting in a considerable number of untrained and unqualified teaching staff. Moreover, the limited and insufficient training courses available for teachers fail to adequately prepare them for their roles. These courses should focus on refining teachers’ scientific methods and transforming them into effective motivators for students, guiding and encouraging them toward self-learning and lifelong learning, which are central to modern education. (Heard-Bey, F. (2005)).

Thirdly: Teaching Methods and Pedagogical Approaches

The educational methods and approaches employed in most Emirates of the UAE are relatively outdated. They still heavily rely on the teacher as the primary lecturer, especially in humanities disciplines. These methods do not encourage self-learning or cooperative learning, which are considered the future and essence of education. Additionally, the educational resources in many educational institutions do not meet the required standards and fail to align with the economic, cognitive, and technological advancements in the region.

Fourthly: Gender Disparity

Despite achieving gender balance in terms of student enrollment up to the secondary level, gender disparity begins to emerge in higher education when a significant number of males drop out of education. This disparity becomes evident in university-level institutions, where the balance tilts in favor of females, constituting 61% of the female student population compared to male students. This gender gap poses challenges that need to be addressed to ensure equal opportunities for both genders in higher education.
Fifthly: Funding

The issue of resources allocated to education in the Gulf countries is less than that of their counterparts in developing countries. A significant portion of the budget allocated to the Ministry of Higher Education goes towards salaries and wages of employees rather than enhancing the educational and scientific research processes. For instance, approximately 70% of the budget in the UAE Ministry of Higher Education is allocated to teachers’ salaries, leaving only 30% for enhancing the educational process and scientific research. This funding disparity compared to advanced countries affects the infrastructure and resources available for education and research significantly.

Sixthly: Educational Globalization

Educational globalization aims to make education universally accessible or internationally disseminated in its scope or application. However, it often diverts us from fulfilling our educational and cultural roles and impedes our noble mission in education. Challenges arise from Western attempts to undermine Arab identity, aiming to dissolve cultural and educational specificities, posing a serious challenge to educational curricula and teaching staff.

Education is a vital sector that plays a fundamental role in achieving progress and prosperity in any society. The UAE is one of the countries that have shown great interest in continuous improvement and development in its educational system. The UAE focuses on building a generation of educated youth qualified to contribute effectively to societal development and address future challenges. In this article, we will review the transformations and developments in the education system in the UAE and the efforts made to achieve educational excellence. (Matsumoto, 2019)

EDUCATION HISTORY IN THE UAE

Over the centuries, education in the United Arab Emirates relied primarily on traditional education conducted through religious schools and mosques and was limited to a few classrooms and a small number of teachers. With the advent of modern times, especially after the establishment of the state in 1971, the UAE began to seek to improve its educational system and provide educational opportunities for all. (The Emirates Center for Strategic Studies and Research, 2018).

TRANSITION TO MODERN EDUCATION

To achieve a significant transformation in the education system, the United Arab Emirates has followed a comprehensive plan aimed at developing primary, secondary, and tertiary education stages. The goals and direction towards a comprehensive educational system rely on the latest technologies and modern educational methods.

EDUCATION TECHNOLOGIES IN THE UAE

The UAE has an advanced and modern educational system that seeks to provide the best educational opportunities for students at all levels. The UAE adopts modern technologies to improve the quality of education, enhance innovation, and promote personalized learning. Here are the main technologies used in education in the country:

Information and Communication Technology (ICT): Modern technology is used in classrooms and curricula to enhance the teaching process and make it more interactive and engaging. Computers, tablets, and e-learning software are used to deliver knowledge in new ways (Laila Mohebi, 2019).

Virtual Reality and Augmented Reality: VR and AR technologies are used to improve the learning experience and make it more realistic. Students can explore topics interactively and deeply using these technologies.

Distance Learning: The UAE provides distance learning programs and online education for students at various educational levels. This allows students to study and learn from anywhere, at any time and has been fully utilized during the COVID-19 pandemic (Erfurth, 2020) & (Ridge).
E-Learning Platforms: The UAE offers many e-learning platforms that help students and teachers interact and exchange knowledge easily. Platforms like "Madrasati" and "Emirates School" enhance communication between school and home and enable parents to monitor their children's academic progress.

Launch of the Digital School: The Digital School is an initiative launched by the Mohammed bin Rashid Al Maktoum Global Initiatives Foundation (MBRGI) to provide accredited digital education for students from various social, and economic backgrounds and educational levels. It targets vulnerable communities and refugees in Arab and global societies. The Digital School started its work in November 2020 as a pilot phase with 20,000 students to test systems and content, and their suitability for all targeted groups in various grade levels, and to study the students' interaction and response to the adopted curricula. The Digital School is scheduled to enroll more than one million students by 2026.

Academic Improvement and Modern Curricula: Quality education has been improved by developing curricula to be more diverse and inclusive, including science, technology, engineering, mathematics, and arts. Teaching methods have been improved and modern technology is used to make the learning process more interactive and beneficial for students.

Development of Educational Infrastructure: The UAE has paid great attention to improving the infrastructure of schools and universities, equipping them with the latest technologies and modern educational facilities to provide an inspiring and stimulating learning environment for students. Campus facilities have been improved and equipped with modern equipment and advanced laboratories to support scientific research and higher education.

Teacher Training and Development: A successful educational system cannot be achieved without focusing on the development of teachers and improving their teaching skills. The UAE provides training and development opportunities for teachers through workshops and continuous training programs aimed at improving teaching skills and educational innovation.

Focus on Teaching Life Skills: The education system in the UAE encourages the teaching of life skills to students, in addition to academic knowledge, to enhance skills such as critical thinking, problem-solving, effective communication, and leadership to empower students to deal with future challenges and opportunities.

Attention to Special Needs Education (People of Determination): The education system in the UAE is committed to providing necessary support and rehabilitation for students with special needs. Special programs have been developed to integrate these students into public schools and provide a suitable educational environment for them.

PROPOSED SOLUTIONS TO ADDRESS THE CHALLENGES OF EDUCATION AND SCIENTIFIC RESEARCH IN THE UNITED ARAB EMIRATES:

Many proposed solutions can be adopted. These solutions include measures aimed at improving the quality of education, enhancing research development, and enriching the learning experience for students and teachers. Among these solutions: (ElHajj, 2017)

Enhancing Digital Education and Distance Learning:

Enhancing technology infrastructure and providing fast and stable communications to enable effective distance learning.

Developing innovative digital learning platforms that integrate interactive lectures, educational materials, and assessment tools (Jane Hunter, 2015).

Boosting Scientific and Technological Specializations:

Providing training programs and scholarships in future scientific and technological fields such as artificial intelligence, robotics, and information technology.

Enhancing collaboration with leading global universities and research centers to develop expertise and transfer modern technologies.
Developing an Encouraging Research Environment through:

Sustainable funding for scientific research and innovation through adequate budget allocations.

Encouraging the establishment of specialized research centers in various fields to attract talented scientists and researchers. Scientific research is the flag of progress and global competitiveness, where the developmental plan in scientific research aligns with the set goals of the country and educational institutions, which in turn align with the general development plan of the country.

All governmental and non-governmental bodies need to participate in supporting the scientific research sector, whether in funding or providing laboratories and facilities, each according to its capabilities and specialization, considering these sectors as beneficiaries of research outcomes (Kay Gallagher, 2019).

Enhancing Practical and Vocational Education:

Developing educational programs focusing on practical applications and vocational skills to prepare students for the job market.

Enhancing collaboration with the private sector to provide practical training and education opportunities in real-world environments. Emphasizing innovation and creativity in curriculum development that aligns with the Gulf and international job markets, as we are creating a learned and cultured generation capable of facing all challenges in both the local and international job markets.

Encouraging Innovation and Entrepreneurship:

Supporting entrepreneurial initiatives and startups by providing funding, guidance, workspace, and facilitations for implementing these projects in reality.

Organizing competitions and events that encourage creative thinking and the development of new solutions to current challenges (Homa S. Tavangar, Becky Mladic-Morales, and Farahnaz F. Ibrahim, 2014).

Enhancing Higher Education and Attracting International Talent:

Offering scholarships to talented students from around the world to study in the UAE.

Strengthening international cooperation with leading academic universities and institutions to exchange experiences and enhance the level of education.

Developing Training Programs for Teachers and Academics:

Providing continuous professional development programs for teachers and academics to improve their teaching and research skills.

Implementing comprehensive curriculum reviews and eliminating redundancy to create an ideal space for learners to engage consistently and regularly, allowing for self-learning, critical thinking, and lifelong learning for students. It is worth mentioning the importance of preparing advanced university libraries according to the latest technological systems, which provide all scientific and technological services and are capable of attracting and encouraging students to conduct research, search for information, and access the latest and best sources through equipped educational libraries (Baehr, 2021).

Increasing focus on funding for the education sector and educational outcomes as it is the cornerstone for building an educated and aware generation.

Preserving national and cultural identity amid this educational globalization, taking what is useful from it and leaving what does not align with its Arab-Islamic identity.

Encouraging the sharing of experiences and knowledge among colleagues through workshops and conferences.

These are some of the solutions that can be adopted to overcome challenges and obstacles in the field of education and scientific research in the United Arab Emirates. Implementing these solutions requires wide-
ranging cooperation between the government, private sector, and academic institutions to ensure the achievement of positive and sustainable results.

FUTURE CHALLENGES

Despite the significant improvements in the education system in the United Arab Emirates, some challenges require addressing to achieve the desired level of educational excellence. Among these challenges: (Al Hosani and Bridi, 2022)

Technology Integration: There is a need to enhance technological integration in all aspects of education to enhance educational effectiveness and improve the student experience.

Attracting Qualified Teachers: Attention should be given to attracting qualified teachers and improving working conditions and continuous training to enhance their educational competence.

Achieving Equality in Education: Efforts should be directed towards providing equal educational opportunities for all ages and social groups, focusing on social integration.

Linking Education to the Job Market: Efforts should be directed towards providing suitable higher education for the changing needs of the job market, and stimulating innovation and entrepreneurship in society (Kay Gallagher, 2019).

CONCLUSION

The United Arab Emirates has written a success story in achieving transformation and development in the education system. The government is keen on improving the quality of education and empowering students to become qualified and creative individuals contributing to building society and the national economy. The UAE constantly works on developing its educational strategies and investing the necessary resources to achieve educational excellence and face future challenges with confidence and determination. Based on that, the study reached the following conclusions:

Teacher training is the foundation for developing educational curricula to include learning skills in the digital age.

Integration and cooperation among state institutions are essential conditions for achieving the vision of development and technological transformation of the education system.

The challenges facing the education system in the UAE vary between technological, financial, and scientific challenges.

Scientific research is the backbone and foundation of higher education institutions in the country. Therefore, employing information and using modern technologies in training and education are among the most important features of the information society. Keeping pace with artificial intelligence technologies is one of the most important challenges facing faculty members.

Administrative control over academic freedom and the freedom of expression of faculty members, in addition to canceling cooperation between all departments, and undermining the influence of faculty members on students.

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