E-LEARNING IN THE MIDDLE EAST AND NORTH AFRICA (MENA) REGION: REVIEW OF TRENDS FROM THE FIRST COMPREHENSIVE REGIONAL HANDBOOK

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Abstract

This contribution explores how e-learning can enhance learning environments for students, teachers and educational institutions in the Middle East and North Africa (MENA) region based on the first comprehensive handbook on the topic published in 2018. The 24 authors contributed to an in-depth look at practices, policies and the future development of electronic pedagogies in the Muslim-majority countries and Israel. The region has produced a wide range of pedagogical and technical responses to emerging technologies and platforms such as Learning Management Systems, MOOCs, virtual universities, and M-Learning. Gathering together statistics from the International Telecommunications Union (ITU) and World Bank reports—in addition to government white papers and policy statements—the author reviews both public and private sector efforts to promote best practices online learning, such as flipped classrooms, autonomous learning, Lifelong Learning (LLL), and peer education. Recent scholarship in e-learning in the MENA region is reviewed as well to identify gaps in the research literature, and to gauge effectiveness of current initiatives. Prospects and Barriers in the region’s developing e-learning ecosystems parallel issues in e-learning in Western countries, but education in MENA presents several unique dimensions as well: gender segregation, traditional banking model paradigms of instruction, Islamic values, censorship, and online program accreditation.

Keywords: E-learning – Middle East; computer-assisted learning; Middle East and North Africa (MENA).

1 INTRODUCTION

The term “e-learning” requires a careful definition since not only does it denote a different set of practices for different educators, it also describes a range of technologies that themselves are changing rapidly, most notably the merging of AI, sensor technology, and mobile Internet, and the eventual convergence of mobile (wifi, wireless networks, GPS, etc.) and fixed line (‘desktop’, PC, Ethernet-enabled, etc.) device operating systems. For the purposes of this paper, “electronic learning” or “e-learning” will be defined as education that occurs via electronic networks, primarily the Internet, but also including Local Area Networks (LANs) and mobile networks. This definition encompasses earlier pre-Internet styles of distance learning involving telephone consultations with mentors and public television and radio broadcast programs. E-learning evolved from these early methodologies and shares many key features with “distance learning”: for example, autonomous learners (as in non-blended e-learning) were essential in distance learning; in other words the self-motivation of the learner was paramount since instructors taught remotely, or textbooks and exercises themselves were the form of instruction.

Some educators prefer the term “educational technology” as an umbrella term to describe the use of electronic devices and communication networks in education: however, simple teaching technologies (from the Greek root techne, something that is artificially crafted) such as blackboards, pencils, and paper would be included in this broad category. Thus the term does not capture the revolutionary dimensions of modern computers and the Internet such as the abilities to transcend space, time, gender, and culture in virtual worlds. As electronic pedagogies and the use of computers and networks become normalized, however, in education, the term “e-learning” will probably be subsumed into the term “educational technology,” or disappear altogether, or new terminology will arise. In other words, all teachers internationally will be expected to use electronic teaching strategies and technology as best practices teaching in the future, and therefore e-learning should be embedded internationally into all teacher training programs.

The regional scope of the Middle East and North Africa (MENA) was chosen for this paper because of its commonplace use in international reports issued by WHO, IMF, World Bank, etc. MENA is a culturally and religiously diverse part of the world, but shares certain recognizable commonalities. The
area is Muslim-majority except for large Jewish populations in Israel, and Christians in Lebanon and Egypt. The region additionally shares other common features: most of the region was at one time part of the Roman Empire or later Islamic Caliphates; both Arabic and Perso-Arabic culture and language impacted most of the region; and most of the region consists of desert or semi-arid drylands which has resulted in similar economic and agricultural patterns.

2 METHODOLOGY

In 2018, the author and his co-editor Sihem Hamlaoui published the first comprehensive handbook of e-learning in the MENA region entitled E-learning in the Middle East and North Africa (MENA) Region (New York: Springer Nature) [1]. Initially 24 subject experts were invited by the editors to write an overview of e-learning in their home countries. All of the experts have been heavily involved in both e-learning development and research throughout their careers and most have served in consulting positions to governments and university committees. With the assistance of the editors, using the Cornell University library systems, University of Toronto libraries, as well as the Weill Cornell Medicine-Qatar Delib library, and the Qatar National Library, the authors generated a comprehensive bibliography of books, book chapters, peer-reviewed articles, reports and websites appended to each chapter. This literature search thus provides a unique overview of current areas of research and strengths and weaknesses in national e-learning development.

The discussion below summarizes the main results of the literature search and the authors’ analytical overviews of e-learning in their respective countries, using two developmental end-points: countries with highly mature e-learning ecosystems with corresponding high Human Development Indices (Israel and Qatar) and countries with developing e-learning ecosystems with low Human Development Indices (HDI). There is not a strict correlation, however, between e-learning development and HDI, or national expenditure on education as percent of GDP. In fact, some countries such as KSA spent large amounts of money on education resources without concomitant measurable increased student learning outcomes. Much more research is needed to determine what specific factors might contribute to national e-learning development in the region.

3 RESULTS

Since a full discussion of each of the MENA countries lies far beyond the scope of this paper, two sets of countries illustrating high and low e-learning ecosystem development were chosen. By ecosystem, the author means the history, current state, acceptance, policy, availability, usage patterns, accreditation, programs, and teacher training of e-learning systems in a particular country.

3.1 Selected Countries of Analysis: Israel, Qatar, Djibouti, Yemen

3.1.1 E-learning in Israel

The State of Israel is a relatively high income, high technology and research-based society despite its small geographical area, desert climate and high population density. It ranks 21st in the world in GDP per capita according to the IMF [2]. Israel is aligned with several essential factors that favor a positive e-learning environment: according to Yair, Israel boasts “a robust high-tech industry, sometimes referred to as the ‘start-up nation’ or ‘Silicon Wadi,’ with Tel Aviv ranking 5th in the global start-up ecosystem ranking for 2015 [based on “e-commerce genome” by COMPASS, https://blog.compass.co/]. Based on user statistics collected by one of the leading communication and technology companies in Israel (Bezeq) and published in 2016, there are 6.4 million Internet users in Israel, and the average accessible bandwidth is 65 Mbps (megabits per second, a common measure of data transfer speed), an increase of 30% compared to the year before. Cloud storage of information and data is practiced by 60% of users. Compared with OECD countries, the cost of Internet surfing at 30 Mb rate in Israel ranks among the cheapest globally (24 USD)” [3]. In addition, Israel has developed a high quality primary and secondary education system, with 13.0 mean years of education [4].

The “Digital Israel” initiative launched in 2013 had several distinct goals, including greater government transparency and accessibility, reduction of social disparities and to promote innovation. An EdTech sector is now thriving in the Israeli private sector, with the eTeacher Group, BrainPOP, Matific, and CodeMonkey companies providing serious gaming, programming, and mathematics apps for the commercial market.
Despite a notable ‘digital divide’ between Israeli Jews and less wealthy Palestinian Arabs, technology use and e-learning is widespread in all Israeli schools since national economic policy supports technology development, which in turn requires high level training in communications technologies, computer programming, and advanced technical support. Baya’a et al. found high confidence in and acceptance of technology integration among elementary and middle school Arab teachers in Israeli schools [5].

Israeli universities also support a robust research environment, particularly in the areas of the economic dimensions and effectiveness of e-learning, a significant gap in e-learning research in the MENA region. For example, Cohen and Nachmias carried out a cost-effectiveness analysis of web-supported academic instruction at Tel Aviv University [6]. Most importantly, unlike most other MENA nations, several Israeli universities and institutes offer Bachelor’s and Master’s degree level programs in learning technologies, learning systems, and electronic pedagogies.

In summary, Israel is already on the road to leveraging its technology training programs, e-learning resources and government and private sector support mechanisms to achieve a high tech, highly educated and technologically literate knowledge-based economy.

3.1.2 E-learning in Qatar

The State of Qatar located on the Arabian Peninsula bordering Saudi Arabia has several parallels with the State of Israel: both are geographically small, high income and high HDI countries with an arid climate, which translates to water scarcity, the use of desalination for fresh water, and an insignificant agricultural sector. Qatar has few natural resources except for oil and natural gas, which entirely dominate economic production. Similar to Israel, Qatar has embarked on an intense effort at economic diversification to create a technology-based knowledge economy. The Qatar National Vision 2030, a national developmental framework with targeted goals and quantitative and qualitative metrics, lays out the strategic plan for Qatar in the next decade [7]. This plan includes further development of the high-speed internet optic fibre network, full integration of a Learning Management System in all Qatari schools, and technology training short course for government employees.

The growth of online learning approaches in higher education, particularly at the national university Qatar University and the group of American, British, and French branch campuses called “Education City” in Doha has been phenomenal, given that Qatar in 2000 had almost no presence on the Internet [8]. E-learning in Qatar is poised to provide anytime / anywhere educational resources to full time employees, home-based caregivers (particularly females), and the considerable numbers of Qataris who are now retiring early and who would like to continue Lifelong Learning. Several serious challenges however are impacting further e-learning development. As the country prepares for the FIFA World Cup in 2022, Internet cables are sometimes broken or service is degraded in the accelerated construction boom as new companies and a growing population compete for internet bandwidth. Although Qatar has an extremely high cell phone penetration rate and a high internet penetration rate, research has shown that youth in the country primarily surf the net for entertainment and communication purposes, not for education.

Also, government accreditation of online programs is almost non-existent and e-learning training degrees are not currently available at any institution of higher learning. Qatar University’s College of Pharmacy, however, offers a part-time PhD program with online components for those students who are currently in the workplace.

3.1.3 E-learning in Djibouti

Djibouti sits on the horn of Africa near Somalia and Eritrea and serves as a port and refuelling station for the busy Red Sea and Indian Ocean shipping lanes. It is also near a cluster of undersea telecommunication cables: Djibouti, however, has not yet leveraged this asset into a telecommunications hub as an engine for growth. In 2015, the internet penetration rate of the entire country was only 2.57%. The U.S. maintains its only permanent African military base, Camp Lemonnier (a Naval Expeditionary Base) in the country. Most of the population lives in Djibouti City. Since the 19th century, the country has been under the influence of the French first as the country of French Somaliland and later as an overseas territory of France. The country gained independence in 1977.

Under the French system, only elites attended school, mostly organized on French models. The government has made substantial investment in the public school system, however, in the last 2 decades and primary schoolchildren enrolment rose from 31.1% in 2000 to 66.3% in 2015 [9].
However, educational services provision for students outside the main capital is difficult due to transportation problems and lack of internet services. According to Salhi and Hamlaoui, “for a middle-income country, the level of Internet development in Djibouti is very poor, worse than the average development in some low-income countries south of the Sahara” [10]. Notably, most of the e-learning initiatives in Djibouti have been funded by external organizations and the government of Djibouti does not possess a coherent national strategy for integrating technology in the classroom. The University of Djibouti launched an e-Campus platform in 2014. In 2006, the AVU/African Development Bank project began in several African countries including Djibouti. ICT development in the schools was a major focus of this program. Other programs have also been funded by foreign partners – for example, the E-Learning Center Balbala (a digital library), was funded by the German Shipowners’ Association (VDR) through the SOS Children’s Village International Program. The use of foreign aid money may be one factor in the underdeveloped e-learning sector in Djibouti; underdevelopment of communication networks is difficult explain when considering Djibouti’s potential unprecedented international telecommunications access. Foreign aid programs, although often well intentioned, are often short lived and monies are frequently the source of misuse and corruption. Relying on foreign expertise prevents the development of local human capacity. Also, in various indices, Djibouti has been ranked as an undesirable destination for Foreign Direct Investment.

3.1.4 E-learning in Yemen

The country of Yemen, one of the poorest nations in the Middle East, is currently suffering a devastating civil war and subsequent military intervention by the Kingdom of Saudi Arabia after Houthi rebels seized the capital of Sana’a in 2014. Previously, Yemen was composed of two separate states, one with a Marxist-Leninist political system. The country’s economy is based on agriculture, subsistence and nomadic animal grazing, and small scale industries. Almost 25% of Yemen’s current GDP is generated through Khat production, a stimulant plant drug, and the Khat plant requires enormous water resources. Thus with rapidly increasing population and dry climate, Yemen faces severe water and electricity shortages. Widescale sea water desalination of the Red Sea and Gulf of Aden will soon be necessary to provide fresh domestic and agricultural water [11]. Khat addiction has been blamed on a number of social ills including school-leaving, low educational attainment, and low economic productivity which all impact education and the labor market [12]. Although Yemen has some oil and gas reserves, civil disruption has prevented large scale exploitation of these resources. The population is scattered with remote populations in mountainous regions. A large proportion of the country is facing severe famine, recent fighting has claimed close to 60,000 dead and wounded, and Yemen has suffered the largest cholera outbreak in modern history with 1.2 million cases recorded [13].

Yemen instituted internet service in 1996, but by 2000, the internet penetration rate was still under .1% for the entire country. Yemen’s telecommunications infrastructure is monopolized by the government owned corporation TeleYemen and thus there is only one Internet Service Provider (ISP). State owned telecommunications monopolies are a serious problem in the Middle East, and conflicts of interest by ruling families, and the lack of a competition results in inefficiency, and high and non-transparent service fees. As Shormani and AlSohbani [14] as well as Aldowah et al. [15] have reported, the central Yemeni government has developed since 2000 nation-wide plans for reforming each level of education, including Basic Education (2003-2015), and a national strategy for Higher Education (2006-2010). Also a National Strategy for Technical Education and Vocational Training was implemented from 2005-2014. Each of these strategies emphasized the integration of technology and e-learning into the curricula. The first steps in these reforms were internet infrastructure and platform development and foundational training courses such as the International Computer Driving Licence (ICDL) program.

Obviously the serious issues facing Yemen during the current military conflict, including internal displacement, famine, destruction of infrastructure and water and food insecurity, have placed all educational issues on the back burner and provision of even basic educational services has become difficult. Without a stable supply of electricity and regular internet availability, electronic pedagogies are simply not viable. However, as the country stabilizes, e-learning could become a strong force for rebuilding society, the labor market, and educational systems. The many free educational resources on the Internet, for example, such as Wikipedia, YouTube, Khan Academy, MOOCs, etc. can compensate for the lack of books in Yemeni schools and universities. In addition, there are no female universities in Yemen and educational opportunities for women are lacking due to conservative
attitudes about separation of the genders – e-learning can provide education for women who cannot attend formal schooling in a physical classroom [16].

4 CONCLUSIONS

As revealed in the discussion above, the Middle East and North Africa (MENA) region – although often treated by international political and economic organizations and agencies as a monolithic geopolitical entity – is on closer inspection extremely diverse with respect to economic, cultural, linguistic, social, and religious status and development. Communications network maturity, cost, access, and availability obviously strongly correlate with e-learning development and practices throughout the region since either the Internet or a mobile network are a *sine qua non* for e-learning’s very existence. This fact was not obvious during the first implementation stages of e-learning in schools and universities in the early 1990s in developed nations, since e-learning technologies were widely believed to deliver extremely low cost mass educational opportunities, particularly suited to developing nations. The facts that developed countries already possessed mature communications networks, and high incomes allowing for personal student ownership of devices, were not taken into account. Factors such as language (i.e. non-Roman alphabets, script directionality, etc.), culture, platform development, student access to both electronic devices and home and school Internet were not fully integrated into visions and plans for e-learning ecosystems suitable for regions such as MENA or Africa. The selected illustrative countries of Israel, Qatar, Djibouti and Yemen discussed in this paper reveal the wide range of e-learning national development and ecosystems in the MENA region.

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REFERENCES


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