

Review Article: Effectiveness of Web-Based Learning in the Middle East and North Africa (MENA) Region

Alan S. Weber

Pre-medical Program

Weill Cornell Medical College in Qatar (WCMC-Q)

Doha, Qatar

alw2010@qatar-med.cornell.edu

Abstract- From 2000-2010, eLearning and Web-based learning expanded rapidly in over half of Middle East and North Africa (MENA) countries. Attracted by lower educational dissemination costs, the anytime / anywhere philosophy, and the desire to upgrade existing educational programs to meet best practices and international standards, countries such as Israel, Saudi Arabia, United Arab Emirates (UAE) and Qatar have made substantial investments in the eLearning arena. This contribution surveys published peer-reviewed qualitative and quantitative literature on eLearning, web-based learning, and blended learning from 2000-2010 using standard search strategies, then provides general qualitative analysis of the statistics to provide an overview of both eLearning activities in the region as well as scholarship about eLearning. The primary objective is to locate studies in which effectiveness of eLearning was a specific focus of the research or discussion.

Keywords- effectiveness, eLearning, Middle East and North Africa (MENA), Web-based learning

I. INTRODUCTION

From 2000–2010, eLearning expanded rapidly in approximately half of Middle East and North Africa (MENA) countries. Attracted by lower educational dissemination costs, the anytime / anywhere philosophy,

and the desire to upgrade existing educational programs to meet best practices and international standards, countries such as Israel, Saudi Arabia, UAE and Qatar have made substantial investments in the eLearning arena. eLearning and ICT development in the region has been surveyed by Burkhardt, Ahmed, Weber, and Laaser [1].

An obvious and key question, of course, involves eLearning effectiveness: did the eLearning project, software, training, learning object, or program described in a scholarly article meet its objectives and learning outcomes? In short, did eLearning increase learning? This is a simple, yet vexed question since widely agreed upon eLearning outcome standards are currently not available. In addition, the majority of published studies on eLearning in the region are qualitative in nature, due to the expense, time, and complexity of designing and implementing quantitative studies of eLearning effectiveness.

II. METHODS

Full-text or abstracts of eLearning books, articles, monographs, and M.A. and doctoral theses originating in the MENA region were retrieved using the Education Resources Information Center (ERIC), OCLC First Search, Web of Knowledge (Thomson Reuters), and Google Scholar Advanced using key words of individual MENA country names + “E-learning” and “Web

based learning.” Additional keywords “online” and “distance education” led to overlapping results to the above searches and also retrieved items not relevant to this study, such as television and videotape based education (“correspondence courses”). In terms of accuracy of information and screening of results, ERIC was the most useful. Google Scholar retrieved many more results, however with a large proportion of noise and with serious meta-data issues, requiring lengthy manual culling. A more comprehensive search would have also followed up on bibliographical references in retrieved articles, and this strategy was first attempted, then abandoned due to the discovery of articles in difficult to obtain journals in foreign languages unknown to the author.

The World Bank definition of the non-standardized term “MENA” was used comprising the countries of Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, West Bank and Gaza (Palestine), and Yemen [2]. Although basically delineating regions where Islam is the dominant religion and which encompasses nations and peoples who were formerly part of an Islamic empire or Caliphate, the many varying definitions of this region suffer from several defects: culture and dialects vary greatly in different regions, and economic conditions in northern African nations are substantially different from the oil rich Arabian Gulf countries (GCC). Also, the exclusion of countries like Turkey and Pakistan from the World Bank definition is highly problematic from a research standpoint since they share many characteristics of other MENA nations.

Languages searched were English, Arabic, French, and German; most of the information on eLearning is published in

English, and articles in Hebrew, Farsi, Urdu, and Turkish, etc. (languages unknown to the author) were not included in the study. This study could not determine the number of articles in languages outside of the targeted languages of English, Arabic, French, and German.

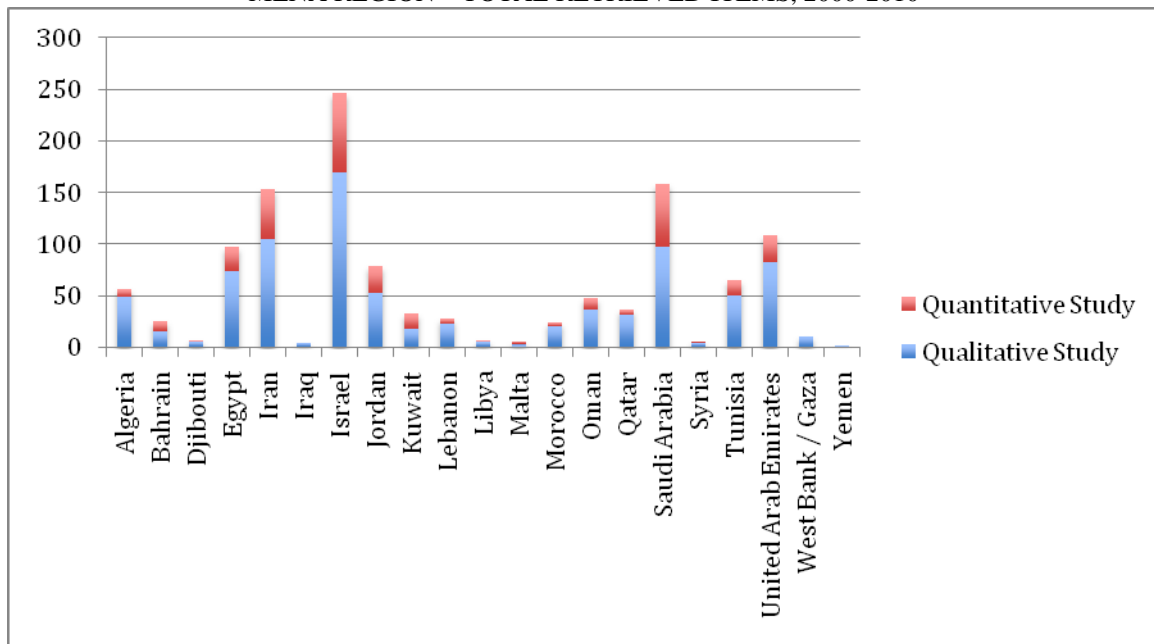
Categories used to sort retrieved articles were: Qualitative (QL) versus Quantitative (QN) studies, and among these studies, was the eLearning topic (initiative, software, approach, philosophy, etc.) under discussion found to be effective (E), not effective (NE), inconclusive (I) or not part of the aim of the study (NP). Effectiveness is defined as “having produced a measurable positive learning outcome.” Effectiveness was stringently defined: some formalized procedure, such as questionnaire or focus groups or experimental design was required, and in addition, if effectiveness was not an explicit goal of the study, it was categorized as NP. Anecdotal evidence, such as “students were able to use the system easily” as well as the simple demonstration of the functionality of a system or object were both not admitted as evidence of effectiveness.

III. RESULTS

The two main results of the study are summarized in Tables I and II below.

Not surprisingly, total amount of eLearning scholarship roughly equates to a country’s rank in e-readiness indices since robust internet infrastructure is necessary for eLearning to be a satisfying learning modality for users; however, knowledge production and scholarship in eLearning depends on other factors including national and individual university expectations for faculty publication and available faculty resources (funding, protected time) for research activity.

TABLE I
MENA REGION – TOTAL RETRIEVED ITEMS, 2000-2010



The chart indicates clearly that the majority of studies of eLearning in MENA region are qualitative in nature. Typical qualitative topics include description and analysis of eLearning policy, overviews of the current situation in a specific country, growth and advancement of eLearning in particular countries, and description of a newly developed eLearning activity, software product, or system. Countries like Israel, Iran and United Arab Emirates with more mature eLearning capabilities produce

more quantitative, data-driven, and experimentally (interventionist) studies, presumably because they have had working eLearning systems since the late 1990s / early 2000s and therefore possess more historical data and more active users are available to use as experimental subjects. Countries with recently introduced eLearning systems tend to produce qualitative studies concerned with implementation or describing novel systems and their dissemination.

TABLE II
MENA REGION STUDIES 2000-2010 SPECIFICALLY FOCUSED ON ELEARNING EFFECTIVENESS

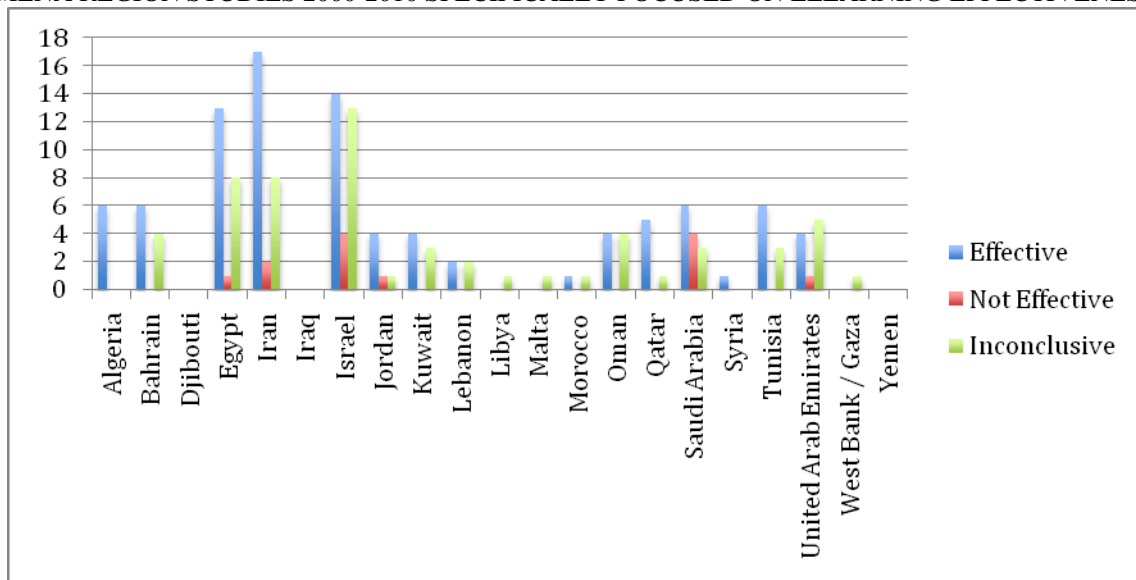


Chart 2 demonstrates that studies specifically designed to demonstrate effectiveness form only a small to moderate percentage of total studies, for example from a high of 22.6% of total Egyptian studies of eLearning, to a low of 7.6% of Jordanian studies and 0.0% in Djibouti and Yemen. As is true in other fields, strictly negative results are not frequently published, and ineffective results of post-tests, surveys, or questionnaires are often subsumed into 'inconclusive' results – in other words, some aspects of eLearning were validated in the study and proven effective, while others were shown to be neutral or ineffective when compared to other modalities and / or learning objectives.

Interestingly, two clusters of scholarship in Israel and Saudi Arabia have demonstrated negative effects or failures of successful implementation of eLearning strategies. Davidovitz at College of Judea and Samaria, Israel found that superficial adoption of technology was occurring rather than pedagogical change [3]. Other researchers, such as Caspi, are investigating psycho-social and cognitive aspects of the web-based learning environment. In a 2005 study, Caspi et al., using a Big Five factor personality analysis found web-based environment learners to be more neurotic and introverted than traditional classroom users [4].

In the case of Saudi Arabia, Al Jarf and others have revealed several barriers to successful eLearning adoption in Saudi Arabia resulting in some failed initiatives, such as high cost of broadband internet, shortage of teacher training in technology, lack of online course accreditation, and serious cultural factors such as the Arabian Gulf region's traditional gender-segregated educational system and general trepidation about the transformational social power of the web [5].

IV. CONCLUSION

Effectiveness of web-based learning in the MENA region, despite serious ITC

infrastructural issues, lack of Arabic language learning objects, and technological illiteracy, has been shown to be effective in a small number of qualitative and quantitative research studies from 2000-2010, specifically in the area of increasing student motivation for learning, and producing higher learner outcomes. In regions with mature and widespread eLearning systems, demonstrations of non-effectiveness have appeared in the published literature. This survey review reveals the countries where eLearning and eLearning research is taking place in MENA region. As eLearning matures in the region, more effectiveness studies will undoubtedly be generated as MENA countries move beyond the 'panacea' (eLearning will solve all educational problems) and 'band-wagon' (everyone else is doing it) approaches familiar in the early adoption strategies of other countries.

REFERENCES

- [1] Grey E. Burkhart, and Susan Older. (2003). *The Information Revolution in the Middle East and North Africa*. Santa Monica: Rand; W. Laaser. (2006). "Virtual universities for African and Arab countries." *Turkish Online Journal of Distance Education*, 7 (4); Allam Ahmed. (2007). "Technological transformation and sustainability in the MENA region." In *Science, Technology and Sustainability in the Middle East and North Africa*. Brighton: The Freeman Center; A.S. Weber. (2010). *Web-Based Learning in Qatar and the GCC States*. Occasional Paper 5. Doha: Center for International and Regional Studies, Georgetown University School of Foreign Service in Qatar.
- [2] World Bank. (2010). *Middle East and North Africa*. Retrieved on 15 November, 2010. <http://web.worldbank.org>.
- [3] Nitza Davidovitch. (2007). "Pedagogy and technology – which has the upper hand? Lessons from technological implementation at the College of Judea and Samaria, Israel." *On the Horizon* 15 (3): 177 – 189.
- [4] Avner Caspi, Eran Chajuta, and Kelly Saporta. (2008). "Participation in class and in online discussions: Gender differences." *Computers & Education* 50 (3): 718-724.
- [5] Reima Al-Jarf. (2007). EIntegration Challenges for Rectors & Deans in Higher Education Institutions in Saudi Arabia. *CATE Conference Proceedings 2007*. Canada: Acta Press.