Students' Acceptance of Incorporating Emerging Communication Technologies in Higher Education in Kuwait

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Abstract—Never has a revolution affected all aspects of humanity as the communication revolution during the past two decades. This revolution, with all its advances and utilities, swept the world thus becoming an integral part of our lives, hence giving way to emerging applications at the social, economic, political, and educational levels. More specifically, such applications have changed the delivery system through which learning is acquired by students. Interaction with educators, accessibility to content, and creative delivery options are but a few facets of the new learning experience now being offered through the use of technology in the educational field. With different success rates, third world countries have tried to pace themselves with use of educational technology in advanced parts of the world. One such country is the small rich-oil state of Kuwait which has tried to adopt the e-educational model, however, an evaluation of such trial is yet to be done. This study aimed to fill the void of research conducted around that topic. The study explored students' acceptance of incorporating communication technologies in higher education in Kuwait. Students' responses to survey questions presented an overview of the e-learning experience in this country, and drew a framework through which implications and suggestions for future research were discussed to better serve the advancement of e-education in developing countries.

Keywords—Communication technologies, E-learning, Kuwait, Social media

I. INTRODUCTION

NEW communication technologies have become the backbone of educational development. The application of these technologies in the learning process alters the way students interact with educators, as well as the method with which content is accessed and delivered. With the potential that electronic learning (e-learning) provides for the educational experience, massive opportunities are availed for students, teachers, schools and technology developers. The notion of e-learning yields millions of results in search engines [1]. It refers to the inclusion of varied communication technologies in education in order to facilitate the learning process [2]. E-learning can also be defined as the incorporation of online and offline technological tools [3].In parallel terms, e-learning is further defined as education supported by communication advances for purposes of enhancement and development [4].

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Benefits of e-learning include numerous potential advantages for the educational community. Overall, electronic education provides a flexible self-paced form of learning that is no longer constrained by time, cost or spatial proximity [5]. With the advent of e-learning, the educational community has become networked online and offline in a new hybrid space.

More specifically, using synchronous and asynchronous electronic connectivity, students are able to benefit immensely from various e-learning tools. Additionally, e-learning allows for simultaneous participation in varied modes of interactivity regarding assessments, lessons, course material, and assignments. This can be achieved through the use of new media technologies. The communication revolution has provided a range of technologies that encompasses an umbrella of hardware, software, as well as web-based activities.

For example, smart phones, tablets, netbooks, laptops as well as personal computers are all utilized in e-learning. Moreover, literature interchangeably uses terms like social networks and social media (SM) to refer to new media applications such as Twitter, Facebook, YouTube, blogs, podcasts and wikis. These applications are used socially by individuals around the world in a collaborative effort in many forms of interaction. Depending on the type and purpose of research, different studies use varied classifications of social media. Yet, social media can be generally defined as web-based tools which are used in virtual communities to share information [6].

Furthermore, virtual learning environments (VLEs) like Moodle and Blackboard are also used in electronic education. VLEs are standardized online-based applications that provide a repository of information and facilitate the online educational exchange between students and instructors [7]. Other educational applications (ed apps) have been developed by worldwide corporations to better serve the international community with regards to the learning process. Such applications are mostly introduced for mobile devices and include iTunesU, which allows for the free download of courses from leading universities around the world. The application also provides access to consolidated course material in the form of text and videos. In order to limit the scope of research, this study focused on the three e-learning tools mentioned above; SM, VLEs and Ed Apps.

II. E-LEARNING IN KUWAIT

Kuwait is a small developing country in the Middle East with a positive infrastructure forecast in the adoption of communication technologies in the educational sector [8]. Yet, public higher education in Kuwait has not been prevalent in such adoption efforts. Unlike the situation in private educational institutions, the mere availability and use of e-learning technology in public schooling is low [5].

Additionally, according to an orphan study that was conducted on the topic of investigation, students from one of six prominent private universities in Kuwait and one public college expressed initial willingness to consider usage of e-learning tools [5]. However, no research has been conducted to examine the situation in Kuwait's only public university, which was established in 1966 and caters to 33% of the total university student population in the country [9]. Therefore, it is not with absolute certainty that students welcome the radical change in educational delivery.

Furthermore, government reports give an optimistic overview of elearning efforts. In 2001, Kuwait University (KU) launched the Distance Education Center with an extension for smart classrooms which have been reportedly used in the academic year 2007/2008 by 2512 students in 97 courses [9]. Hence, the conflicting data on usage of educational technology in this developing country merits examination of the inclusion of communication applications in the learning process within Kuwait university. This is especially true given that the issue of measuring students' acceptance of the combination of the aforementioned e-learning tools is relatively untouched. No other research has examined the issue from this angle. Considering the paucity in research along with the ever-changing usage pattern of educational technology, this study has attempted to compile and present useful data that can compensate for the lack of information.

III. CONCEPTUAL FRAMEWORK

This research transpires from the Technology Acceptance Model (TAM) which was introduced by Davids in 1989 as an adaptation of social psychology theory of reasoned action [10]. TAM posits that two specific elements determine users' intentions with regards to technology usage. The first element is perceived usefulness as measured by the degree to which an individual believes technology will enhance performance; while the second element relates to perceived ease of use as measured by the extent to which a user believes technology will be effortless [11].

TAM also postulates that external variables, such as culture, can affect the ability of the model to predict user attitude toward technology, which in turn should reflect actual usage. For example, technological constraints put forth by cultural traditions or governments in developing countries can affect actual use regardless of attitude toward technology and intentions of usage [12]. This is exceptionally interesting to examine in a country such as Kuwait, where culture plays a huge role in people's lives. When applying TAM to e-learning, it is evident how this conceptual framework can be helpful for this kind of investigation as it may yield interesting results. Numerous studies over the years have used this model to measure technology acceptance for teachers as well as students [12].

IV. METHODOLOGY

The empirical focus of this research was to explore students' acceptance of incorporating emerging communication technologies in education at Kuwait University. This particular institution was chosen due to the fact that it is the country's only public university. Additionally, no previous research has examined KU with regards to this issue. Furthermore, KU is the oldest and biggest higher education institution in the Arabian Gulf region. Also, due to the importance of all e-learning tools mentioned previously, this study examined each tool in order to obtain a better understanding of the topic.

With regards to research design, a quantitative self-administered questionnaire was constructed with a total of 34 questions. The instrument was designed to build on previous research conducted by various studies that used the TAM framework, while remaining unique and true to the purpose of the study, the types of e-learning tools examined, and the cultural context of Kuwait. The instrument included two types of scales: Likert and Nominal, with an introduction preceding the questions identifying the purpose of the research, the social utility of the study, as well as explanations of the e-learning tools used. Response options for the Likert scale ranged from strongly agree = 1 to strongly disagree = 5.

Following the introduction was a battery of questions related to demographic information. The respondents were then presented with questions pertaining to social and educational usage of SM, VLEs and ed apps. This was important in order for respondents to distinguish between each type of use. The following questions were designed to inquire about TAM elements: perceived usefulness (questions 11-16), perceived ease of use (questions 17-22), attitude toward technology (questions 23-28), and usage intention (questions 29-34). Two questions were dedicated to each element, with each question being presented three times for each type of e-learning tool; SM (questions 11, 14, 17, 20, 23, 26, 29 and 32), VLEs (questions 12, 15, 18, 21, 24, 27, 30 and 33), and ed apps (questions 13, 16, 19, 22, 25, 28, 31 and 34).

For instance, with regards to usefulness, respondents were asked if the specified educational tool enhanced school performance and whether it was useful for school work. As for ease of use, participants were asked if using the specified educational tool for school work was easy and whether it required a lot of mental effort. In referring to attitude, the sample was asked if using the specified educational tool was unpleasant and whether they thought such usage was a good idea.

With regards to the fourth element of TAM, intention, respondents were asked if they would avoid future classes

using the specified educational tool and whether they intended to use it more frequently for school work. Survey data was gathered from a nationally representative sample of Kuwait University students between the ages of 17-34. The questionnaires were distributed randomly to undergraduate students in four KU campuses: Alkhaldeya, Alshuwaikh, Aljabreya and Kaifan. This was done during the period of November 1- December 1, 2011. Completion of the survey took approximately 10 minutes.

V. RESULTS AND DISCUSSION

A total of 270 respondents completed a self-administered questionnaire which was constructed to serve the purpose of the study. A number of questionnaires (19) were unusable. Most of the unusable questionnaires were from male students. This maybe due to the fact that females are usually more attentive and responsive when approached for help in filling questionnaires, in addition to them being more careful of their absence rates when it comes to class attendance. With regard to the demographic profile of the sample, 75 male students accounted for 29.8% of total participants, while 176 female students represented the larger share of the sample (70.1%). This difference in gender representation was similar to the actual breakdown of the student population at KU with 68% of students being females [9].

The majority of participants (95.2%) were Kuwaitis between the ages of 17-24 (96.4%) while 3.2% of the sample was between 25-34 years of age. Moreover, 16.7 % reported that they have been studying at KU for 1-2 years, with a majority (62.9%) reporting 3-4 years, and 15.5% indicating 5-6 years. The remaining 3.5% have been at KU for more than 6 years. In terms of laptop or PC ownership, Most of the sample (95.6%) answered yes with a mere 4.4% on the other end. This reflects the importance of using personal computers nowadays as part of essential accessories. However, when asked about netbook or tablet ownership, an aggregation of 43%of respondents indicated that they did not own such devices with the majority (56.6%) stating otherwise. This could be due to the fact that students' interests in new technologies maybe restricted by monetary issues.

Furthermore, the participants were asked to report the frequency of their social and educational use of different e-learning tools. The main concern for the study was assessing the educational usage of these tools, however in order to ensure students' understanding of different usage purposes, the social use question was added. Facebook was reported as the highest social medium used for education at 76.5% for the combined answer categories (daily and often) followed by podcasting with 67.4%, Twitter (48.8%), YouTube (36.3%), educational applications (20.3%), Wikis (18.7%), Virtual Learning Environments (15.6%), and finally blogs (10%).

With regards to overall usefulness, the majority of the sample indicated agreement for SM use at 69.5%, and an aggregation of 42.2% for educational apps , as well as 41.1% for VLEs. As for overall ease of use, 71.95% of respondents

indicated agreement for SM with 49.1% for ed apps, and 35.9% for VLEs. It is interesting to note here that students seem to find VLEs somewhat hard to use, yet the following results show willingness for future usage. When responding to attitude questions, participants reported a positive attitude toward using social media for school work at 69.5%, with an accumulation of 50.55% for ed apps, and 46.35% for VLEs. Lastly, the sample reported an intention to use elearning tools in the future at 60.2% for SM, 49.7% for educational apps, and 48.3% for VLEs. These results are inline with previously reported findings of another study indicating that students in Kuwait are willing to use e-learning [5].

VI. RECOMMENDATIONS FOR FUTURE RESEARCH

When considering the implications of this study, it is notable that this investigation effort starts a new line of inquiry with regards to students' use of technology within the learning process. Hence, the study contributes to the international examination of such vital topic. Also, the findings present a direction for enlightenment and understanding to the government of Kuwait in order to for it to better evaluate e-learning dissemination and development. Moreover, this research effort adds to the body of available literature pertaining to the middle East region, especially when considering the application of TAM as a conceptual framework guiding the study.

In addition, this study lends a better understanding to technology vendors and developers who seek to augment and advance the e-learning experience worldwide. The research also provides a valuable insight on the degree to which new technologies are being utilized, and it serves as a foundation for future research. The latter can add to the existing body of literature by examining the topic of investigation from the perspective of instructors. This invites scholars to explore the fertile area of e-learning with all its potential and tools from a fresh angle. Moreover, further examinations can look into the context of language and its relationship to possible hesitation on the part of students in using e-learning material. Such research can present a more comprehensive overview of e-learning development in different countries, especially when considering the prevalence of the English language. Moreover, qualitative examinations can be conducted to enrich available literature worldwide.

VII. CONCLUSION

Communication technologies are changing all faces of life as we know it. Education stands as no exception in the face of new media revolution. The learning experience has never been this interactive and enjoyable. Yet, many students hesitate to use technology when it comes to their grades and assessments. Therefore, it was important to assess and evaluate the potential progression of e-learning in this part of the world. The purpose of this study was to investigate students' acceptance of the inclusion of communication technologies in public higher education in Kuwait. Three types of e-learning tools were

examined: social media, virtual learning environments, and educational mobile applications. The study drew upon the Technology Acceptance Model as a conceptual framework. A total of 251 students were surveyed using a self-administered questionnaire, which was randomly distributed in four campuses of Kuwait University.

The sample was composed of mostly Kuwaiti students with females representing almost two thirds of respondents, thus, reflecting their actual percentage within the student body at KU. The main findings reflect that students in Kuwait do accept the use of technology in education to a plausible extent. This finding is supported by other studies conducted about e-learning in Kuwait. Future research should investigate the issue of e-learning further especially from the perspective of instructors in order to provide a more comprehensive overview of the learning experience in Kuwait.

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