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E-Learning in higher education – opportunities & challenges for Dubai

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E-Learning in Higher Education –
Opportunities & Challenges for Dubai

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E-Learning is becoming a popular delivery method across various universities and colleges in Dubai as the region is experiencing a rapid growth of e-Learning in higher education. Adequate infrastructure, changes in demographic profile, globalization, government initiatives, outsourcing and increasing demand for IT knowledge based jobs are the major factors responsible for e-Learning growth in higher education in Dubai. To highlight the increasing demand for e-Learning based courses in higher education in the region, a study was launched using online questionnaire to measure the satisfaction levels of e-Learners in higher education. From this survey, e-Learners have shown in deed a very high level of understanding concerning the potential and value of e-Learning. Respondents in the study provided a wide variety of information about their viewpoint on course material, faculty's support, grading system and their level of satisfaction of e-Learning practices. It is anticipated that the findings of this study will offer opportunities to improve policy and practice of e-Learning in higher education in the region so as to solidify its position as an e-learning hub in the gulf region.

CONTEXT

With its state-of-the-art digital infrastructure, Dubai has set the stage for rapid advances in e-Learning (not to mention e-business and e-government). Bi-annual "Education without Borders" conferences have been organized in Dubai since 2001. This conference highlights the benefits of broadening the educational base of the country.

As part of commitment to the research and education community in the UAE as a whole, the country's Advanced Network for Research and Education, ANABUT, plays a role in the research and scientific development of the region, and contributes to the international knowledge-base economy currently being pursued by government as part of its announced Vision 2021. This network is a dedicated advanced network which acts as a Wide Area Network (WAN) connecting numerous public and private universities, colleges, schools and other learning and research institutions in the UAE, as well as their international counterparts. ANABUT enables effective collaboration and communication between students, researchers and management. Another governmental project is the e-TQM College (Electronic Total Quality Management), which was launched in September 2002 in Dubai by the local government with the aim of providing world-class e-Learning programs to communities as well as to public and private sector employees.

The purpose of this study therefore is to:

• Investigate the different levels of satisfaction among e-learners in higher education in Dubai.

• To discuss opportunities & challenges of e-Learning in higher education in Dubai.

• To offer suggestions for improving the e-Learning environment for students in higher education in Dubai.

Universities efforts in implementing online education programs are also significant. Serious efforts have been made by various universities in Dubai in recent years to train faculties for online education. The Hamdan Bin Mohammed e-University is the first online institution in Dubai to be licensed and to receive accreditation for its programs by the Ministry of Higher Education and Scientific Research in the UAE.

Many of the providers of higher education across Dubai now offer some degree of e-Learning in their course content. The Learning Management Systems course of American University of Dubai (AUD) for example contains course modules that can be accessed by students remotely, at the same time providing them with a virtual work experience, while the Emirates Academy of Hospitality Management was one of the first hospitality business schools in the region to offer its students e-Learning courses to

supplement their classroom instruction. Zayed University and the Higher Colleges of Technology have also held a series of semi-annual one-day workshops on e-Learning over the past several years in Dubai, regularly drawing some 200 participants. The UAE's national university (UAEU), by far the largest university in the region, has also been making significant strides in the adoption and implementation of online learning. The number of active blackboard users jumped from about 1200 in fall 2002 to about 28000 in 2012.

Industry Involvement:

Experts from IBM, Microsoft and Polycot and other technology companies operating within Dubai contribute insights from industrial perspectives on every important technology event organised by higher education providers in the country. Similarly, The Discovery Centre, which is a joint venture between INTEL and KUSTAR (Khalifa University of Science, Technology and Research), is an example of industry working very closely with universities in Dubai and other Emirates to make e-Learning more effective in education. The courses offered by this centre are designed to help the Dubai community to understand the role of technology in the 21st Century and the way it influences how people live and work.

Edutech Middle East, an international learning solutions provider and strategic partner of Blackboard in the Middle East, launched the Arabic-enabled version of Blackboard Academic Suite, which integrates Blackboard's widely-accepted applications for higher education institutions. The bundle of programs is expected to create a major impact and enhance the overall learning process in the region's universities as they provide advanced teaching tools, allow users to share educational content and build a learning community among others. With an Arabic user interface, students and teachers from the Middle East region can easily adopt the technology and utilize it effectively to produce better results. The new Arabic version allows users to view all features and tools in the Learning, Community and Content systems from right to left in line with Arabic writing orientation. The Arabic language pack can be selected at the system, course and user level, providing flexibility to all users to choose their preferred language.

Dubai has established an excellent and diversified system of higher education in a very short period of time. Educational opportunities in Dubai have blossomed since the establishment of the federation when only a tiny minority of its urban population had access to formal education (Dukmak, 2010). Higher education institutions across the country are making strides in utilizing electronic technologies that enhances administrative, teaching and student experience in e-Learning (Motteram and Forrester, 2005).

E-Learning education in Dubai, no doubt, has revolutionised conventional teaching techniques in favour of equipping students with smart IT tools. This process has broadened schools teaching and learning base alongside traditional face-to-face classroom learning with students' benefiting from accelerated learning (West, *et, al.*, 2006).

After the dotcom boom, e-Learning was the next big thing in higher education with experts predicting that the future was online; Dubai has increasingly aimed at becoming the foremost centre for e-Learning in the Arab gulf region. E-learning is believed to be the fastest growing sub-sector of the $2.3 trillion USD global education market with the market for online higher education expected to grow to $69 billion USD by 2015 (Hezel Associates, 2005).

E-Learning as conceptual tool

The definition of e-learning is diverse and conceptually difficult because it means many things. In this discussion however, the authors define e-Learning in higher education as a specific mode to study a course or program of study where students rarely attend face-to-face for on-campus access to educational facilities because they study online. E-Learning is therefore a term for all types of technology based learning, where technology is used to support the learning process. This process of learning is rapidly becoming a worldwide education trend as it allows global competitiveness to flourish (Schrum, 1998).

E-Learning is a shift in teaching and learning and the rapid development in modern technology has spread the belief that education can be transmitted from the classroom and books to the electronic world with little adaptation (Zhang and Nunamaker, 2003; Laurillard, 1993). This method of teaching provides teachers with the tools to encourage students to expand their horizons through access to the internet and digital technology. The process gives learners the opportunity to interact and engage each other and sharing learning experiences. Here, we can apply Wenger's (1998) social learning theory to what transpires in virtual learning environments. Through that space, communities are created and are able to establish and construct their identity as communities of learners (CoL) (Vygotsky 1978; Engestrom 1987)

Higher education providers in Dubai use blackboard, Moodle, LMS (Learning Management System) and Web CT to provide e-Learning. These e-Learning support systems allow students to access online courses with their faculty and fellow students sitting in any part of the world (Tait, 1995). The online courses offered by universities are accessible through these above mentioned e-Learning systems; doing activities in small groups, tak-

ing the help of the faculty to answer student's questions or doubts from the study material. These are designed to offer a complete solution for any-where/anytime learning. Course description is presented to the students in an interactive manner, with different learning styles with the use of audio, video and visual graphics. Students can download PDF files within the courses; exercises & assignments are also given for student's practice. From the researchers' experience of learning and teaching online courses, the fol-lowing are the few benefits of e-Learning: (a) Ease of access to informa-tion (McDowell, 2002). Students with computer skills are able to navigate the system to find information for their learning (b) with e-learning the idea of rescheduling courses is virtually non existent (c) Shy students can ask questions. This is important because in any thriving e-learning environment dialogue is essential (McConnell, 1994). The psychology here is that by get-ting involved participants are better engaged in the learning process (Webb, *et. al.* 2004; Daniels, 2001) (d) Students' are able to learn at their own pace as missed lessons can be revisited (Stacey *et. al.*, 2004). (e) The system mo-tivates students to participate in learning (Ronteltap & Eurelings, 2002). Since all activities are asynchronous, students submit their work digitally. This saves them time and effort to meet deadlines.

There are also benefits of e-Learning for faculty, these are (a) ability to supervise students from a distance (Salmon, 2001) (b) enabling of quality education for increasing number of students (Collis, 1998) (c) reporting fea-tures shows the progress and grades for all students (Macdonald, 2001); (d) potential for re-use of content (e) tracking students' progress and easy administration (Goodfellow, 2001) (f) facilitates the management of student records and (g) faculties ability to use tools like text chat, audio and video conferencing, file sharing, work together with course students on a shared power-point presentation, present information on electronic whiteboard, browse the web etc. (Hill, 1999)

WHAT IS ALREADY KNOWN?

E-Learning Satisfaction

The World Wide Web has offered opportunities to promote e-learning with considerable impact on the 'distribution of content, learning tasks, and assignments in training and distance education (Howland & Moore, 2002). It is therefore not a coincidence that many Higher Education institutions have adopted e-learning model in the delivery of teaching and learning as a logical next step in educational pedagogy of the future (AL-Fadhli, 2008). Its potential prospects may have led Blustain *et al* (1999) to predict future

disappearance of face-to-face teaching and learning. The literature on influences of online teaching exist (Selinger, 2004) just as studies on differences in the manner in which people learn (Jin, 2002). Online or e-learning has also focused on learner motivation and e-learning design (Keller & Suzuki, 2004). Also grounded in e-learning is the concept of self-learning in the belief that student learning is more effective when it occurs within the context of realistic experience and if learners understand the reasons for learning (Tam, 2000). In Fang's (2007) study on what Singaporean polytechnic students find useful, enjoyable and effective in their e-learning experience, the study found that "Younger Singaporeans who had been exposed to widespread use of computers in school, at home and in society did enjoy Cyber Culture among other activities." Similarly in Al- Fadhli's (2008) study Kuwaiti students found "E-learning to be better than the traditional way of teaching" and that "E-learning is more enjoyable compared to the traditional method."

The introduction of Web 2.0 (the social web) makes it possible for learners to use platforms such as social media, blogs, whiteboard, blackboard, moodle and other forms of interactive media to exchange views, listen and observe teaching and interact with teachers from far away locations. This requires a skilled generations of learners who will be able to cope with changing learning technology (Kidd, 2013; Chapman, 2010). Policy discourses in Dubai perceive the country as aiming to reach technologically savvy economy. This will require appropriate modes of education and training which some experts see as the fastest and most effective route to achieve change (MacBeath 2012)

Positioning e-Learning in Higher Education in Dubai

The traditional teaching delivery system in Dubai is a classroom setting with an instructor giving a lecture and students listening and writing notes. This system is however under pressure with the introduction of technology-based learning tools culminating in e-learning. The result of the changing pattern is a shift in many institutions of higher learning wanting to adopt e-learning as a logical step in their delivery system. In other words, technology-based education is beginning to impact the way in which higher education facilities function in Dubai.

Despite the rapid rise of hyper-media e-learning is still not utilised in some schools in Dubai. This may be due to technology seating uncomfortably with strict cultural and social policy or teachers being mindful of state reprisals in case things go wrong in its usage (Watson 2001: 251). Arguably, Dubai is a liberal State compared to other Arab States but holds firm to its cultural and religious policies. Despite this position the country needs to

find grounds in its engagement with learning technologies to achieve its objective; this requires 'playing with learning tools' and 'mastering the art' to become a leader in digital learning within the UAE region. Some researchers, for example, Elango *et. al.* (2008) have argued that Saudi Arabia [which is a more stricter country] dominates in academic e-learning in the region with its large student population, while the UAE (of which Dubai is a part) leads in business e-learning services.

Within the Education Framework, Dubai universities and colleges have a mandate beyond simply providing higher education. Included in their role is research, provision of holistic education, neutrality, developing tomorrow's leaders, cultivating a breath of learning. In order for higher education to survive therefore, they have to remain true to their existing purposes while adjusting to meet the needs of today's students.

There are a good number of studies which address various issues related to e-Learning and its advantages & disadvantages (see for example Kidd, 2010; Hrastinski, 2009; Palmer and Holt, 2009). E-learning concept has been around for decades and is one of the most significant recent developments in the information systems industry (Wang, 2003). E-learning has been viewed as synonymous with web-based learning (WBL), Internet-based training (IBT), advanced distributed learning (ADL), web-based instruction (WBI), online learning (OL) and open/flexible learning (OFL) (Khan, 2001). University students are becoming more diverse and demand for e-Learning based courses is increasing (Papp, 2000 & Volery; Lord, 2000). E-learning discourses suggest that students like to use e-Learning if it facilitates their learning and allows them to learn anytime and anywhere in their own way (Palmer and Holt, 2009; Kerr, *et al.*, 2006).

The review of literature on e-Learning reveals that online courses target a different segment of student population i.e. those willing to learn but for some reason are unable to attend and remain in traditional face-to-face learning environments (Mangan, 2001; Thomas, 2001). These studies reveal that five out of six online students were found to be employed and would be unable to attend traditional classes. Few academicians observed that online courses were more interactive in nature than traditional ones (Mangan, 2001; Rosenbaum, 2001) because of its interactive nature and built-in mechanisms that ensures participation. Carl's (1991) views about positive aspects of e-Learning add to this understanding. He argues that e-courses can be monitored more easily than the traditional classrooms. Later studies (Govindasamy, 2002) talks about seven e-Learning quality benchmarks i.e. institutional support, course development, teaching and learning, course structure, student support, faculty support, evaluation and assessment supports as the many benefits e-learning contributes to lifelong learning.

Carr (1999) mentioned that the lack of ICT (Information and Communication Technology) skills is one of the barriers in e-Learning training. This appears to be a problem in many of the Emirate states. We are reminded of Hamid's (2002) thinking that technical skills could cause frustration to e-Learning students due to the unconventional e-Learning environment and isolation from others. Therefore, e-learners should be ICT savvy. Research conducted by Yum, Kember and Siaw (2001) observed that part-time students like e-Learning students, often find it hard to find time for their studies due to their existing commitments to work, family and other social activities. E-Learning may also not be suitable for certain groups of learners, especially science students who need extensive physical science laboratory experiments (Vernon, 2002; Bourne, Harris & Mayadas, 2005). Few researchers e.g. Ghadah and Magalhaes (2008) concluded from their research studies that e-Learning is difficult to practice for those instructors who are familiar with the traditional way of classroom teaching. This will obviously require re-orienting instructors who want to teach online courses.

E-Learning teaching environment is relatively new and its technologies are developing and changing rapidly (Calvert, 2001). Strauss (2003) sees transition into e-Learning as rather difficult as it involves conversion of physical teaching materials into e-Learning materials which takes time to complete. Levy (2003) also mentioned that many instructors are not exposed to the necessary software, and do not want to change their teaching styles, and as a result, instructors need e-Learning training before transitioning. As there are so many courseware available in the market, Sambrook (2003) argued that it is not easy for e-learners to choose a suitable courseware that comes with relevant content and adequate levels. Notwithstanding these challenges, it is obvious that e-learning is proving to be a new direction in teaching and learning in higher education especially in countries such as Dubai. If Blustain et al's (1999) prediction that traditional residential-based model of delivery where students attending classes at prearranged times and locations will disappear in the near future is true, then it behoves Dubai to systematically respond to tomorrow's needs.

RESEARCH DESIGN & METHODOLOGY

The research design in this study was based on quantitative case study. Online survey questionnaires were posted in a virtual environment targeted at 5390 students' of e-Learning in Dubai. The researchers were conscious that some respondents outside the targeted zone may respond as well. These classes of respondents were treated as deviant cases (Seawright and Gerring, 2008).

Out of the total targeted, 1510 responded to the online questionnaire about e-Learning. Their distribution includes seven hundred and fifteen (715) males and seven hundred and ninety five females (795). The respondents came from mainstream business, IT, media and international studies.

All respondents have once participated in e-learning in a Dubai university. According to secondary figures given by the Knowledge and Human Development Authority (KHDA), there are 38098 students who are studying in 53 higher education institutes in Dubai.

Four hypotheses were tested in the study as follows:

Hypothesis 1: There is no significant difference between the satisfaction level among undergraduate and postgraduate e-learners.

In Dubai, e-learning is a relatively new trend in education in general especially in higher education in particular. Students who use the system face challenges of having (basic) skills of dealing with computers and Internet technologies; undertaking tests and submitting assignments online; interacting with lecturers and students via the Web and making use of skills in self-directed learning approaches. All these challenges will impact on student's success in relying or using e-learning as a preferred mode of study. Researchers' assumption therefore provides a platform to test that thinking in Dubai.

Hypothesis 2: There is no significant difference between the satisfaction level of employed and unemployed e-learners.

The literature on Just-in-Time Learning (JIT) is not specific to Dubai. It is generally "linked to three other notable sub-trends: a move toward the virtual workplace, the growth of knowledge capital, and the increasing rate of change'' (Brandenburg and Ellinger, 2003). It is based on principles of e-learning in knowledge-based economies and associated concepts of intellectual capital and innovation which our study context aspires to but it is not clear at this stage whether any significant differences exist between employed and unemployed e-learners

Hypothesis 3: There is no significant difference between the satisfaction level of federal or government university e-learners & a private university e-learner.

The rationale for the above hypotheses is that "technology in higher education can significantly improve student learning when fully aligned to the teaching aims and fully embedded within a module," (Sharpe *et al.,* 2006; Turney *et. al*., 2009). It also can enhance opportunities for access and learning to student's off-campus (Biggs, 2003). Other studies e.g. Rodríguez et. al. (2012) and Kvavik *et. al.* (2004) however says that e-learning "does little to improve learning on the part of the student." Saunders and Klemming (2003) also doubt if the learning method can lead to a 'strategic learning approach to meet specific course objectives'. Yet, current literature say e-learning and for that matter technology can greatly improve the engagement of students during learning which 'represents a fruitful avenue to help design education for current and future systems' (Istance & Kools, 2013; Sanders, 2006; Maier and Warren, 2000). Hypothesis 3 therefore offers opportunity to test satisfaction levels of federal or government university e-learners and private university e-learners in Dubai.

Hypothesis 4: There is no significant difference between the satisfaction level of a male and a female e-learner.

One study at University of Kuwait found not much disparity in satisfaction level between genders (AL-Fadhli, 2008). Researchers in the current study are however not privy to similar studies in Dubai but suspect there may or may not be differences between male and female e-learners. This hypothesis will therefore help the researchers in this study to locate gender barriers and 'promises' in the use of e-learning (Keengwe, *et. al*., 2008).

Ten (10) factors were identified to determine the satisfaction level of e-learners (see table 1 below) or how much satisfied e-learners of higher education are in Dubai. Respondents were asked to evaluate each of the 10 factors across a 4 point Likert scale (highly satisfied, satisfied, dissatisfied, and highly dissatisfied) (see Appendix below). In addition to other questions, respondents were also asked about their age, gender, employment (employed or unemployed), type of higher education (undergraduate or postgraduate) and the name of university or college. Chi Square Test was applied to the data to determine whether gender, type of higher education institute, employment status or type of course (Undergraduate or Postgraduate) was associated with the 10 factors of satisfaction level of e-learners.

Table 1

Factors to determine the satisfaction level of e-learners

| |
|---|
| 1. E-learning course content and structure |
| 2. Web usage & online interaction |
| 3. Effectiveness of information technology infrastructure |
| 4. Ease of on-campus internet access & support of technical staff |
| 5. University support of e-Learning activities |
| 6. Instructor's attitude towards interactive learning & teaching via e-Learning technologies |
| 7. Instructor's teaching style & Faculty support |
| 8. Evaluation of e-Learning system |
| 9. Evaluation & assessment of grades |
| 10. University's library resources & e-libraries |

RESEARCH FINDINGS

The following table and graph shows the results of the online survey:

Null hypothesis 1: There is no significant difference between the satisfaction level among undergraduate and postgraduate e-learners.

Table 2A
E-Learning Satisfaction Level Among Undergraduates and Postgraduates

	Highly satisfied	Satisfied	Dissatisfied	Highly dissatisfied
Undergraduate e-learners	186	248	213	373
Post graduate e-learners	167	147	121	55
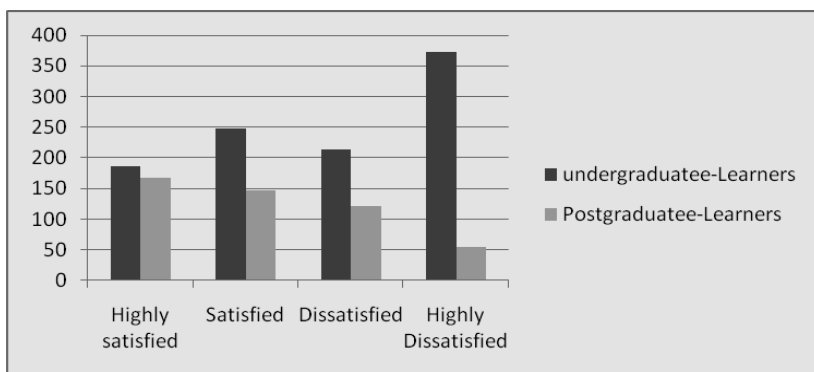
Figure 1. Graph Showing E-Learning Satisfaction Level Among Undergraduates and Postgraduate Students.

Table 2B
Chi Square Test Values E-Learning Satisfaction Level Among Undergraduates and Postgraduates

	Highly satisfied	Satisfied	Dissatisfied	Highly dissatisfied	Total
Undergraduate e-Learners observed	186	248	213	373	1020
Undergraduate e-Learners expected	238.45	266.82	225.62	289.11	
$(O-E)^2/E$	11.54	1.33	0.71	24.34	37.91
Postgraduate e-Learners observed	167	147	121	55	490
Postgraduate e-Learners expected	114.55	128.18	108.38	138.89	
$(O-E)^2/E$	24.02	2.76	1.47	50.67	78.92
Total	353	395	334	428	1510

Chi Square   116.83
D.F. = 3

Interpretation of chi square test results:

Null hypothesis 1: Tested the assumption that there is no significant difference in the satisfaction level of undergraduate and postgraduate e-learners in Dubai's higher education institutes. As indicated in both the graphic and tabular parts, since our calculated value of chi square = 116.83 which is greater than table value of 7.82, we reject the null hypothesis at the 0.05 level. In brief, the test proves that there is a significant difference between the satisfaction level of the undergraduate and postgraduate e-learners in Dubai.

Reasons for the dissatisfaction of undergraduate e-learners in Dubai as opposed to postgraduate students may be complex but lessons from elsewhere (Sharpe *et. al.*, 2006) on undergraduate experiences in e-learning shows that some undergraduate students may not be versed in a range of e-learning tools. For instance, 78% of students in a Canadian institution survey had not used e-portfolio before and needed to see examples and hear about its value before they were convinced. Issues of confidence in undergraduate students ability to cope with life, learning and technology; the capacity to network with others through a variety of communication channels; highly effective time management skills; and most crucially, the skill to integrate and balance learning with work, leisure and family commitments were found by Creanor *et al* (2006: 9) to demotivate undergraduate e-learners. Other studies (O'Leary and Cai, 2004: 9) also reported that undergraduate students whose first language was not English were more dissatisfied. This situation may be understood in Dubai especially with the proliferation of Western educational institutions sprawling across the region whose medium of instruction and education is English as against Arabic, the indigenous and official language in Dubai. This is similar to what Al- Fadhli (2008: 422) found in his study where student e-learners in Kuwait specifically mentioned English and adaptation difficulties as a challenge in e-learning. Technical reasons such as access to course websites could also demotivate learners (ibid).

Null hypothesis 2: There is no significant difference between the satisfaction level of employed and unemployed e-learners.

Table 3A
Satisfaction Level Between Employed and Unemployed E-Learners

	Highly satisfied	Satisfied	Dissatisfied	Highly dissatisfied
Employed e-learners	391	257	159	38
Unemployed e-learners	112	132	234	187
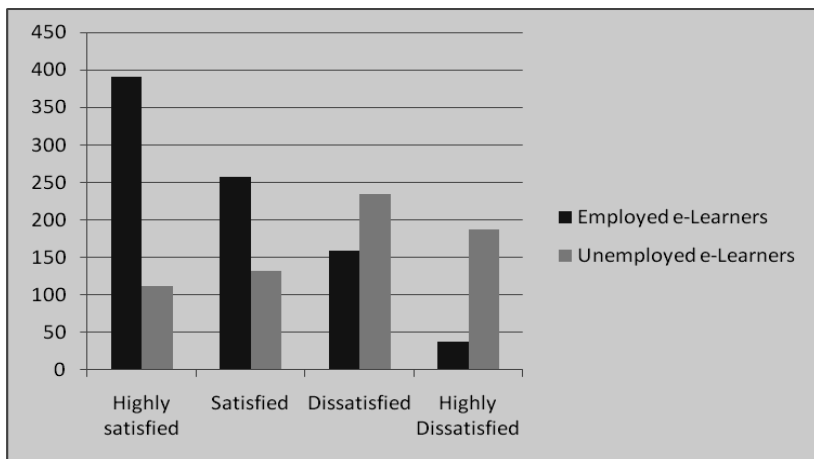
Figure 2. Graph showing Satisfaction Level between employed and unemployed E-learners.

Table 3B
Chi Square Test Values of Satisfaction Level Between Employed
and Unemployed E-learners

	Highly satisfied	Satisfied	Dissatisfied	Highly dissatisfied	Total
Employed e-Learners observed	391	257	159	38	845
Employed e-Learners expected	281.48	217.69	219.92	125.91	
$(O-E)^2/E$	42.61	7.10	16.88	61.38	127.96
Unemployed e-Learners observed	112	132	234	187	665
Unemployed e-Learners expected	221.52	171.31	173.08	99.09	
$(O-E)^2/E$	54.15	9.02	21.44	77.99	162.60
Total	503	389	393	225	1510

Chi Square   290.57
D.F. = 3

Interpretation of chi square test results:

Null hypothesis 2: Tested the assumption that there is no significant difference in the satisfaction level of employed and unemployed e-learners in Dubai's higher education institutes. As indicated in both the graphic and tabular parts, since our calculated value of chi square = 290.57 which is greater than table value of 7.82, we reject the null hypothesis at the 0.05 level. In brief, the test proves that there is a significant difference between the satisfaction level of the employed and unemployed e-learners in Dubai.

In Dubai it is difficult to talk about descent employment without qualification; acquisition of qualifications is therefore not an option but a necessary condition to gain or remain in employment. In today's labour market fierce competition has led to greater importance and demand for highly developed skills and competences to meet organizations and community expectations. To do so require responding to new opportunities offered by learning technology including those offered by web 2.0 systems. Lessons from the European Commission Agenda for New Skills and Jobs (2011) aimed at equipping unemployed people with skills including web 2.0 tools is aimed at self-employment and is a good example of current thinking to address challenges in the unemployment sector. For the unemployed their own personal circumstances, abilities and knowledge as novices in e-learning and the use of web tools can be challenging and frustrating.

Acquiring appropriate key competences within the Dubai Government Technology Acquisition Framework implies digital competence i.e. Confident and critical use of Information Communication Technology for work, leisure and communication underpinned by basic skills in the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks through the Internet, safe and critical use of ICT for work and communication purposes, use of computers for search, evaluation, saving, production, presentation and exchange of information, as well as communication and cooperation within on-line groups (European Commission, 2010).

The literature on e-learning among unemployed people talks about their satisfaction other than dissatisfaction of e-learning (see for example Arh, et. al 2012; Elango, et. al., 2008). Although it is not clear from the data reasons offered by those who claimed dissatisfaction, Phipps and Merisotis' (1999) statement that 'though e-learning has many advantages, dropout rates have been very high when compared with traditional class-room' offers some understanding (alongside other factors outlined above) on why unemployed e-learners may be dissatisfied.

Null hypothesis 3: There is no significant difference between the satisfaction level of Federal or Government University's e-learner and a private university's e-learner.

Table 4A

Showing Significant Difference Between the Satisfaction Level of Federal or Government University's E-learner and a Private University's E-learner

	Highly satisfied	Satisfied	Dissatisfied	Highly dissatisfied
Government or federal universities' e-learners	159	211	134	79
Private universities' e-learners	152	195	289	291
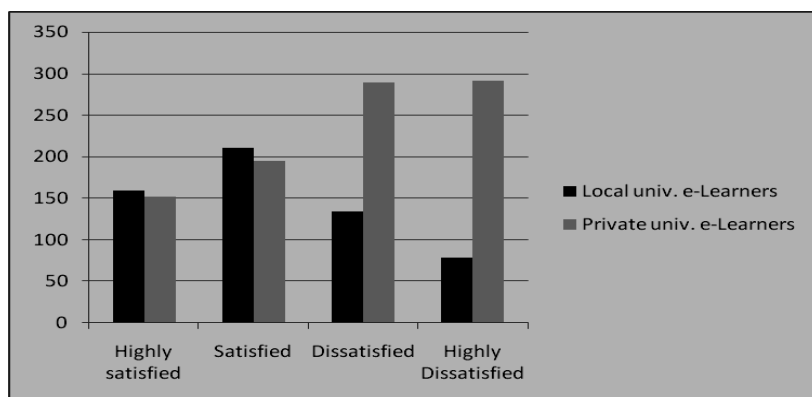
Figure 3. Graph representation showing significant difference between the satisfaction level of Federal or Government University's e-learner and a private university's e-learner.

Table 4B

Showing Chi Square Test Values of Significant Difference Between the Satisfaction Level of
Federal or Government University's E-learner and a Private University's E-learner

	Highly satisfied	Satisfied	Dissatisfied	Highly dissatisfied	Total
Federal University e-Learners observed	159	211	134	79	583
Federal University e-Learners expected	120.07	156.75	163.32	142.85	
$(O-E)^2/E$	12.62	18.78	5.26	28.54	65.20
Private university e-Learners observed	152	195	289	291	927
Private university e-Learners expected	190.93	249.25	259.68	227.15	
$(O-E)^2/E$	7.94	11.81	3.31	17.95	41.00
Total	311	406	423	370	1510

Chi Square   106.20
D.F. = 3

Interpretation of chi square test results:

Null hypothesis 3: Tested the assumption that there is no significant difference in the satisfaction level of e-learners pursuing their higher education in Dubai's Federal or government and private universities. As indicated in both the graphic and tabular parts, since our calculated value of chi square = 106.20 which is greater than table value of 7.82, we reject the null hypothesis at the 0.05 level. In brief, the test proves that there is a significant difference between the satisfaction level of e-learners studying in Dubai's Federal or Government University and an e-Learner studying in a private university in Dubai.

With Higher Education paving the way for the emergence of virtual education (Knight, 2002), Arab student population have began using various technologies to communicate, exchange ideas and share knowledge and information. This requires reforms in the higher education sector (private and public institutions). After all, quality assurance has implications for e-learning (Anderson, 2004). This means that a well resourced public institution which has access to financial and physical resources which a counterpart private institution may not be privy to may have huge consequences for their e-learners who are unlikely to benefit from quality e-learning as their well resourced cohorts. This disparity in resources may be one factor among many others. More so, e-learning being a collaboration between the 'learner' and 'provider' (Ehlers, 2004) where the provider ensures system quality

(DeLone & McLean, 2004); Information quality (Seddon, 1997) and Service quality (Heath, Boykin & Webster, 2002).

Student's readiness for e-learning has been talked about in academic literature (see for example Boyd, 2004). Similarly, student collaboration in e-learning (Cortez *et al*, 2009), e-learning styles (Brown *et. al*.,, 2005), Group work in e-learning (Johnson and Johnson, 1975), student feedback (Stickel & Trimmer, 1994); If these skills are lacking in poorly resourced institutions with little man/womanpower, e-learners are likely to be highly dissatisfied especially when they compare their knowledge and skills level with those in well resourced public institutions. A key challenge however is the paucity of systematic evaluative studies of web-based learning environments in Dubai (Sheard & Markham, 2005: 353). Had this been available and on a more regular basis some of e-learners emerging challenges would be arrested and addressed.

Null hypothesis 4: There is no significant difference between the satisfaction level of a male and a female e-learner.

Table 5A
Showing Significant Difference Between the Satisfaction Level
of a Male and a Female E-learner

	Highly satisfied	Satisfied	Dissatisfied	Highly dissatisfied
Male e-learners	258	269	113	75
Female e-learners	237	221	156	181
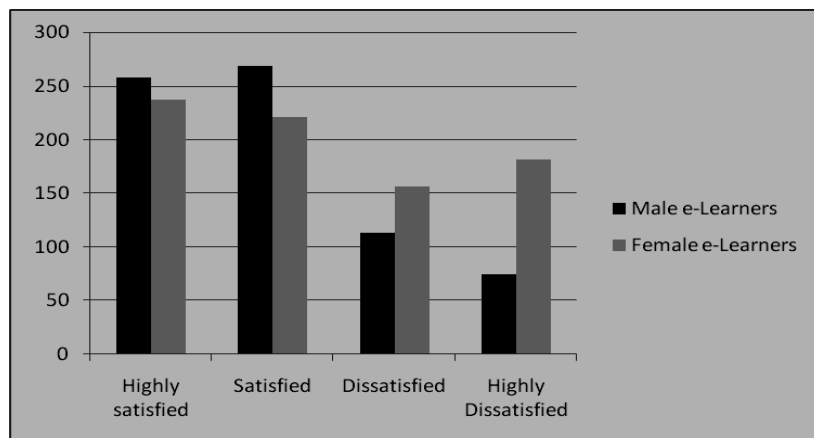
Figure 4. Graph representation of difference between the satisfaction level of a male and a female e-learner.

Table 5B
Showing Chi Square Test Values of Differences Between the Satisfaction
Level of a Male and a Female E-learner

	Highly satisfied	Satisfied	Dissatisfied	Highly dissatisfied	Total
Male e-Learners observed	258	269	113	75	715
Male e-Learners expected	234.39	232.02	127.37	121.22	
$(O-E)^2/E$	2.38	5.89	1.62	17.62	27.52
Female e-Learners observed	237	221	156	181	795
Female e-Learners expected	260.61	257.98	141.63	134.78	
$(O-E)^2/E$	2.14	5.30	1.46	15.85	24.75
Total	495	490	269	256	1510

Chi Square   52.27
D.F. = 3

Interpretation of chi square test results:

Null hypothesis 4: Tested the assumption that there is no significant difference in the satisfaction level of male and female e-learners in Dubai's higher education institutes. As indicated in both the graphic and tabular parts, since our calculated value of chi square = 52.27 which is greater than table value of 7.82, we reject the null hypothesis at the 0.05 level. In brief, the test proves that there is a significant difference between the satisfaction level of male and female e-learner studying in Dubai's higher education institutes.

Chorng-Shyong and Jung-Yu's (2006) study on gender differences and perceptions on e-learning in Taiwan suggest that 'women were more strongly influenced by perceptions of computer self-efficacy and ease of use'. It is true that socio-cultural differences exist between Taiwanese women and females in Dubai but for purposes of analysis the results from the latter setting is similar to Al-Fadhli's (2008) study on *student perception on e-learning in Arab society* which found that computer competency is not a significant

factor among females. So, why are female e-learners highly dissatisfied with e-learning in Dubai? The fact that researches have found that 'males are more experienced with and more positive about computers than females' (see for example Durndell & Thomson, 1997; Whitely, 1997) does not explain the differences. Rather, we can make extrapolations from cultural elements that influence attitudes towards e-learning, which Al-Fadhli (2008) talked about in his work. It is important to remind readers that Al-Fadhli's research was done in a culturally dominant Arab society. Cultural and social values in Dubai, like other countries of the Middle East, have codes of interaction and communication for females. This factor according to Al-Fadhli results in a lack of interaction, a lack of confidence in communication, and a lack of opportunity to meet and exchange ideas with members of the opposite gender (P. 426). This implies that what are of interest to female e-learners in Dubai are opportunities to 'physically' interact with male e-learners to break their shyness and improve their communication skills (ibid). Since Al-Fadhli's study was done pre-introduction of Web 2.0 tools, the new system offers opportunities for female e-learners to break their cultural monotony, which imposes restrictions on their ability to appreciate e-learning technology as a way forward into the future. With the use of face book and various interactive platforms it is possible to bring down perceived and unperceived learning barriers among females in Dubai.

It is also possible that some female e-learners in Dubai may display computer anxiety as found in studies elsewhere (see Durndell & Hagg, 2002) but if female e-learners perceive usefulness in this learning system defined as the degree to which a person believes that using a particular technology would enhance performance (Davis, 1989), then their own computer self-efficacy can bring about the required positive change and outcomes (Chau, 2001).

CONCLUSION AND RECOMMENDATIONS

Despite experts encouraging policy practitioners on the deployment of new technologies as a key part of their future pedagogy (Kidd, 2013), applying new learning technologies to student learning has been approached with caution possibly for political, social and cultural reasons. Though the evidence in this study poses implications for practice, its cautious implementation can be understood if juxtaposed against discourses and various narratives on recent Arab spring revolts which started on December 18, 2010. In that context, Somekh could be right in saying that 'learning technology has failed to penetrate the forces of socio-cultural reproduction built into the institutional structures of schools' (p. 114) for the simple reasons of what the world witnessed during the Arab spring revolts. If this is applicable

to Dubai, then, there is a dichotomy in what policy makers in this region perceive to be useful and what e-learners who are likely to be mainly young people will also perceive to be useful to their own development. Weighing the different positions and perspectives against national policy goals, it is possible to argue that e-learning innovations in Dubai require a careful re-think about regulatory frameworks at organizational and policy levels as first proposed by Somekh (2007: 2). Notwithstanding, further insights can be drawn from Ljubojevic and Laurillard (2011) that those who ensure that learning technology is made the centre of learning in the region should first understand 'why the approach will be useful'. Within the growing international interest in professional learning, leadership is required in making e-learning possible (Brown *et al.* 2001).

In retrospect, e-learning is a state of transition from a traditional classroom face to face teaching model to one where technology plays an integral role. To investigate the different levels of satisfaction among e-learners in higher education institutes in Dubai was one of the objectives of this study. This research study, in line with its objectives, specified 10 factors that can help higher education institutes in the country to improve the e-Learning environment for students in higher education in Dubai. For purposes of this research, e-learners were categorised according to their gender, employment status, type of university and type of the course to judge their satisfaction level of e-learning experience in higher education in Dubai. The answers given by students to our online questionnaire were based on student's perceptions about e-learning. E-learners also perceived that the 10 factors mentioned therein were the critical determinants of measuring their satisfaction level of e-learning environment in higher education in Dubai. The response to the questionnaire is a clear indication that e-learning is still very much in its infancy across Dubai universities & colleges and research findings also suggests that there is a significant difference between the satisfaction levels of e-learners of each category as mentioned in this study.

The significant difference in the satisfaction level of e-learners of all categories in the study highlights the problems, related to e-learning environment in Dubai's higher education institutes. Most of the respondents highlighted their dissatisfaction related to few factors in the questionnaire, which appears to us (researchers) as challenges and therefore the suggestions to improve the same are also given below:

The issues highlighted by respondents in the "*other comments*" section in the online survey form includes issues related to technical problems in few universities which makes e-Learning difficult and make them dissatisfied i.e. internet connectivity problems, busy internet lines and internet traffic problems, lack of improved computer skills and lack of Arabic language learning objects. It is worth noting that similar issues were mentioned in

Al-Fadhli's study which makes our study valid and reliable (Feldman, 2003; Cohen, *et. al.,* 2000). E-Learning providers in higher education in Dubai and elsewhere in the region need to pay attention to these issues including future e-Learning conferences in Dubai and elsewhere in the region if the Emirates is to work together successfully to use the vast potential of e-Learning to empower future generations of online learners in the region.

The other issue which was highlighted by respondents is related to faculty training, which is very important for advancement in Dubai educational systems. By enabling, the enabler institutions will be able to assist in changing teaching practices, by bringing in 21st century learning and development directly into Dubai universities classrooms.

Although many Dubai universities have tried to put in place e-Learning technology for their faculties by providing them adequate and required training & faculty development initiatives, there appears to be little systemic change. Although computers and the internet are now widely used by a majority of faculties in higher education in the country, there is still need for faculties to be trained in e-learning and web 2.0 environments, educational and teaching methods so that students can build confidence and satisfaction in their acquired knowledge.

Notwithstanding any perceived difficulties, the future of e-learning in Dubai's higher education is bright because of the centralization of ICT resources, recent large-scale and direct government investment, partnerships with ASEAN e-vendors and virtual universities (Malaysia, Syria, Singapore) and the potential of web-based education to alleviate some of the pedagogical problems, unique to Gulf societies, associated with institutional gender segregation. Those who are working to improve student learning, and seeking to exploit e-Learning to do so, have to ride each new wave of technological innovation in an attempt to divert it from its more natural course of techno-hype, and drive it towards Dubai's quality agenda. They have to build the means for e-Learning to evolve and mature as part of the higher educational change process so that it achieves its promise of an improved system of higher education.

In a nutshell, in order to make e-Learning the next generation education tool in Dubai's higher education system and to become the first country practicing e-Learning completely at higher education level in the region, higher level of standard and quality must be ensured by its universities and colleges. For this to happen they should consider the following:

Improved training for faculties in e-Learning and web 2.0 tools at all levels, appropriate policies favouring e-Learning, provision of technical support for e-Learning, availability of hardware, faster internet connectivity/improved bandwidth, improved software, lower prices for connectivity, appropriate content in appropriate languages. Students need to have time

management, discipline and computer skills in order to be successful in the e-Learning environment. Lastly, Schools, Colleges and Universities in Dubai which are deemed successful in e-learning need to adequately value collegial reflective sharing of practice (Carr and Chambers, 2006). If Dubai is to adopt the socio-cultural perspective as advocated by Scott (2010), then decision makers need to show leadership by being involved themselves in e-learning or what Arthur *et. al* (2010) calls the 'enabling school'. This will move the system forward. To borrow from Hargreaves (2000) words, 'these changes are a necessary part of the wider forces of change associated with post-modern conditions and the reallocation of knowledge' necessary for Dubai to attain its desired target.

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APPENDIX

To investigate the satisfaction level of e-learners in practicing e-Learning in higher education in Dubai, an online survey was conducted through a series of online questions based on 10 factors (which are also mentioned below in bold letters) to judge their satisfaction level for e-Learning in higher education in Dubai, UAE.

Online Survey Form

	4	3	2	1
Student' Gender:				
Employment status:				
Type of course(UG/PG):				
Name of University/College:				
Fill in the number that reflects your opinion. Number 4 reflects highly satisfied, 3 for satisfied, 2 for dissatisfied whereas one relflects highly dissatisfied. ☺…….☹				
E-learning course content and structure				
1a. Course material is well-structured and systematic.				
1b. Course contents are relevant, informative & interesting.				
Web usage & online interaction				
2. I was encouraged to participate in class & ask questions.				
Effectiveness of information technology infrastructure				
3. University's IT infrastructure is rich, reliable and capable of providing courses with the necessary tools to make the delivery process smooth.				
Ease of on-campus internet access & support of technical staff				
4. Problem related to administrative issues are sorted out without delay.				
University support of e-Learning activities				
5a. The institution offers wide variety of courses that would suit my requirements.				
5b. I get adequate support for completing my courses.				
Instructor's attitude towards interactive learning & teaching via e-Learning technologies				
6. Instructor handles the e-Learning units effectively and is always responsive to learners' needs.				

Online Survey Form, *Continued*

Fill in the number that reflects your opinion. Number 4 reflects highly satisfied, 3 for satisfied, 2 for dissatisfied whereas one relflects highly dissatisfied. ☺…….☹	4	3	2	1
7a. Instructor's style of presentation holds my interest.				
7b. Instructor is knowledgeable and is always well prepared.				
Evaluation of e-Learning system				
8. The Blackboard/WebCT/LMS/Moodle is very user-friendly.				
Evaluation & assessment of grades				
9a. Instructor completes the grading on time.				
9b. I am fully confident that instructor grading is unbiased & transparent.				
9c. The assessment tools are up-to-date and relevant.				
9d. I get adequate support to complete my assignment on time.				
University's library resources & e-libraries				
10. E-books, e-journals stimulate reading.				
11. Other comments:				