Quality of e-Learning: An Analysis Based on e-Learners' Perception of e-Learning

Rengasamy Elango[1], Vijaya Kumar Gudep[2], and M. Selvam[3]
[1]Majan University College, Sultanate of Oman
[2] Skyline College, Sharjah, United Arab Emirates
[3]Alagappa University, Tamil Nadu, India
elango@majancollege.edu.om
vkumar@skylinecollege.info

Abstract*:* e-Learning, of late, has been witnessing an unprecedented expansion as an opportunity for higher education. This expanding alternative mode calls for ensuring and imparting a sound and qualitative education. The present study made an attempt to investigate the issues related to the quality dimensions of e-learning. Our results revealed the presence of both strengths and weaknesses in the e-learning system. It is interesting to note, that the e-learners have expressed diverse opinions with regard to administrative issues, instruction materials, instructors' support, viper sessions (VIPER, Voice Internet Protocol Extended Reach is a software which helps interactive learning through the Internet) , grading and assessment. The findings of the study further demonstrate that if the concept of e-learning is imparted with a better approach and perspective, the reach will be phenomenal. This study reiterates the relevance of imparting qualitative education through e- learning.

Keywords: Online courses, e-learning, quality assessment

1. Introduction

The phenomenon of Globalization has transformed world trade, communications and economic structure in the 21st century and consequently, the complexion of higher education sector too has undergone a sea change in the last two decades. Although higher education, science and technology have always been international endeavors, of late, they have acquired new dimensions and features. Internationally, a majority of the institutions offering higher education is making strenuous efforts to revise its academic orientations and the course delivery strategies in the light of the interplay of these global changes and emerging challenges. Against this background, research studies which addressed the quality issues in e-learning are gaining importance. There is an increasing body of research evidence which demonstrated that, the thrust of the forces of globalization of higher education paved the way for the emergence of virtual education (Knight, 2002). It was also observed by several researchers that with the advent of the Internet technology, integration of the Information technology (IT) tools into higher education stream has become an easy task (Alsunbul, 2002; Altbach, 2002; Coffman James, 1996). In this context, online learning mode has emerged as a major higher education option before the global student community in general and Arab student population in particular. Higher education institutions operating in countries like America, UK, Australia, New Zealand, European Union (EU) and various other developed countries are making efforts to re-adjust in the light of the contemporary challenges and Middle East countries are no exception to this inevitable transformation. While advanced countries responded to these pressures of Globalization rather more successfully with their vast resources, the Arab nations are still in the process of designing strategies to re-adjust to the dynamic phase of global reforms in the higher education sector. In this context, several educational researchers observe that the student options are no longer constrained by boundaries and, therefore, it paved the way for the emergence of new internet-based borderless virtual education, distance learning and educational franchising (Phillips, 2001).

2. Issues in quality assurance – Middle East scenario

While contemporary research reports focused on the quality aspect of the borderless virtual education, a majority of the Middle East countries is focusing on designing viable accreditation systems to bring quality in virtual education. In this context, it was observed that the crossing of these boundaries has given rise to quality assurance challenges (Twigg, 2001). Looking at the global scenario, it could be stated that several countries are reviewing legislations on the *modus operandi*, rights and responsibilities of universities (e.g. USA, UK, Australia and New Zealand) and are focusing on designing dynamic accreditation systems for e-learning in private educational institutions (e.g. South Africa and Middle East countries). The Japanese Ministry of Education, Science and Technology is allowing universities to grant credit for online courses but is setting specific rules and regulations for such courses quite obviously to ensure higher standards on par with the regular stream. Several Gulf countries such as Bahrain, Oman, UAE and Saudi Arabia are revamping their educational systems in tune with the world class higher education standards. In addition to

Reference this paper as:
Elango, R. Gudep, V. K. and Selvam, M. "Quality of e-Learning: An Analysis Based on e-Learners' Perception of e-Learning." *The Electronic Journal of e-Learning* Volume 6 Issue 1, pp. 31 - 44, available online at www.ejel.org

this, various other quality assurance issues are being debated at the international levels which include visa regulations for trans-national students, Intellectual Property Rights (IPR) for virtual courses, recognition and licensing arrangements for service providers, arrangements and regulations for the transfer of educational credit and methods of controlling fraudulent providers (Altbach, 2002).

Stretching from Mauritania to the Persian Gulf, the Arab region is composed of nations of varying wealth, disparate geographies, and differing ethnic and religious characters. Yet despite their national particularities, Arab systems of higher education do manifest certain common, over-arching, region-wide trends and phenomena that are leading them to greater convergence. Arab nations as a whole have, in their relatively short post-independence histories, placed great emphasis on the expansion of schooling as the cornerstone of nation building. These efforts have been successful and have yielded substantial numbers of secondary graduates that far outstripped university capacities thereby becoming a crucial issue in the Arab higher education world.

The World Wide Web (WWW) has accentuated the e-learning process in the Middle East nations and as a consequence, virtual universities are built directly on the computer networks to offer online education. Many accredited educational institutions in the Gulf region are toying with the idea of online education because of the built in economies in staff costs, increased access from anywhere and anytime and the global spirit. Despite the varying degrees of digital readiness in different parts of the Arab world, a quick survey of the educational scene in the region shows a growing substantial interest in online learning. It is interesting to note that the e-learning market in the United Arab Emirates (UAE) alone is currently estimated to be $14 million and is expected to increase to $56 million by 2008. In the Arab Gulf (Saudi Arabia, UAE, Kuwait, Bahrain, Qatar, and Oman) total spending on e-learning was estimated at $72 million in 2004. It is estimated that online education spending in the Arab Gulf region will thus reach $240 million by the end of 2009, with Saudi Arabia and the UAE representing about 80 percent of the total. Researchers opine that, Saudi Arabia is likely to dominate in academic e-learning with its large student population, while the UAE may lead in business e-learning services. It is also interesting to note that despite the growth rates cited above, the reach of the internet in this region, is one of the lowest in the world (Table-1). Although several researchers have established a direct linkage between the internet usage and virtual learning, serious efforts are yet to be made by the respective governments to create a congenial environment for the growth of online education in the Middle East region.

Table 1: Internet users in the Middle East and in the World

Middle East Region	Population (2006 Est.)	Pop. % of world	Internet Users, Latest Data	% Population (Penetration)	Usage % of World	Use Growth (2000-2005)
Total in Middle East	190,084,161	2.9%	18,203,500	9.6%	1.8%	454.2%
Rest of the World	6,309,612,899	97.1%	1,003,859,782	15.9%	98.2%	180.6%
World Total	6,499,697,060	100.0%	1,022,063,282	25.7%	100.0%	634.8%

Source: www.internetworldstats.com accessed on 3-1-2007

In this context, the Arab Human Development Report (2002) also stated that the internet reach is at its lower ebb in the Arab world. It has stated that Arab Region with 5% of the world's population has only 0.5 percent of the internet users. Also, the internet penetration in the Arab region is just 2.2% when compared to the world's average which is 5.2%.

3. Background of the study

Though the Arab-world is a late-starter as far as e-learning is concerned, of late, the volume of students enrolling for e-learning courses is on the increase. While the entry of many on-line course providers is a healthy sign as many more potential learners would be roped in the system, the e-learners should be in a position to clearly distinguish and choose the best among them, in terms of quality.

Against this backdrop, the researchers have made an attempt to analyze the perception of e-learners on various dimensions of quality. Also, a study on quality assessment would hopefully help learners-in-waiting to take right decisions in choosing the right e-learning centers of learning.

4. Literature review

There is an increasing body of research evidence which addressed the various issues that are related to the advent of internet technology and its impact on the quality of global higher education delivery methods. Although several research studies are abounding on the same, the following studies have predominantly influenced the present study.

The review of the literature on the quality issues in e-learning revealed that online courses target a different segment of student population (Mangan, 2001; Thomas, 2001). Research studies further revealed that five out of six online students were found to be employed and would be unable to attend traditional classes (Thomas, 2001). It was also observed that on account of the current dynamic global economic situation, there was a steady increase in the number full-time employees seeking higher education. It is interesting to note that these prospective students cannot afford to leave their current jobs for a full-time or on-campus program enrolment (Mangan, 2001). The rapid pace of technological changes made it necessary for adults to continuously upgrade their knowledge and skills so as to stay competitive in the job market (Devi, 2002). Thus, the online education market created a larger geographic market for students, particularly for smaller universities (Smith, 2001).Although some researchers have found that the effectiveness of online learning equals or exceeds that of classroom learning (Rice, 2000; Rosenbaum,2001), the quality of online programs is still being debated (Hongmei, 2002). Although online courses offer some advantages in terms of the flexibility of the delivery and learning, they are not for everyone (Devi, 2001; Kearsley, 2002). It was also observed that, those who thrived in the traditional classroom or who enjoyed face-to-face lectures may find it difficult with online learning and vice versa (Jana, 1999; Ramos, 2001).

While addressing the various issues faced by the student community in virtual learning, Larsen et al (2002) observed that online students may not be able to determine their academic needs, concerns, and other pedagogical attributes of education. In this context, it was also observed that a well-designed faculty support system creates a constructive learning environment in which everyone ends up learning from each other (Katz-Stone, 2000). Successful online courses always had a high degree of faculty involvement and peer student support (Hongmei, 2002). Some educational experts observed that online courses were more interactive in nature than the traditional ones (Mangan, 2001; Rosenbaum, 2001). The reason offered by these researchers was that online education made it easier for slow learners, who may need more response time to participate (Smith, 2001). It was also observed that online courses may not provide enough opportunity for learning team building skills and for community building skills (Ramos, 2001).

Carl (1991) has given a detailed list of the positive aspects of the e-learning. He is of the opinion that e-courses can be monitored more easily than the traditional classrooms. He further states that on-line learners can make use of the electronic mail to establish communication with faculty members. He reiterates that e-learning may result in cost savings. In the same manner, Dwyers *et al* (1995) have explained the advantages of student-centered teaching approach which provides round the clock accessibility to course materials and providing just-in-time methods to assess and evaluate students' progress.

However, Oppenheimer, (1997), Kraut *et al*., (1998) have been dubious about the advantages of computers and online learning over traditional classroom teaching methodology. Phipps and Merisotis (1999) have stated that though the e-learning had many advantages, the dropout rates have been very high when compared with traditional class-room.

In a nutshell, previous studies have expressed diverse views on both the advantages and disadvantages of e-learning. However, the researchers reiterate that e-learning, if implemented properly, has the potential to reach millions of people. They have opined that the quality of the entire e-learning exercise should be properly assessed and ensured. Our study gains further momentum owing to the impetus given by the previous researchers.

Although several studies have been conducted on e-learning, hardly a few studies have included and surveyed the e-learners in their sampling frame. So, this study focuses at eliciting the views of the end-users i.e., e-learners on various aspects pertaining to quality.

5. Need and importance of the present study

The present study gains importance against the backdrop of the various challenges faced by the instructors while disseminating the academic inputs on virtual in the Middle East region. Although several studies were conducted on the issues in the global e-learning, less research studies have addressed the challenges faced by e-learners in the Arab region. The following factors validate the current research study. Firstly, the region's population relies largely on Arabic as a learning language (especially at the primary and secondary levels), and Arabic language has made limited inroads in the digital information landscape. Secondly, the educational systems in the Arab world are yet to orient their students for an active, independent, life-long learning approach to education which is a prime pre-requisite for participating in the online-learning world. Thirdly, although the digital infrastructure is well-developed in some regions (the Arab Gulf, in particular), its

actual penetration into homes and actual usage in workplaces and schools remain very limited. Online education depends strongly on digital infrastructure, PC, Internet penetration, and connection costs, all of which vary hugely from one Arab country to another. The situation is most advantageous in the Arab Gulf and least favorable in countries like Sudan and Yemen.

6. Methodology and sampling

The primary research question of the present study is to analyze the perception of the e-learners with the regard to the quality issues of the entire e-learning process. Quality assessment has different dimensions. To put it precisely, the present research work aims at answering the following questions. Are the e-learners happy with the e-learning system? Are they satisfied with the curriculum content, faculty support, delivery mode and assessment?. To serve this purpose, the questionnaire designed for the purpose tries to analyze the quality issues from the view point of the e-learners. In a nutshell, the research question of the present study could be stated as follows:

6.1 Research question

How do e-learners assess the quality of e-learning?

6.2 Objectives of the study

Based on the above research questions, the primary objectives of the present study are:

1. to analyze the e-learners' perception/opinions with regard to the commitment of the institution providing e-learning programs, curriculum content, faculty support, students' commitment, delivery mode, evaluation and assessment of the e-learning system,
2. to identify the major strengths and weaknesses, if any, of the e-learning system with regard to quality,
3. to examine whether any significant differences existed among the key demographic categories with regard to different factor dimensions of the study, and
4. to offer suggestions, in the light of the research findings, for improving the quality of the e-learning in Oman and UAE.

6.3 Hypotheses of the study

In addition to analyzing the above mentioned objectives, the study also has tested the following four hypotheses:

Null Hypothesis 1 *Ho : There are no significant differences between male and female students (e-learners) with regard to their opinions on the six factors on quality perceptions.*

Null Hypothesis 2 *Ho : There are no significant differences between Oman and UAE students with regard to their opinions on the six factors on quality perceptions.*

Null Hypothesis 3 *Ho : There are no significant differences among Matriculate, Graduate and Postgraduate students with regard to their opinions on the six factors on quality perceptions.*

Null Hypothesis 4 *Ho : There are no significant differences among the four employment categories with regard to their opinions on the six factors on quality perceptions.*

6.4 The questionnaire

A well-structured questionnaire was designed to collect the relevant data. The questions posed to the respondents were designed after an extensive literature review particularly pertaining to the quality issues and the experience gained from the pilot testing. The questionnaire was divided into three sections, A, B and C. Section 'A' focused on the demographic profile of the respondents such as name, sex, age, educational qualifications, employment, marital status, source of funds for studying the course and frequency of logging into the WebCT/BlackBoard/KEWL etc. Section B titled, students' perception of e-learning had comprehensive items in the form of statements seeking the opinions of respondents on various issues starting from the courses offered by the institution to the effectiveness of testing instruments and the assessment tools.

Section 'C', solicited suggestions/recommendations and expectations of the respondents on various e-learning issues.

6.5 Sample selection

The sample size was 112 and it included the under graduate e-learning students who were chosen by simple random sampling method from two Arab countries namely UAE and Oman. The demographic profile of the respondents considered for this study is presented in Table 2. Both primary and secondary data sources were used for collecting the research data. The primary data were collected by the questionnaire whereas the main sources of secondary data were Educational Manuals, Periodicals, Journals and Magazines. Questionnaires were administered to the respondents directly by the researchers by visiting them in their respective offices. Data collection took place from January 2006 to September 2006.

Table 2: Demographic profile of respondents

Basis of Classification	Category	Count	Percent %
Country	Oman	62	55.4
	UAE	50	44.6
Gender	Male	86	76.8
	Female	26	23.2
Education	Matriculates	50	44.6
	Graduates	41	36.6
	Postgraduates	21	18.8
Employment	Government	47	42.0
	Private	43	38.4
	Own Business	14	12.5
	Unemployed	8	7.1
Marital Status	Married	42	37.5
	Unmarried	70	62.5

Source: Primary data

6.6 Reliability test and initial purification of the instrument

As stated earlier, Section B, titled students' perception of e-learning had 40 statements. The respondents were requested to choose one out of the five choices given. The choices were based on Likert's Interval Scale i.e., Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1). The statements basically aimed at eliciting the views of respondents with regard to the commitment of the institution providing programs, curriculum content, faculty support, students' commitment, delivery mode, evaluation and assessment of the e-learning system. (Respondents from Oman are pursuing their online MBA course offered by one of the leading universities in UK and students from UAE are pursuing their BBA undergraduate courses of a leading University in USA.) A total of 180 questionnaires were personally distributed to the respondents giving a brief explanation of the purpose for which the survey was undertaken. However, only 112 completed questionnaires had been returned with a success rate of 62.22%. A reliability test was conducted in order to ensure the reliability and internal consistency of the scale. The initial Cronbach α (alpha) value was 0.895 for the 40 items included thus ensuring the reliability and internal consistency of the scales used. This was considered appropriate to proceed further with the analysis as the Cronbach α (alpha) > 0.70, as suggested by Nunnally (1978), is considered sufficient to ensure both reliability and internal consistency of the scales. However, the corrected-item-to-total correlation revealed that 3 of the 40 items had high standard deviation hence they were removed from the rest of the analysis. So, finally only 37 items were included for analysis for which the revised Cronbach alpha was 0.883. The rest of the analysis is done as follows; once the scales exhibited desirable levels of consistency, the researcher proceeded further. Firstly, descriptive statistics was prepared to analyze the opinion of the respondents with regard to the various questions included in the questionnaire. Secondly, a Principal Component analysis was applied to comprehend the data dimensions followed by Factor Analysis for extracting factors. Thirdly, based on the factors, both Mann-Whitney and Kruskal-Wallis tests were applied for hypotheses testing. Fourthly, the results of the open-ended questions were grouped logically and presented '*verbatim*'. The results are presented in the same order in which analysis was done.

7. Analytical results I

7.1 Key findings of the descriptive statistics

The major findings of the descriptive statistics are presented below: A ranking of all the 37 interval scale items finally included for analysis has revealed the following results. The ranking was done as follows: In the Likert's scale, each item consists of a maximum of 5 points as the option, 'strongly agree' carries 5 points.

So, if all the 112 respondents choose 'strongly agree', the maximum score will be 560 points (i.e.,112 * 5). Based on this ranking the top 10 items that scored the maximum points have been identified as strengths and the bottom 10 as weaknesses of the e-learning system and the results are presented below:

Table 3: Major strengths of e-Learning system (Top 10)

Sl.No	Item	Score	%	Rank
1	I never indulge in malpractices such as plagiarism, cheating etc.,	423*	75.54	1
2	I submit my assignments and quizzes on time	422	75.36	2
3	I do not hesitate to contact instructors for clarifications	405	72.32	3
4	The instructor is knowledgeable	402	71.79	4
5	The instructor is well-prepared always	401	71.61	5
6	The instructor communicates ideas clearly	396	70.71	6
7	e-books, e-journals stimulate reading	391	69.82	7
8	I allot adequate time for my preparations/studies	387	69.11	8
9	The BlackBoard/WebCT/KEWL is very user-friendly	384	68.57	9
10	The courses are innovative and contemporary	382	68.21	10

*indicates a score of 423 out of the maximum score of 560
Source: Primary Data

7.1.1 Discussion of results

The major strengths of the e-learning system can be seen in Table 3. The respondents have stated that they never indulge in any kind of malpractice (Rank 1). This is indeed a strength of the e-learning system where the possibility of committing unfair means is more. This is a healthy trend too. Again, complying with the course requirements is an essential pre-requisite for the entire e-learning system. For this, the respondents have stated that they submit their assignments and quizzes on time (Rank 2). It is an appreciable commitment on the part of the e-learners for ensuring the success of the programs. A major short-coming of the e-learning system is that the tutors and the cohorts do not have the opportunity to meet and discuss the course contents and subject matter frequently. This barrier can be removed if the cohorts get in touch with the tutor through the net. Since the e-learners have stated that they do not hesitate to contact instructors for clarifications, this barrier is hopefully removed (Rank 3). The knowledge level of the instructors is essential for the success of the e-learning programs. The e-learners have stated that (Ranks 4, 5 and 6) the instructor is not only knowledgeable but he/she prepares very well and communicates his/her ideas clearly. Ranks 7 to 10 clearly explain that a majority of e-learners make use of e-books, e-journals, allot time for their preparations, make use of the BlackBoard/WebCT/KEWL and admit that the courses are innovative and contemporary. This again is a commendable co-operation from the e-learners without whose support the quality of the e-learning programs will hardly be successful. To put it precisely, in the e-learning virtual environment also, students are of the view that they are receiving all the support they need similar to the regular classroom environment.

Table 4: Major weaknesses/shortcomings of e-Learning system (Bottom 10)

Sl.No	Item	Score	%	Rank
1	Graphics, animations, etc., ignite learning	304*	54.29	1
2	Viper Sessions are quite useful	305	54.46	2
3	My problems related to administrative issues are sorted out without delay	309	55.18	3
4	Testing instruments capture the student's grasp and grip	328	58.57	4
5	Audio-visual presentations make learning effective	332	59.29	5
6	The institutions programs are well-structured and systematic	334	59.64	6
7	The institution offers wide variety of courses that would suit my requirements	335	59.82	7
8	Instructor completes the grading on time	335	59.82	8
9	Chapter contents are informative and interesting	348	62.14	9
10	I get adequate financial support for the successful completion of my degree programs	349	62.32	10

Source: Primary Data
**Indicates a score of 304 out of the maximum score of 560*

7.1.2 Discussion of results

Table 4 indicates the weaknesses of the e-learning system. The respondents stated that graphics, animations did not ignite leaning (Rank 1) (Note: Rank 1 indicates the lowest grade). Also, they deplored that the viper sessions were not quite useful to them (Rank 2). Again, the respondents were of the opinion that their problems related to the administrative issues were not sorted out immediately (Rank 3). Also, there was a concern among the respondents with regard to audio-visual presentations (Rank 5), the structure of the

institutions' program (Rank 6), non-availability of a variety of courses that would suit the requirements of e-learners (Rank 7). The e-learners were also dissatisfied with the delay in awarding grades (Rank 8). They also felt that the chapter contents were not quite informative and interesting (Rank 9). They have further stated that they needed adequate financial support for the successful completion of their programs (Rank 10).

8. Analytical results II: Factor analysis

In this part, a Principal Component Analysis was conducted to identify the underlying dimension in the data using the Kaiser's general rule of thumb of extracting factors with eigen value > 1. A total of eleven factors emerged explaining about 69.85% of the total variance. Though the factors have ensured a meaningful alignment, the last four factors either emerged without a core theme or had aligned in more than one factors. However, Kaiser's rule is inadequate in identifying among factors that have little differences in eigen values. In order to overcome this, 'Cartell's Scree test' was used. From the Scree plot six factors emerged. Again, Principal Axis Factor extraction method (Rotation Method Varimax with Kaiser Normalization) was applied instructing the SPSS (Statistical Software for Social Sciences version 12) to extract six factors. The six factors have explained about 51.66 percent of the total variance explained. The results of the Rotated Factor Matrix are presented in the table below followed by the interpretation of factors:

Table 5: Results of factor analysis, factor dimensions

Factor	Items in the Questionnaire	Factor Loading
Factor I *Relevance of Course Contents and Delivery Related Factor*	The courses are innovative and contemporary	0.802
	Course contents/modules are relevant and updated	0.741
	Audio-Visual Presentation makes learning effective	0.617
	Instructor is always responsive to learners' needs	0.610
Factor II *Effectiveness of Delivery Mode Related Factor*	I never indulge in malpractices such as plagiarism, cheating etc.,	0.798
	e-books, e-journals stimulate reading	0.661
	Graphics, animations ignite learning	0.574
	Instructors make learning more inspiring	0.522
	The instructor communicates ideas clearly	
Factor III *Instructor Support and Students' Commitment Related Factor*	The instructor is well prepared always.	0.809
	I allot adequate time for my preparations/studies	0.557
	I do not hesitate to contact my instructor for clarifications	0.548
	I submit my quizzes, assignments on time.	0.530
Factor IV *Web-usage and Online interaction related factor*	I do not feel aloof in the learning process	0.723
	I get adequate support for completing my courses	0.649
	Viper sessions are quite useful	0.642
Factor V *Course Compliance and Confidence in the System Related Factor*	The instructor is knowledgeable	0.631
	I am fully confident of the evaluation system and Process	0.610
	I comply with the total course requirements	0.589
Factor VI *Relevance of Testing Instruments and Grading Related Factor*	Testing instruments assess the grasp and grip of the students.	0.774
	Instructor Grading is unbiased and transparent.	0.591
	The assessment tools are relevant and up-to-date.	0.531

8.1 Interpretation of factors

8.1.1 Factor I: Relevance of courses/contents and delivery related factor

The First factor was relatively easy to interpret as it consisted of four items that were all related to the relevance of courses, course contents and the method of delivery. A cumulative score of four items in the factor revealed that 64.33% of the e-learners' agree that the course contents and method of delivery were relevant. This further demonstrated that 35.67% of the respondents were not happy with the existing contents and the method of delivery. This is an important finding to be reckoned with and also has implications for the virtual universities offering online courses.

8.1.2 Factor II : Effectiveness of delivery mode related factor

A close look at the items grouped in Factor II, 'I never indulge in malpractices such as plagiarism, cheating etc'.(0.798), 'e-books, e-journals stimulate reading'(0.661), 'Graphics, animations inspire learning'(0.599), 'Instructors makes learning more inspiring'(0.574), 'The instructor communicates ideas clearly(0.522)', goaded the researcher to name this factor as '*Effectiveness Of Delivery Mode Related Factor*'. In other words, a total of 66.64 percent of the respondents is of the opinion that the online courses are delivered effectively. This is again an important factor to be taken note of by the organizations/universities offering online courses. The universities should carefully consider the views/owes of the 33.36 percent of the students who have stated that effectiveness of delivery needs to be improved.

8.1.3 Factor III : Instructor support and student commitment related factor

In factor III, four statements aligned together. A close look at the four statements, 'The instructor is well-prepared always' (0.809), 'I allot adequate time for my preparations/studies' (0.557). 'I do not hesitate to contact instructors for clarifications" (0.548) and 'I submit my quizzes/assignments on time'(0.530) prompted the researcher to name this factor as "Institutional support and students' commitment" related factor. This is indeed an interesting finding as the instructor and the cohorts support is quite essential for ensuring the success of the program. This factor reveals that both are co-operating very well thus ensuring the success of the online programs.

8.1.4 Factor IV : Web-usage and online interaction related factor

Though all the students are scattered at different places, the survey reveals that they do not feel aloof in the e-learning process. A look at all the items in Factor IV has guided the researcher to conclude that e-learners make the best use of the support extended by the online virtual universities. The various items 'I do not feel aloof in the e-learning process' (0.723), 'I get adequate support for completing my courses' (0.649) and 'viper sessions are quite useful' (0.642) clearly state that web-usage is at the desired level for ensuring the success of the program.

8.1.5 Factor V: Course compliance and confidence in the system related factor

Three items have aligned in this factor. 'The instructor is knowledgeable' (0.631), 'I am fully confident of the evaluation system and process' (0.610) and 'I comply with the total course requirements' (0.589). A close look at the items guided the researcher to coin this factor 'as course compliance and confidence in the system related factor'. It is a well-known fact that complying with the course requirements and confidence in the system are the essential pre-requisites for the successful completion of the courses. In this factor, the e-learners not only vouchsafe the knowledge level of the instructors but also repose a high level of confidence in the e-learning system.

8.1.6 Factor VI : Relevance of testing instruments and grading related factor

The relevance of testing instruments is an essential pre-requisite for the success of the e-learning portals. So, a few questions related to the relevance of the testing instruments were included in the questionnaire. A total of three items have aligned in this last factor. The three items are as follows; 'Testing instruments capture the students' grasp and grip' (0.774), 'Instructor grading is unbiased and transparent' (0.591) and 'The assessment tools are relevant and up-to-date'(0.531). In this factor, e-learners express their happiness with regard to the relevance of testing instruments and also grading. Though the Factor loadings are less (0.591 and 0.531), they show that a considerable portion of the e-learners are quite contented with the testing methods.

9. Analytical results III: Hypothesis testing

Table 6: Comparison of Key Demographic Categories and Factor Dimensions

Factors	Sex *Male* *Female* (p-value Mann-Whitney)	Country *Oman* *UAE* (p-value Mann-Whitney)	Edu.Qual *Matriculates* *Graduates* *Postgraduates* (p-value Kruskal-Wallis)	Employment *Government* *Private* *Own Business* *Unemployed* (p-value-Kruskal-Wallis)
I. Relevance Of Course Contents And Delivery	0.043*	0.001**	0.005**	0.103
II. Effectiveness Of Delivery Mode	0.289	0.000**	0.000**	0.003**
III. Instructor Support & Students' Commitment	0.793	0.017*	0.059	0.298
IV. Web Usage And On Line Interaction	0.023*	0.210	0.307	0.035*
V. Course Compliance And Confidence In The System	0.009**	0.000**	0.000**	0.103
VI. Relevance Of Testing Instruments And Grading	0.233	0.003**	0.008**	0.102

Source: Primary Data * Significant at 5% level** Highly Significant at 1% level

9.1 Discussion of results

Table 6 gives the analytical results of Mann-Whitney and Kruskal-Wallis tests that compared the key demographic categories and factor dimensions.

9.1.1 Null Hypothesis-1

Ho 1 tested the assumption that there are no significant differences between male and female students (e-learners) with regard to their opinions on the six factors on quality perceptions. Since it is a two sample non-parametric test, Mann-Whitney test considered appropriate, was applied. Null Hypothesis, Ho has been rejected in respect of three out of six factors implying that significant differences have been noticed between male and female e-learners with regard to the 'Relevance of Course Contents and Delivery'(Factor I - p-value 0.043*), 'Web-Usage and Online Interaction'(Factor IV - p-value 0.023*), and 'Course Compliance and Confidence in the System (Factor V p-value 0.009**) related factors.

9.1.2 Null Hypothesis-2

Ho 2 tested the assumption that there are no significant differences between Oman and UAE students with regard to their opinions on the six factors on quality perceptions. Here again, Mann-Whitney was applied. Interestingly, Ho has been rejected in respect of four out of six factors. It means that highly significant differences prevail with regard to Factor I, 'Relevance of Course Contents and Delivery'(p-value 0.001**), Factor II, Effectiveness of Delivery Mode' (p-value 0.000**), Factor III, 'Instructor Support and Students' Commitment' (p-value 0.017* significant), Factor V, 'Course Compliance and Confidence in the System' (p-value 0.000**) and Factor VI, 'Relevance of Testing Instruments and Grading' (p-value 0.003**).

9.1.3 Null Hypothesis-3

Ho 3 assumed that there are no significant differences among Matriculate, Graduate and Post-graduate students with regard to their opinions on the six factors on quality perceptions. Since three variables had to be compared, Kruskal-Wallis H test was applied. Ho has been rejected in four out of six factors on quality perceptions. In other words, highly significant differences have been noticed among the opinions of matriculates, graduates and postgraduates in respect of four factors, and with the result, the Ho has been rejected in the above four variables. Respondents' opinions significantly differ in respect of Factor I, 'Relevance of Course Contents and Delivery' (p-value 0.005**) and Factor II 'Effectiveness of Delivery Mode' (p-value 0.000**), Factor V, 'Course Compliance and Confidence in the System' (p-value 0.000**) and Factor VI 'Relevance of Testing Instruments and Grading'(0.008**).

9.1.4 Null Hypothesis-4

Ho 4 tested whether there are any significant differences among the four employment categories with regard to their opinions on the six factors on quality perceptions. Null Hypotheses have been rejected in respect of two factors , Factor II, 'Effectiveness of Delivery Mode Related Factor' (p-value 0.003**) and Factor II Web-Usage and Online Interaction Related Factor (p-value 0.035*). It means that people in various employment categories have different opinions on the two factors analyzed.

10. Summary of the findings and recommendations

The major findings of the study along with the recommendations are as follows:

1. Majority of the e-learners has stated that they never resort to any kind of malpractice and further reiterate that they always comply with the course requirements. This undoubtedly ensures the much-needed quality of the e-learning and also the commitment of the e-learners paving way for successful functioning of the concept of e-learning.
2. The e-learners were satisfied with the knowledge level of the instructors and further stated that e-books, e-journals, BlackBoard/WebCT/KEWL are useful. A considerable percent of the e-learners is also happy with the courses and their contents. So, it is better to continue with these positive aspects of e-learning.
3. However, the e-learners stated that the graphics, animations included in course materials do not ignite learning. Though this finding cannot be generalized to all the modules and courses, in the absence of teacher-student personal contact, it is recommended that the graphics and other pictorial materials are fine-tuned to convey the course contents in a crystal clear way.
4. Another interesting finding of the study is that a vast majority of the e-learners was of the opinion that the Viper sessions were not beneficial to them. So, this important interactive tool between the instructors and e-learners need to be made more user-friendly so as to help them achieve the intended purpose.
5. Again, a considerable portion of the e-learners stated that their problems related to administrative issues were not sorted out immediately. This needs to be addressed by the authorities concerned as these types of minor issues might result in low morale among the students. Again, solving their genuine grievances/problems without delay would help bring in more students to the online learning programs.
6. Other grievances of the e-learners included structure of the institutions' programs and non-availability of a variety of courses to suit the requirements of the e-learners.
7. Yet another set of e-learners suggested that the chapter contents need to be more informative and interesting. About 35.67% of the respondents were disappointed with the contents and about 33.36% of the e-learners were dissatisfied with the effectiveness of the delivery and they need to be improved. It is recommended that these problems be addressed immediately.
8. The e-learners informed that adequate financial support is also required for the successful completion of their program of study. It is also recommended that a 'Common Aid Fund' be created by the universities to help the needy e-learners.
9. Results revealed that the e-learners are quite contented with the testing instruments and grading. However, they need to be improved further to test the aptitude and knowledge level of the students and for ensuring the success of the e-learning programs.
10. Mann-Whitney test has revealed that there are significant differences between male and female e-learners with regard to the relevance of course contents and delivery, web-usage & online interactions and in respect of course compliance and confidence in the system. It is for the online course providers to further examine the causes that lead to the differences and solve them immediately.
11. Another Mann-Whitney test has confirmed the presence of statistically significant differences between Oman and UAE e-learners with regard to the factors on quality perceptions. The reasons for these differences need to be probed in order to fine-tune the system as students from different regions join the e-learning programs and the differences need to be removed.
12. Kruskal-Wallis test that analyzed the significance of differences, if any, among the Matriculate, Graduate and Postgraduate students with regard to their opinions on the six factors on quality perceptions rejected the Ho in respect of four factors, confirming the presence of statistically significant differences among the different educational categories with regard to quality perceptions. So, it is recommended that these differences are ironed out and uniformity ensured for all the categories.

13. Yet another K-W test revealed that there were statistically significant differences among the different employment categories with regard to two factors i.e 'Effectiveness of Delivery Mode and Web-Usage and Online Interaction. The virtual universities, to ensure uniformity in quality, should also properly analyze these differences in quality perception as people with different employment pursue online courses and programs.
14. The analytical results reveal that the concept of e-learning suffer from certain inherent shortcomings. However, by and large, the e-learners are quite contented with the entire system. Individual weaknesses and problems (Please Refer to Appendix) need to be investigated further, analyzed and removed to ensure the success of the programs.
15. A holistic approach needs to be adopted by all concerned for the success of the e-learning system with regard to various vital aspects such as administrative issues, course contents, instructor support, viper sessions, grading and assessment etc.,

11. Conclusion

The present study made an attempt to assess the quality of e-learning programs offered by two different online universities and the samples were drawn from them. The study brought out a few strengths and weaknesses in the system. The findings also revealed the existence of significant differences among the demographic profiles of respondents with regard to a few crucial factors extracted. E-learners have expressed diverse opinions with regard to administrative issues, instruction materials, instructor support, viper sessions, grading and assessment. The study further reiterated that if the concept of e-learning was imparted with a better approach and perspective, the reach would be phenomenal. Also, a few crucial issues, as recommended by the researcher, need to be addressed to make the entire e-learning process successful. This gains further momentum as the concept of e-learning is in its early stages in the Middle-East region.

Acknowledgments

We wish to express our sincere gratitude to the students of online courses from Oman and UAE (United Arab Emirates) for having participated in this survey and for expressing their opinions freely on the different dimensions of Quality. We would also like to place on record the insightful comments given by two anonymous referees. We have no hesitation to add that their comments have helped us to improve the quality of the paper significantly.

References

Alsunbul, A (2002). "Issues relating to distance education in the Arab world" *Convergence*, 35(1), pp 59-80.

Altbach, Philip G. (2002), "Knowledge and education as international commodities: The collapse of the common good", *International Journal of Higher Education*, No.28, pp 2–5.

Arab Human Development Report, Available from World Wide Web http://www.pogar.org/publications/other/ahdr/ahdr2002e.pdf

Carl, D (1991), "Electronic distance education: Positives outweigh negatives", *Technological Horizons in Education*, Vol

Coffman James (1996), "Current Issues in Higher Education in the Arab World", *International Higher Education*, Spring

Devi, C. (2001) "Qualities of a successful online learner", *Computimes*, Malaysia, (April 30),1.

Devi, C. (2002). "Online learning, tool for the future", *Computimes*, Malaysia, 1.

Dwyer, D. Barbieri, K. Helen, M. (1995), "Creating a Virtual Class Room for Interactive Education on the Web", available from World Wide Web http://www.igd.fhg.de/archive/1995_www95/papers/62/ctc.virtual.class/ctc.virtual.class.html

Hongmei, L. (2002, March). Distance education: Pros, cons, and the future. Paper presented at the annual meeting of the Western States Communication Association, Long Beach, CA.

http://www.arabialink.com/Archive/GWPersp/GWP2002/GWP_2002_07_04.htm

Internet Worldstats, Usage and Population Statistics, Internet users in the Middle East, details collected from http://www.internetworldstats.com/stats5.htm#top accessed on 3.1.2007.

Jana, R. (1999) *"Getting the most out of online learning"*. InfoWorld, 21(37), pp 119

Katz-Stone, A. (2000) "Online learning", *Washington Business Journal*, 18(38),p 35.

Kearsley, G. (2002) "Is online learning for everybody?", *Educational Technology,* 42(1), pp 41–44.

Knight, Jane. (2002) "Trade in Higher Education Services: The Implications of GATS", *Observatory Report on Borderless Higher Education*, London (www.obhe.ac.uk)

Kraut, R. Loudmark, V. Patterson, S. Kiesler, S. Mukopadhyay. Scherlis, W.(1998), Lankford, K.(2001) "Web MBAs make the grade", *Kiplinger's Personal Finance,* 55(5), pp 84–88.

Larsen. Karl. John, P. Martin. Rosemary, Morris, (2002) Trade in Educational Services: Trends and Emerging Issues, *Organization for Economic Cooperation and Development Publication,* Paris.

Mangan, K. S. (2001) "Expectations evaporate for online MBA programs", *Chronicle of Higher Education*, 48(6), p31.

Nunnally, J.C. (1978) *Psychometric Theory* (2nd ed). McGraw-Hill, New York

Oppenheimer, T. (1997) "The Computer Delusion", *Atlantic Monthly*, Vol 280, No.280, No.1, pp 45-62
Phillips, V. (2001) "E-learning – The other white meat? Industry Wide Promotion Campaign takes shape", *The Virtual University Gazette,* pp 1–5.
Ramos, G. P. (2001) October 8, "E-learning not effective for everyone", *Computerworld*, Philippines.
Rice, D. (2000) "E-learning study has surprising results", *IT Support News*, 20(11), p22.
Rosenbaum, D. B. (2001) May 28, "E-learning beckons busy professionals", *ENR*, 246(21), pp 38–42
Smith, L. J. (2001) "Content and delivery: A comparison and contrast of electronic and traditional MBA marketing planning courses", *Journal of Marketing Education,* 23(1), p 35.
The Institute for Higher for Education Policy, A Review of Contemporary Research on the effectiveness of distance learning in Higher Education available http://www.ihep.org/Pubs/PDF/Difference.pdf accessed on 21.07.2006
Thomas, K. Q. (2001) "Local colleges providing online learning programs", *Rochester Business Journal*, 16(43), p 28.
Twigg, C. (2001) "Quality assurance for whom? Providers and consumers in today's distributed learning environment" available from http://connect.educause.edu/library/abstract/QualityAssuranceforW/34062?time=1189669687

Appendix

(The respondents' free opinions on the various dimensions of quality are presented *verbatim*)

Assessment Related Issues "We deserve more marks in our assignment because we are working hard" "Students worked hard in their assignment; the problem is that marks given are very low compared with work done". "We need more marks in our assessment" "In some assessment instructor is not helpful" "Grades are sometimes delayed"
BlackBoard/WebCT Related Issues "BlackBoard needs improvement" "Black Board is not always updated; we always got old information and it is not used by university/college effectively" "I believe that instructor method is more useful and effective than the viper. We are not benefiting at all from viper session"
Unethical Issues "Majority of my friends cheat in online courses. Very few work hard sincerely". "The same questions are used in the next batch so who studies? Answers are ready". "My friends have the answers from seniors ready in a separate folder. It is so easy". "I feel that my online teacher does not read my postings because I got an 'A' for nothing". General Views and Comments "Too many assignments on online courses. It is so boring" "I have not learned much on online courses. They are waste of time and money". "It is costing me additional expense as I have to use Internet at home. My father is angry with me". "I liked online because my grades are safe and I can improve my GPA". "It is good that I don't see my teacher face to face and I like it". "I don't want to learn from an unknown teacher who sits in an island away from Dubai". "I feel that all online courses should be banned". "How can I learn College Algebra course online? It is a joke!!!!" "I like online courses because all the stuff is systematically prepared and easy to study". "The lecture notes in the online courses are too good for slow learners." "I spoke to my online teacher on Skype and he was excellent." "My friends spoke to my online teacher from the Skyline Lab and he was terrific". "We want more interaction on Skype with online instructor." "I prefer an on site teacher to an online teacher. What will learn from an unknown source?" "Sometimes, I don't understand from the best onsite teacher, so how can I learn from online sources?"

