E-LEARNING QUAL: THE WAY TO ACHIEVE E-LEARNING SERVICE QUALITY IN EGYPTIAN EDUCATION INSTITUTIONS

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Abstract

Recently, the learning and education methods were highly affected by the technology evolution that has led to major changes in the way that service is delivered to the beneficiaries. In line with global trends, most education institutions in Egypt have been undergoing many changes and start to introduce many services based on these advanced technologies such as providing online training courses, online exams, undergraduate e-certificates,…etc. Providers of this service must keep in their mind that no one of those who want education or those who want training will give up the traditional method of learning to use the online service unless the new service is higher quality than traditional service. The main objective of this study is to clarify the dimensions that influence the quality of e-learning service that is provided in Egypt through the internet, and to develop a comprehensive multiple-item scale (instrument) for measuring e-learning service quality (E-Learning QUAL). The findings of this study have important implications for research and education institutions that are currently offering such online services as well as education institutions that are planning to provide such services. This study provides further evidence on the dimensions which influence the perceived e-learning service quality which are: ease of use, usefulness, security & privacy, variety of online services offered, reliability, responsiveness, Convenience, Compensation, and efficiency. This is what the providers of such service should try to find out in order to improve their online services and gain a competitive advantage as well.

Keywords: E-learning, E-learning quality, E-learning quality dimensions, e-service

INTRODUCTION

The developments taking place in information and communication technology are increasing the competition in education and training institutions worldwide. Thus, the deployment of advanced technologies is essential to achieve a competitive edge. With technology revolution, the internet remains a critical channel for selling goods and services. So, issue of e-service quality became pivotal factor of success.

Today, we can't deny that the use of information and communication technology is becoming a cornerstone in dealing with the competitive pressure faced by different business around by the world, and at the same time, service quality becomes a critical issue for service providers, this simply because providing high quality services will enhance their image, sales, profitability, and retain their customers (Berry et al, 1989; Gummesson, 1993). With the increasing amount of researches into internet marketing, e-service quality has been recognized as an important factor in determining the success or failure of firms that provide their services via internet (Yang, 2001; Godwin. et al, 2010). E-service quality can potentially increase attractiveness, customer retention, and can maximize the online competitive advantage of e-commerce as a whole.

Several researchers have discussed the importance of e-service quality and have demonstrated its positive relationship with profits, increased market shares, return on investment, future purchase intentions and customer satisfaction (Anderson, Fornell, and Lehmann, 1994; Fornell, et al., 2010). We can say, delivering high quality services is a prerequisite for achieving customer satisfaction and only through customer satisfaction the company can gain loyal customers (Gronroos, 2007). Now, An increasing number of education and training institutions in Egypt offer facilities that allow students or trainees to study complete curriculum through the internet and receive their certificates after the completion of their studies.

E-learning to compete effectively against traditional learning, e-service quality must be relatively higher. Identifying the dimensions that influence the e-learning service quality and how to measure this quality is a big challenge that faces providers of such service. Hiltunen et al. (2004) argue that the key factor in e-learning competition is the quality of service provided by such institutions.

Although the literature on traditional service quality is abundant (Parasuraman et al, 1985, 1988, 2005; Zeithaml et al, 1996, 2002), very little researches has been conducted on the evaluation of the quality services delivered over the internet (Cox & Dale, 2001).

However, the service quality attributes and customer requirements involved in internet education have not been studied enough, which can be implied by the fact that there has not been available a precise measurement instrument for e-learning service quality (Cox & Dale,

2001; Gounaris, 2010). Thus, it is really important for Egyptian e-learning providers to learn more about their customers' perceptions toward the e-learning service quality and the dimensions that students or trainees find it essential for increasing quality services delivery on the internet education. So, this article provides an inclusive understanding of dimensions that influence e-learning quality provided by Egyptian educational institutions through developing new multiple-item scale for measuring e-learning service quality (E-learning QUAL).

PROPOSED SCALE FOR MEASURING E-LEARNING SERVICE QUALITY

When judging the quality of e-learning provided by Egyptian education and training institutions, e-learning recipients consider a lot of dimensions that influence their judgment. For some recipients, the ease of use and reliability of the e-service would be the most important dimensions, for others the responsiveness and convenience might be more important. To effectively enhance e-learning service quality, e-learning providers should first understand the dimensions that e-learning recipients use to judge such service quality.

If e-learning providers have knowledge about the quality dimensions that can be used to assess the quality of their online services and the overall satisfaction of their recipients with each of these dimensions, definitely, it would be much easier for e-learning providers to take necessary decisions and steps to improve the overall e-learning service quality. In addition, this knowledge will help e-learning providers to allocate their resources in a way that maximize e-service quality improvement. Consequently, this leads to gaining competitive advantage which helps e-learning providers to retain their customers, remain in the marketplace, and increase their profitability.

CRITERIA E-LEARNING RECIPIENTS USE IN EVALUATING PERCEIVED E-LEARNING SERVICE QUALITY

The researcher suggests nine dimensions of e-learning service quality should be taken into consideration when e-learning providers plan to introduce or improve e-learning service quality in Egyptian educational institutions. In this section, the proposed quality dimensions that should be included in the proposed scale, the reasons and literature review which support the researcher point of view will be discussed.

Perceived Ease Of Use

Langeard et al,(1981) found that in deciding between alternatives of technology based self-service, customers considered the effort involved in using the e-service as an important factor. Most researches suggested that potential customers of technology based self-service are

concerned about the effort required to use such service and the complexity of the process of that service. The two characteristics effort and complexity appear to be related and encompassed in "ease of use" found to be an important attribute to customers in using computer technology (Davis et al., 1989; Bagozzi, 1990; Ying, 2010). Rogers (1983) defines perceived ease of use as it is the term that represents the degree to which the perceived innovation is not difficult to be understood, learn, or operate. He further stated that perceived ease of use is the degree to which consumers perceive a new product or service as better than its substitutes. Customers of online services may be concerned about ease of use for several reasons. One reason is related to saving actual effort expended. Another reason may be to reduce social risk. If customers expect the technology to be difficult to use, they may become concerned about social risk (i.e. they may fear looking foolish as they struggle to use it) and will view this as a low quality option. Instead, if they expected the technology to be easy to use, they will view the service as a high quality option. Hence, the educational institution website which is easier to use than another is more likely to be accepted by customers (Pierre, 2011). Therefore, the researcher nominates this dimension to be one of the determinants of e-learning service quality.

Perceived Usefulness

According to Davis, 1989; Ying, 2010, perceived usefulness is defined as the degree to which the user believes that using a particular system would enhance his or her job performance. Davis, in developing the Technology Acceptance model (TAM), proved that perceived usefulness is a significant factor effects the acceptance of any new technology (Davis et al.,1989; Yung, 2011). Tan and Teo (2000) suggested that the perceived usefulness is an important factor in determining adoption of innovations. As a consequence, the greater the perceived usefulness of using electronic services, the more likely that electronic services will be adopted (Polatoglu and Ekin, 2001; Jaruwachirathanakul and Fink, 2005). Hence, the researcher posits this dimension to be one of the determinants of e-learning service quality.

Perceived Security And Privacy

Security and Privacy are key evaluative criteria in online services (Montoya et al. 2000). These two related criteria have been distinguished from each other. Security involves protecting users from the risk of fraud and financial loss from the use of their credit card or other financial information. Privacy, on the other hand, involves the protection of personal information, not sharing personal information collected about consumers with other sites and providing informed

consent (Friedman et al. 2000; Khalaf et al. 2011). Generally, security and privacy have been shown to have a strong impact on attitude toward use of online services (Montoya et al. 2000). Thereby, the researcher proposes this dimension also to be one of the determinants of e-learning service quality.

Perceived Variety Of Services Offered

Providing ranges of electronic services that satisfy all customer needs is an important component of automated service (Riel et al., 2001). The diversification in services provided represent a set of elements that could positively impact on automated service satisfaction levels (Szymanski and Hise, 2000) and have a significant effect on the success of automated delivery channels (Hway and Ming, 2003). Therefore customer perceptions of the variety of services offered by e-learning providers will be considered as another predominant factor that could influence overall customer perception of automated learning service quality. So, the researcher promotes this dimension to be one of the determinants of e-learning service quality.

Perceived Reliability

Reliability as a dominant dimension in traditional service quality has been also cited as an important factor in e-service quality (Palmer, Bialey, and Faraj,1999; Wolfinbarger and Gilly 2002; Jun, 2001). In fact, Wolfinbarger and Gilly (2002) found that reliability is the first strongest predictor of customer satisfaction and the second strongest predictor of loyalty in e-purchasing. Reliability is defined as the ability to perform the promised service dependably, on time, and accurately (Parasuraman, et al. 1988). In another research by Yee et al. (2005), reliability dimension has been found to be the most significant predictor of customer satisfaction. Parasuraman et al. (1988) referred to reliability dimension as an important determinant of service quality. In a survey of service quality (Gorder, 1990; Perm, 2008) found reliability is the most important factor in determining service quality. Therefore, the researcher proves in this study that the reliability dimension is one of the determinants of e-learning service quality.

Perceived Responsiveness

This dimension includes quick response and the ability to get help if there is a problem or question related to the e-service offered. Parasuraman et al.(2005) proved that this dimension is significant and highly correlated with e-service quality. Therefore, responsiveness will be considered as another predominant factor that could influence overall perceived e-learning service quality.

Perceived Convenience

Over a decade, large market surveys as those performed by Howcroft, 2002; Laforet and Li, 2005; Freed, 2005; Shabbir, 2011 have reported that one of the main factors driving people to online services is convenience. Based on a survey of 1355 respondents, Lee et al. (2005) discovered that current and prospective adopters perceived convenience as a determinant of intention to adopt e-services. Convenience in e-learning refers to the capability to access e-courses at anytime and anywhere. In that context, the researcher strengthens this dimension to be one of the determinants of e-learning service quality.

Perceived Compensation

It is the degree to which the site compensates e-learning recipients for problems or mistakes occurred by the site. Parasuraman et al., 2005 proved that this dimension is significant and highly correlated with e-service quality. Therefore, compensation will be considered as another predominant factor that could influence overall perceived e-learning service quality. So, the researcher stands next to this dimension as one of the determinants of e-learning service quality.

PERCEIVED EFFICIENCY

This dimension introduced by Parasuraman et al., 2005. The efficiency dimension refers to the ability of the customers to get to website, search for information and logout with minimal effort. The effect of this dimension in overall perceived e-service quality was verified and the result was significant. Also, the study that conducted by Parasuraman et al., 2005 showed this dimension is highly correlated with e-service quality. Yet, the findings from the mentioned study explained that the efficiency dimension is the most critical one in e-service quality and has strongest influence not only on overall quality perceptions but also on loyalty intention. Hence, the researcher nominates this dimension to be one of the determinants of e-learning service quality.

Based on previous clarification, the researcher constructed the following framework to depict the proposed multiple-item scale for measuring e-learning service quality (E-Learning QUAL).
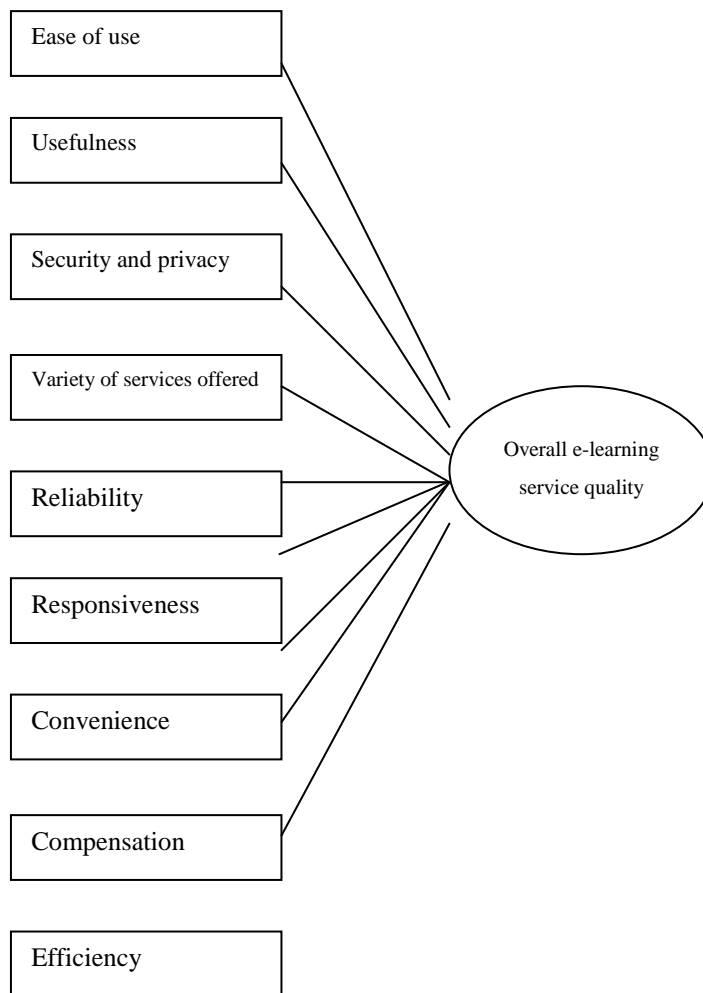
Figure 1 The Proposed scale for measuring e-learning service quality (E-Learning QUAL).

METHODOLOGY

This descriptive study was conducted in two stages. Stage one involved a pilot study which was conducted on 32 questionnaires to refine the data gathering instrument. In this stage, the following statistical procedures are executed.

Ensuring The Validity

Validity is the extent to which the questionnaire accurately measures what it is supposed to measure (Carmines and Zeller, 1979). Eriksson and Wiederscheim (1997) defined the validity as: "the ability of a scale or instrument to measure what is intended to be measured". In this research, the Content validity has been applied to ensure the validity of questionnaire. The pilot study was conducted with the reviewed version of the questionnaire among thirty two of different e-learning service recipients, who ensured that the questionnaire is appropriate and the

statements are generally understandable. Based on this information, the questionnaire is finalized.

Ensuring The Reliability

Reliability is the internal consistency of the questionnaire. In other words, it is the extent to which the questionnaire yields the same results on repeated trials under the same conditions (Carmines and Zeller, 1979). The questionnaire is considered reliable when the same or similar scores are obtained in repeated testing with the same group of respondents (Miller, 2005). In this research, Cronbach's alpha coefficient for internal consistency technique is used to ensure the reliability of questionnaire (Nunnally and Bernstein, 1994; Gliem & Gliem,2003). The results of Cronbach's alpha are depicted in table 1.

Table 1: Reliability test

Cronbach's alpha coefficient	N of items
.926	40

Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The closer Cronbach's alpha coefficient is to 1.0, the greater the internal consistency of the items in the scale (Gliem & Gliem, 2003).Values of 0.7 and above are usually considered adequate values of coefficient alpha (Nunnally and Bernstein, 1994), while Gliem (2003) mentioned that the alpha reliability coefficient of .8 is a reasonable goal. In our study, Cronbach's alpha reliability coefficient = .926 which means this questionnaire is highly reliable.

The Sample And Data Collection

After ensuring the validity and reliability of the questionnaire, the researcher starts Stage two which involved distribution of 180 surveys to a random sample of e-learning recipients. The researcher determined the estimated sample size by using the statistical application program EpiInfo. Respondent was asked to show the extent to which he or she believes his/her education or training institution has the feature described by statement on a five point Likert scale ranging from 1 indicating strongly disagree to 5 indicating strongly agree.

Analytical Approach

This technique considers the most appropriate method to statistically confirm the effect of proposed dimensions (variables) on overall e-learning service quality. Also, this technique is generally used to discover the strength and the direction of relationship between the dependent

variable (overall perceived e-learning service quality) and each one of the independent variables (the proposed quality dimensions of e-learning service).

FINDINGS

The results of correlation analysis are listed in table 2.

Table 2: Results of correlation analysis

		Dimension 1 Ease of use	Dimension 2 Usefulness	Dimension 3 security	Dimension 4 variety	Dimension 5 reliability	Dimension 6 responsiveness	Dimension 7 convenance	Dimension 8 compensation	Dimension 9 efficiency	Overall quality
Dimension 1 Ease of use	Pearson Correlation	1	.406**	.635**	.755**	.659**	.696**	.430**	.269**	.736**	.831**
Dimension 2 Usefulness	Pearson Correlation	.406**	1	.390**	.481**	.392**	.439**	.392**	.176*	.479**	.488**
Dimension 3 Security	Pearson Correlation	.635**	.390**	1	.624**	.538**	.666**	.502**	.489**	.618**	.827**
Dimension 4 Variety	Pearson Correlation	.755**	.481**	.624**	1	.731**	.721**	.379**	.314**	.742**	.841**
Dimension 5 Reliability	Pearson Correlation	.659**	.392**	.538**	.731**	1	.707**	.365**	.259**	.754**	.804**
Dimension 6 Responsiveness	Pearson Correlation	.696**	.439**	.666**	.721**	.707**	1	.489**	.261**	.788**	.854**
Dimension 7 Convenience	Pearson Correlation	.430**	.392**	.502**	.379**	.365**	.489**	1	.353**	.497**	.535**
Dimension 8 Compensation	Pearson Correlation	.269**	.176*	.489**	.314**	.259**	.261**	.353**	1	.259**	.487**
Dimension 9 Efficiency	Pearson Correlation	.736**	.479**	.618**	.742**	.754**	.788**	.497**	.259**	1	.873**

- The results reached about the correlation coefficient values show that there is a relationship between all quality dimensions and the overall perceived e-learning service quality.
- The relationship is positive which means the overall e-learning service quality increases when the quality of any one of these dimensions is increased.

- Dimension 9; efficiency is highly correlated with overall e-learning service quality, the correlation coefficient for this relationship is .873, followed by dimension 6; responsiveness .854, then dimension 4; variety of services offered .841, and the last is dimension 8; compensation .487

CONCLUSION AND STRATEGIC IMPLICATIONS

The goal of this study was to develop a comprehensive multiple-item scale for measuring e-learning service quality (E-Learning QUAL). The findings of this study have important implications for researches and also for education institutions that are currently offering such online services as well as education institutions that are planning to offer such services. This study provides further evidence on the dimensions which influence the e-learning service quality which are: ease of use, usefulness, security & privacy, variety of online services offered, reliability, responsiveness, Convenience, Compensation, and efficiency.

The results reached about the correlation coefficient values show that there is a relationship between each of proposed quality dimensions and the overall perceived e-learning service quality.

The study concluded that the nature of relationship between the overall perceived e-learning service quality and all quality dimensions of such service is a positive relationship. This means that the more values of these quality dimensions, the more value of overall perceived e-learning service quality.

Managers of e-learning and training institutions should pay their attentions and efforts to those dimensions only to yield the highest level of e-learning service quality.

THEORETICAL CONTRIBUTIONS

From a theoretical standpoint, the study presented contributed to the existing literature in a number of ways as listed below.

- The study makes a contribution to e-learning literature by providing insights on the factors that seem to affect e-learning acceptance. It outlines the main dimensions that increase the e-service quality in education and training institutions.
- Despite the growing role of technology in service delivery, the studies on self-service technology in general and education service in particular are needed. In addition, there are limited researches has been conducted on the issue of service quality in the context of self-service technology (Bitner et al.,2000; Selvan and Arasu, 2011). Therefore, the present study attempts to fill this theoretical gap.

- There are many studies identifying the key service quality factors in the traditional education environment, where the interaction between instructor and student is the main communication channel (Jun and Cai, 2001; Barbara, 2010). However, Researches on automated service are still in its infancy phase and there is no generally accepted theoretical conceptualization of e-learning service quality.

- Extensive researches on traditional service quality have been conducted during the past 20 years. In contrast, only a limited number of researches deal with how customers assess e-service quality (Parasuraman et al., 2005). So, this study attempts to fill the shortage in this side.

MANAGERIAL CONTRIBUTIONS

- The study includes implications for managers of education and training institutions showing the most important dimensions that achieve the highest overall perceived e-learning service quality in education and training institutions. These implications can be used as a guideline to improve the quality of this service.

- The proposed instrument (E-learning QUAL) for measuring e-learning service quality can be useful in the allocation of resources and in segmentation of customers. These reasons in combination make the findings of the research both timely and relevant.

- E-learning in Egypt have largely expanded, which paved the way to self-service channels. So, it is important to provide a study to correspond this conversion in the way of providing these services.

ACADEMIC CONTRIBUTIONS

- There is no a reasonable instrument can be accepted from all academics and practitioners to be used as a standard measure to measure the service quality of e-learning. Therefore, the findings of this study have a considerable value to the academic community in that it contributes to the growing understanding of learning perceptions for learning services carried over the internet. In addition, this study strives to develop a comprehensive instrument to measure the automated service quality of learning and training taking into consideration all dimensions that can influence the overall quality perceived by e-learning recipients.

- The study presented a comprehensive multiple-item scale for measuring e-learning service quality (E-Learning QUAL). This instrument embraces all quality dimensions should be included in such service.

- There are a few studies that have investigated the automated service quality attributes in education and training institutions. As a result, there is a need for further empirical investigation into the most pertinent factors to be used when measuring quality in such service. The e-learning service quality model presented in this study is designed to include all the possible factors that may shape the perceptions of e-learning recipients in education and training institutions.

SCOPE FOR FURTHER STUDIES

Nine dimensions for service quality that education and training institutions should consider when evaluating the quality of provided e-learning services. Researchers might search about additional dimensions or additional items to be taken in the consideration to precisely judge the perceived e-learning service quality.

In spite of the validity and reliability of the proposed scale used in the conducted study has been proven to be satisfactory, it should be accepted as a preliminary scale and should be tested further with higher number of respondents by employing a method such as online survey. A further study can be conducted to find the linkage between the quality dimensions of e-learning service that were suggested in this model and satisfaction of e-learning recipients.

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