

# The Perceived Contribution of E-learning to Learning Quality

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*Abstract:* This research had as main goal to detect the critical success factors that contribute to learning quality. Our research objectives were to investigate the potential of e-learning; to examine the features that could promote e-learning in Greek Universities; to study the profile of Greek students who would be interested in engaging in e-learning courses; to suggest how e-learning should be managed in Universities and to provide the opinion of Greek students for these factors. The objectives of this research were to verify if the factors for a quality e learning, which are mentioned in the bibliography, could be recognized by the sample as being significant. The results show that factors, such as the ones mentioned in this article, are significant enough to affect the e learning quality.

*Keywords:* E-Learning; e-learning quality; e-learning system's implementation; technology; conventional learning

## 1. Introduction to e-learning

E learning has recently become a promising alternative to the traditional classroom learning, thus, helping society move toward a vision of lifelong and on-demand learning [2]. It has become one of the fastest-moving trends and aims to provide a configurable infrastructure that integrates learning material, tools, and services into a single solution to create and deliver training or educational content quickly, effectively, and economically [3].

E learning is not the end to classroom training. In fact, classroom training will be redefined to focus on those aspects of learning that are best accomplished when there is the requirement for person-to-person interactions, identifying opportunities for improvement, team efforts, evaluative tasks, and the participation of experts with the group. E learning is coming to filling the gaps left from conventional learning. In our days, except from universities, more and more organizations offer e-learning courses [10].

The recent advances in computer networking technologies and the World Wide Web break the

barriers of access to education. The online-learning environment frees students from the constraints of time and place, and it can be made universally available. Additionally, the explosion of an older student population has resulted in demands for flexible schedules and off-campus learning opportunities [4].

E learning provides opportunities for students who may not be able to pursue an academic degree or participate in continuing education programs because of difficulty accessing a traditional educational setting [8]. Furthermore, people who may be interested in getting a degree but cannot afford it are now able to obtain it through e learning. Also, as e-learning class attendance is not required; there is a significant reduction in costs.

By using a variety of technologies, including correspondence education, distance education, virtual classrooms, computer-mediated communication, and computer-mediated instruction, e-learning connects students and faculty without the constraints of having to be physically present at a conference or on the university or college campus. E learning offers many distinct advantages to individuals who may find it

inconvenient or even impossible to attend traditional educational institutions because of location, work schedules, and/or increasing family obligations

The imperative today is not the mere access to knowledge, but timely access to relevant and useful knowledge. The real value of e learning lies not in its ability to train just anyone, anytime, anywhere, but in the ability to deploy this attribute to train the right people to gain the right skills or knowledge at the right time. Only then can e learning yield a justifiable return on investment (ROI) considering the costs incurred in implementing e learning [5].

## 2. Quality of e-learning

In an attempt to provide a pedagogical foundation as a prerequisite for successful e-learning implementation, Govindasamy T. discussed seven e-learning quality benchmarks namely, institutional support, course development, teaching and learning, course structure, student support, faculty support, and evaluation and assessment [5].

Many universities and colleges offering distance-learning programs are most commonly recognized for the quality of their traditionally based programs of study. However, the quality of a traditional academic program is not always reflective of the quality of a distance-learning program [8].

McKinney et al. proposed a measurement of web-customer satisfaction in which perceived performance was measured in terms of quality, including information quality and system quality [7]. DeLone and McLean proposed an information systems (IS) success model in which system quality and information quality are depicted as affecting user satisfaction and IS use [1]. In a re-specification of the DeLone and McLean's IS success model, Seddon modeled system quality, information quality and perceived usefulness as the major determinants of user satisfaction [11].

Wharrad H. et al supported that quality was determined for the technical aspects of the package by:

(a) Checking that the navigation through the package worked – this is important as it is possible for students to become 'lost' in a package and either become frustrated or inadvertently miss a section out; (b) ensuring high-quality graphical representation of images and figures; (c) allowing exit points for users who may wish to package later; (d) providing help facilities within the package; (e) piloting on a group of students and monitoring and responding to comments that are made by students [13].

According to Mills C. Andrew, Hrubetz Joan, the quality of instructional design depends on the fit between the design model and its 'intelligent' use by a designer. Designers entirely define and produce instruction, while lecturers and learners are consumers of rather alienating design products at the end of the chain. As far as quality of teaching is concerned, they also supported that it is required more than masterful

professors. In today's academic environments, leaders in educational institutions have responsibilities to supply fiscal and human resources that support settings conducive to learning and that instill human, educational and professional values. Recent technologic advances have shifted the capacities to deliver programs of study outside traditional classrooms. The World Wide Web can deliver courses, which are complex, multimedia, and interactive. Planning to offer programs online requires examining the organization's mission and philosophy as well as allocating human and fiscal resources to the project. As leaders implement innovations, such as distance learning online, they must address the organizations political challenges and cultural changes. When leaders seek to introduce innovation within their organizations, they must be prepared for excitement as well as anxiety and resistance. Leadership also requires evaluating performance and outcomes for quality education. Additionally, they strive to meet expectations of quality of all stakeholders [9].

The Institute for Higher Education Policy made a research for the "*Quality On the Line*" which identifies seven benchmarks that are considered essential to ensuring excellence in Internet based distance learning. The benchmarks are divided into categories of quality measures. These benchmarks distil the best strategies used by educational institutions that are actively engaged in online-learning, ensuring quality for the students and faculty who use it. These benchmarks may assist policymakers- such as college and university presidents, chief academic officers etc – as well as faculty and students, in making reasonable and informed judgments with regard to the quality of Internet-based distance education. These benchmarks were grouped into the following categories [6]:

(1) **Institutional Support.** This category includes those activities by the institution that help to ensure an environment conducive to maintaining quality distance education, as well as policies that encourage the development of Internet-based teaching and learning. It also addresses technological infrastructure issues, a technology plan, and professional incentives for faculty. (2) **Course Development.** This category is relating to the development of courseware, which is produced largely either by individual faculty or groups of faculty members on campus, subject experts in organizations, and/or commercial enterprises. (3) **Teaching/Learning Process.** This category addresses the array of activities related to pedagogy, the art of teaching. Included in this category are process benchmarks involving interactivity, collaboration, and modular learning. (4) **Course Structure.** This category addresses those policies and procedures that support and relate to the teaching/learning process. They include course objectives, availability of library resources, types of materials provided to students, response time to students, and student expectations. (5)

**Student Support.** This category includes the array of student services normally found on a college campus including admissions, financial aid, etc. – as well as student training and assistance while using the Internet.

(6) **Faculty Support.** Since not every faculty member possesses the skills and temperament for Internet based distance learning, this category addresses activities that assisted faculty in teaching online, including policies for faculty transition help as well as continuing assistance throughout the teaching period.

(7) **Evaluation and Assessment.** This category is related to policies and procedures that address how, or if, the institution evaluates Internet-based distance learning. It also includes outcomes assessment and data collection.

### 3. Future targets in the e-learning quality

On the basis of the results, and other experience from European Quality Observatory (EQO) project, the following guidelines should shape the quality of e learning by 2010 [12]:

(a) Learners must play a key part in determining the quality of e-learning services; (b) Europe must develop a culture of quality in education and training; (c) quality must play a central role in education and training policy; (d) quality must not be the preserve of large organizations; (e) support structures must be established to provide competent, service-oriented assistance for organizations' quality development; (f) open quality standards must be further developed and widely implemented; (g) interdisciplinary quality research must become established in the future as an independent academic discipline; (h) research and practice must develop new methods of interchange; (i) quality development by all those involved must be designed jointly; (j) appropriate business models must be developed for services in the field of quality.

In March 2001, the European Council set out three general goals (and ten specific targets) for the systems of general and vocational education to achieve by 2010:

(a) Improving the quality and effectiveness of education systems in the European Union; (b) making access to general and vocational education easier for all; (c) opening up systems of general and vocational education to the world.

(1) Learners must play a key part in determining the quality of e-learning services; (2) culture of quality; (3) quality development as a responsibility of education policy; (4) quality development as the norm; (5) quality services; (6) open quality standards; (7) quality research as an academic discipline; (8) promoting the transfer of research; (9) integration of all stakeholders; (10) development of business models for services in the field of quality.

The following table shows the factors that affect quality of e learning

### 4. Factors that affect quality of e-learning

Factors	Affects
1. Institutional support	<ul style="list-style-type: none"> <li>▪ Proper activities and policies in order to achieve quality e-learning</li> <li>▪ Existence of the necessary technology plan</li> <li>▪ Creation of professional incentives for faculty</li> </ul>
2. Course development	<ul style="list-style-type: none"> <li>▪ Development of necessary courseware</li> <li>▪ Collaboration with commercial enterprises if that is necessary</li> </ul>
3. Teaching /Learning process	<ul style="list-style-type: none"> <li>▪ Interactivity</li> <li>▪ Collaboration</li> <li>▪ Modular learning</li> </ul>
4. Course structure	<ul style="list-style-type: none"> <li>▪ Availability of library resources</li> <li>▪ Immediate response to students</li> <li>▪ Recognition of students' expectations</li> </ul>
5. Student support	<ul style="list-style-type: none"> <li>▪ Student training</li> <li>▪ Student assistance</li> </ul>
6. Faculty support	<ul style="list-style-type: none"> <li>▪ Existence of policies for faculty transition from conventional to e-learning</li> <li>▪ Constantly assistance throughout the teaching period</li> </ul>
7. Evaluation and assessment	<ul style="list-style-type: none"> <li>▪ Data collection</li> <li>▪ Assessment outcomes</li> </ul>

Table 1

### 5. Research methodology

A questionnaire was developed, tested and used to collect data. The sample consists of 412 students from the Athens University of Economics and Business (AUEB) and Technological Educational Institute (TEI) of Chalkis, in Greece.

412 out of 460 questionnaires were valid for further analysis. Thus, giving us a response rate of 89,57%.

### 6. Data analysis

The questionnaire consisted of two sections. The first were as the questions that help determine the students' profile. The second section included the questions that

will permit us to investigate the critical success factors of e learning that contribute to learning quality.

### 7. Research objectives

The research had as main goal to detect the critical success factors that contribute to learning quality. The research objectives follow below:

(1) To investigate the potential of e-learning; (2) to examine the features that could promote e-learning in Universities; (3) to study the profile of Greek students who would be interested in engaging in e-learning courses; (4) to suggest how e-learning should be managed in Universities; (5) to provide the opinion of Greek students for these factors.

Except for the factors that were mentioned in bibliography, there are some other factors that are affecting e-learning quality found. More specifically:

(a) As expressed by the students, the change from the existing learning habits is an important factor. Additionally, it is important to shape a personalized teaching environment. Both of these factors are depended on students' predisposition. The research shows that the larger percentage of the students is not ready to go through this trial. (b) The relationship that will increase between students and their lecturer during an e-learning course is another important factor and could affect students' motives for research and communication between fellow students as well. (c) Except from the course structure, student support that it is important to know both the demands and the difficulties of each e-learning course before hand. (d) Furthermore, they found it important to know clearly, before hand, the clarification of the course's objective. (e) The constant training and preparation of the lecturers for the course they will teach is another important factor. (f) The time needed for the necessary educational material to be delivered is according to students, an important factor as well. In addition, the updating of this educational material was measured as an important factor. (g) They also believe that the use of the proper applications, which will help them to attend more easily their courses, is necessary for a successful e-learning implementation. (h) The possibility of students expanding critical thinking, in order to search on the web either for exercises, for articles or for further knowledge, could positively affect their participation to an e-learning course.

In the following table, are presented in-group the factors that were mentioned in the research and were found to affect e learning quality.

and students					
Demands from the lecturers	1,7	4,8	37,6	43,1	12,7
Knowing the characteristics of an e learning course	1,0	5,4	38,2	44,2	11,2
Differentiation in learning way	4,7	10,0	36,8	34,0	14,5
Collaboration and communication between fellow students	3,3	13,2	35,4	36,2	11,9
Deliverance and update the necessary educational material	0,6	2,5	26,2	46,3	24,5
Motives for research via internet	0,9	3,8	26,3	48,6	20,2
Reducing costs and risk of loss lessons	1,5	4,8	28,6	30,6	34,5
Access and e library enrichment	0,7	1,4	17,1	41,7	39,0
Use of multimedia applications	0,7	2,2	22,6	44,0	30,5
Students' active participation in courses	4,7	17,4	39,6	29,2	9,1
Use of personal computer	0,5	1,5	10,3	34,0	53,7
Providing secure communication with the University as well as the lecturers and fellow students	1,7	5,7	31,8	40,4	20,4
Finding immediate problems' solution	5,7	8,1	35,7	35,2	15,3

Table 2

### 7.1 Factors that affect e learning quality

	Strongly Negative	Negative	Neutral	Positive	Strongly Positive
Communication and relation between lecturers	3,1	11,2	33,8	40,4	11,5

### 8. An overview for e-learning

This research consists of the definitions of e learning according to the provided bibliography. As mentioned before, e learning has become a promising alternative to the traditional classroom learning, helping society move toward a vision of lifelong and on-demand learning.

From another point of view, e-learning can be viewed as the delivery of course content via electronic media such as Internet, Intranets, Extranets, Satellite Broadcast, audio / video tape, interactive TV and CD ROM. Additionally, e-learning has been viewed as synonymous with web-based learning, Internet based training, advanced distributed learning, web-based instruction, online-learning and open / flexible-learning. E-learning has become one of the fastest-moving trends and aims to provide a configurable infrastructure that integrates learning material, tools, and services into a single solution to create and deliver training or educational content quickly, effectively, and economically.

## 9. Conclusions

In this research, an attempt was made to determine the factors that affect e learning quality. Firstly, these factors that are reported in the bibliography are mentioned in this article. Secondly, a personal research consisted of a questionnaire was handed out to a significant number of third-level-education students in Greece and data was collected.

The objectives of this research were to verify if the factors for quality e learning, which are mentioned in the bibliography, could be recognized by the sample as being significant. The results show that factors, such as the ones mentioned here bellow, are significant enough to affect the e learning quality:

(1) The necessary technological infrastructure. (2) The lecturers' abilities, which should be implemented and are necessary for delivering quality e-learning courses. (3) The intensive need for collaboration between fellow students. (4) The implementation of the necessary educational material that could be used for an e-learning course. (5) The electronic libraries' enrichment and databases access ensuring could promote students to achieve more motives for research and knowledge.

The research led us to record some other important factors as well as some important conclusions. It was detected that it is difficult for students to change learning habits and that e learning cannot affect enough students' allotted time for reading. Students also believed that a necessary presupposition for a successful e-learning implementation is the constant communication, feedback and encouragement from their teachers and the collaboration between them.

An important fact, which has arisen from the research, is that students believed that the teachers' well preparation before the beginning of an e-learning course is a significant factor. Additionally, it was also considered significant that through e learning, students are led to evaluate critical thought.

According to the research, e learning could be an alternative /additional way of conventional learning, which might fill the gap of the existent way of learning. Students, who participated in this research, even if they

had no experience in e learning, look ready, if given the opportunity, to embark in such an experience.

Furthermore, the research results show that the implementation of an e-learning system should be carried out very carefully; recognizing that the students' demand as well as the lecturers will increase.

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