

Assessment of E-learning Systems

Dilek Karahoca, Miray Şahin, Adem Karahoca, Ali Güngör

Abstract: Nowadays higher education institutes have to implement distance education services to support online registered students more convenient ways. Online education services are cheaper, effective, and usable when compared with blended and face to face learning environments. E-learning systems have to include instructional design based content and web site usability to trigger students. Social networks are enforcing these online learning technologies. This study show us the observations made and experience gained from two e-learning websites of two universities by taking into account to the students' behaviors and usability habits. Concludes with a result of surveys according to quality metrics and other questionnaires which will be guide for how to define, assess, develop and promote e-learning systems.

Key words: Value of Online Learning Systems, Assessment of E-learning Systems, E-learning Success, Distance Learning, Information Systems Success Model.

INTRODUCTION

E-learning is a technique of electronic supported learning and teaching, which help us to support learners to convey information by individual experience, practice and knowledge [1].

E-learning portals must have some features for users, such as helpfulness, effectiveness, satisfaction for learning, affectiveness and learnability which are indicators of usability of software systems. Users have to learn basic information technologies, for example, e-learning, distance learning, communication technologies, discussion board, teamwork, group presentation, online quizzes and exams. These materials help us to improve usage of the e-learning systems.

E-learning systems can be networked and includes computer-based learning, distance learning, virtual classrooms etc. All materials can be delivered through the Internet, intranet/extranet, audio or video, presentations and in different file formats. It can be self paced or instructor led and includes media in the form of text, image, animation, streaming video and audio [2].

E-learning systems use communication technologies that are generally categorized as asynchronous or synchronous. Asynchronous activities use technologies such as blogs, and discussion boards. The idea here is that participants may engage in the exchange of ideas or information without the dependency of other participants' involvement at the same time. Electronic mail (email) is also asynchronous. Synchronous activities involve the exchange of ideas and information with one or more participants during the same period of time. A face to face discussion is an example of synchronous communications. According to asynchronous activity of discussion board which is a place where students focused on a certain topic usually generated by instructors this could be a question about that weeks lecture material, which you can freely send your own opinion about topic using a form according to discussion board platform [2].

As explained by Lee-Post (2007), the success of e-learning can be asses by using, learning styles, learning environment, learning outcomes, teaching practices and cost-benefits [3]. The most comprehensive "best practices" of e-learning are Pittinsky and Chase's 24 benchmarks in seven areas: *institutional support, course development, teaching/learning, course structure, student support, faculty support, and evaluation and assessment* [4].

E-learning system characteristics are the features associated with e-learning systems' quality of technical support, interaction with professor, quality of course content, learner's comfort with technology. Consequently, learners' value items are defined as

measures of the importance of enduring core beliefs concerning each characteristics of an e-learning system when learning online.

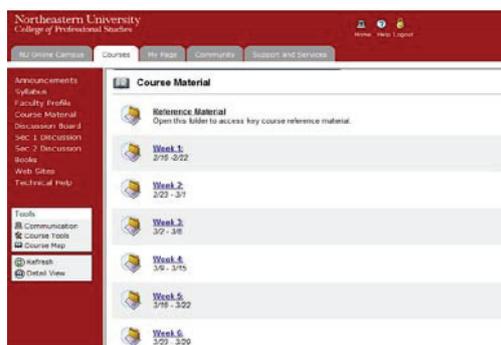


Fig.1. Online Portal of Northeastern University

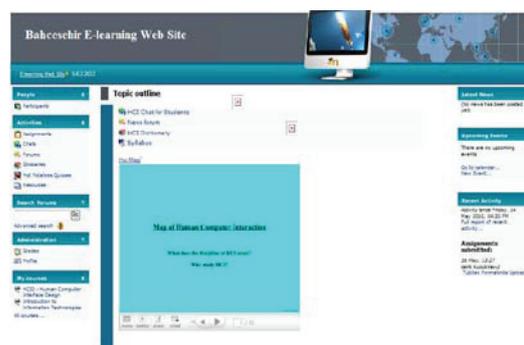


Fig.2. Online Portal of Bahcesehir University

The main goal of this study is for comparing usability of the free open source (FOS) Learning Management System's (LMS) with commercial one. Moodle and Blackboard_WebCT LMSs are well known platforms which are implemented and used in higher education. But main issue is related with e-learning system quality. In this study, usability indicators are investigated to show that platforms and its tools are not the fundamental issue; main point is users and their motivations.

METHODOLOGY

Discount usability is one of the important methods to find the usability handicaps of any web site by cost effective way [5]. With 16 expert users, %95 usability handicaps may be obtained. For this reason, the 14 participants (ages of 2 users 20+, 9 users 25+ and 3 users 30+), 8 boys and 6 girls, were involved in to the comparing two different universities e-learning systems (Fig.1 and Fig.2). In this study, participants joined to the project by using the universities e-learning sites for a single week of lessons. After taking the lessons they answered the survey questions which evaluate sites' efficiency, learnability, helpfulness, effectiveness and satisfaction.

E-learning systems should be designed according to e-learning success model which is adapted from DeLone and McLean's information systems success model [6]. In system design phase system should be divided into three categories. First one is system quality should be easy-to-use, user friendly, secure, fast, responsive. Second one is information quality which should be well organized, effectively presented, clearly written, useful and up-to-date. Lastly service quality must be prompt, responsive and fair. These design steps uses power point slides, audio, script, case studies, assignments, exams, quizzes, discussion boards. As a result of these our systems has some advantages and disadvantages.

E-learning systems advantages are:

- Easy Communication: Instructors and students can share their knowledge across each others.
- Flexible and convincing and increases continuity: The lessons in e-learning systems are available at anytime a user wants.
- Improving performance: In an analysis in Education Departments in America higher education students who use online learning lessons and systems generally performed better than normal lessons.
- E-learning lessons are cheaper than normal lessons.
- Reducing overall training time

- Remaining in one location (home, office, and airport) with no need to travel.
- Participate in class activities when convenient
- Accessing courses from where ever you want.
- E-learning systems disadvantages are
- Isolation
- Lack of contact
- Quality concerns
- Technology dependence

FINDINGS

Sociability and responsibility tests are applied to all subjects. Interestingly all subjects are sociable and responsible business men and women.

According to the first survey, %72 of people strongly agree that Northeastern University (NU) e-learning site is easy to use. But, users strongly agreed that %57 of Bahçeşehir University (BSU) e-learning site is easy to use (Fig.3).

Users are strongly agreed that %93 of NU e-learning site and BSU e-learning site are equally ease to use because of the left hand navigation of the quick link menus.

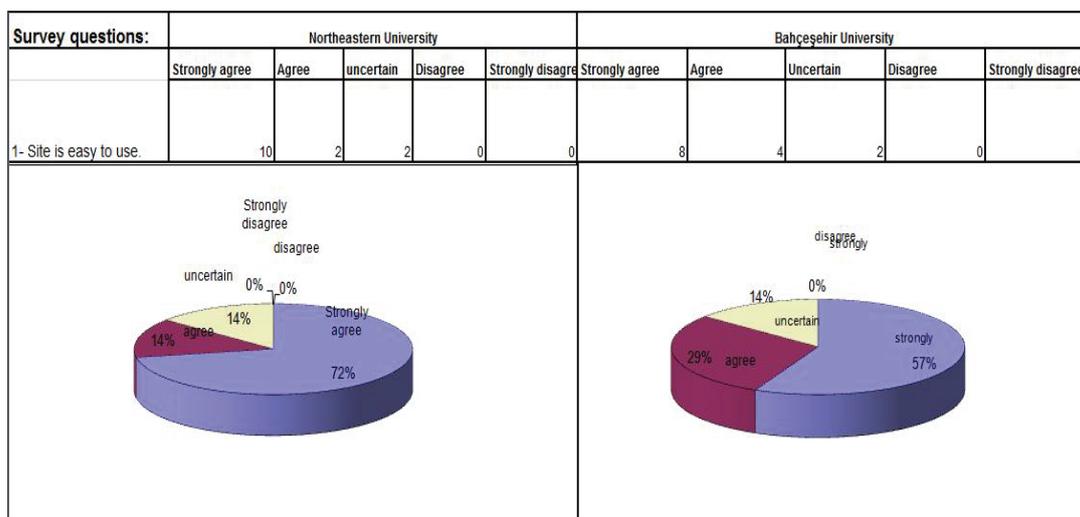


Fig.3. E-learning Site is easy to use; %72 for NU and %57 for BSU

E-learning site has links to quick access to the main menu, %86 of users strongly agreed with this issue for NU and %71 for BSU.

E-learning sites have visible news, announces in NU web site (%93 users strongly agreed), and BSU web site (%36 users strongly agreed).

E-learning sites have useful links and layers, %72 of NU and %64 of BSU strongly agreed for this statement.

E-learning web sites investigated based on four indicators; user satisfaction; continuity, reliability and supportive tools and applications (Fig.4). Satisfaction parameter explores users' pleasure to the e-learning systems. Continuity indicator surveys to find out the future intentions to the e-learning studies. Reliability investigates the content adequacy, information accuracy, content reliability, helpfulness of course web site, learning support, enriching learning experience, and service provided by the course websites. And also supportive tools and applications usage is also investigated.

Control Variables			Satisfaction	Continuity	Reliability	Supportive Tool
AGE & GENDER & PROFESSION	Satisfaction	Correlation	1,000	,637	,792	,687
		Significance (2-tailed)	.	,035	,004	,020
		df	0	9	9	9
	Continuity	Correlation	,637	1,000	,539	,315
		Significance (2-tailed)	,035	.	,087	,345
		df	9	0	9	9
	Reliability	Correlation	,792	,539	1,000	,604
		Significance (2-tailed)	,004	,087	.	,049
		df	9	9	0	9
	SupportiveTool	Correlation	,687	,315	,604	1,000
		Significance (2-tailed)	,020	,345	,049	.
		df	9	9	9	0

Fig.4. Correlations between satisfaction, continuity, reliability and supportive tool

CONCLUSIONS AND FUTURE WORK

In this study, the value of e-learning systems of Northeastern and Bahçeşehir University online portals showed that student satisfaction with e-learning overall quality affects continuity and reliability. By using supportive tools like presentations, discussion boards, teamwork affects student satisfaction and retention and loyalty, measured by willingness to recommend the program. An analysis of the contribution of e-learning services to student satisfaction with e-learning overall quality revealed that students valued mostly the simple designed services. At the same time this project helps us to see the power of Internet-based technologies to enhance learning by using an e-learning success model to guide the design, development, and delivery of e-learning systems through different factors. In this study, main primary focus is to understand of how to define, assess, and promote successful e-learning systems. As a result, e-learning portals when supports learners via high communicative technologies, by flexibility, continuity, and easily accessible it can gain success from the technological way. According to the user requirements base designed e-learning environment, system performance and user satisfaction affected positively. Content differences of e-learning courses are also changes the structures of the instructional design elements.

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ABOUT THE AUTHORS

Dr. Dilek Karahoca, Department of Software Engineering, University of Bahçeşehir,
Phone: +90 212 3810587, E-mail: dilek.karahoca@bahcesehir.edu.tr

Miray Şahin, Graduate student of ITSM Program, University of Bahçeşehir,
miray.sahin@stu.bahcesehir.edu.tr.

Assoc.Prof. Adem Karahoca, PhD, Department of Software Engineering, University
of Bahçeşehir, Phone: +90 212 3810560, E-mail: akarahoca@bahcesehir.edu.tr

Prof.Dr. Ali Güngör, Phd, Department of Science, University of Bahçeşehir, Phone:
+90 212 3810790, E-mail: aligun@bahcesehir.edu.tr