

Key Factors in Determining Students' Satisfaction in Online Learning Based on 'Web Programming' course within Zarqa University

Dr. Ahmad Qasim AlHamad, Dr. Khaled Issa Al Qawasmi
Zarqa University, Zarqa, Jordan
aqd14@yahoo.com, kqawasmi@zu.edu.jo

Asma Qasim AlHamad
Dammam University, Dammam, KSA
asma_toubassy@yahoo.com

Abstract

The world of education has changed. The latest developments in the networking technology and the Internet are allowing students to be more flexible as to the time and place of learning in ways that was unimaginable before. The growth in use of networked technologies provides educators with mechanisms to add value to learning experiences where learners and instructors are geographically separated. The aim of this study is to evaluate the student's perception and satisfaction of online learning course based on a course "Web Programming" course within Zarqa University. A questionnaire of 20 questions is delivered to 22 undergraduate students from the Internet Technology Department in Zarqa University. Three group interviews are undertaken with them to identify further issues. The results drawn from this study may help in better understanding of students' needs in an online course.

Keywords: LMS , E-learning, Online discussion, Students' perception, Online evaluation, Students' interaction.

Introduction

Over the last decade, there have been many changes made within the higher education system. These changes include the creation of new universities, the growth in the number of students, and creation of new learning systems. Until the late 1980s, the traditional delivery system for higher education has been a classroom setting with a professor giving a lecture and students listening and writing notes. The essential learning element in this medium is the interaction. The new inventions in communication devices and the advances in information technology (IT), opens the door for new educational delivery methods like: distance learning and online learning. The reasons for using e-learning by instructors in their courses are probably as diverse as the resources that are available through this medium. E-learning supports a class-based learning group; especially, if the learning process engages in discussions between individuals and groups [1].

Students in an online learning environment are actively involved in the learning process, while teachers work hard to establish trusting relationships with their students, and provide a structured assessment tool that will help students enhance their performances [2]. Helping students to prepare for online courses and course exams could be achieved by different ways like: providing online

"This research is funded by the Deanship of Research and Graduate Studies in Zarqa University /Jordan"

material for students to study for the exam, which cover the needs of each student [3]. Online assessment could serve a multiple purpose: assessing students learning for course material and assessing students' computer skills [4].

E-learning changes and transforms teaching and learning relationships, opportunities and outcomes [5]. The use of IT will require new skills to be acquired by both tutors and students which, consequently, will mean a transformation in the traditional roles [6]. Another ethical debate that will be of interest in any e-learning system is the traditional interaction and communication between teachers and learners that will be affected by adopting the Information Technology. The teacher's role changes from that of the authority to that of the mediator, of the moderator of discourse.

Many educators want to take advantage of the benefits offered by Internet and new technologies like e-learning systems to support their teaching activities [7]. But why were the student's perceptions chosen? Perceptions were chosen because of the difficulties of measuring learning. Measuring learning must have a control and experimental group over time in a controlled setting. In addition, Student's perceptions are considered to be very important, because many times decisions are being taken based on these perceptions. Finally, investigating student's perceptions of online discussions might indicate a relative advantage when compared to the traditional teaching methodologies.

The course 'Web Programming' was selected because it is a university requirement for all students at the IT College and, also, this course can best suit the idea of determining the students' satisfaction of an online course. Zarqa University is one of the first universities in Jordan that adopts the e-learning system, Learning Management System "MOODLE" in its system. The IT college students were chosen because they are the most skilled students in the university in using computers, so if the study gives negative signs towards the adoption of the perception of online learning, that means that the university should be very careful in implementing the designing of the online learning as an idea, before studying all the issues and solving all the problems that surrounds the topic. And if the study gives positive signs, then it could be modified for students from other colleges until we can measure the perception of students towards the idea of online learning.

The main objectives of this study are to determine the impact of student's perceptions of online learning and constructing their knowledge. This study also seeks to examine the impact of student's opinions on the design of the course homepage. Finally, it looks to explore the technical issues associated with the creation of e-learning systems.

Design Principles for Online Courses in an E-learning Environment

Supporting quality learning and teaching methods has been one of the critical factors in designing an online course. The rapid development of the information and communication technologies initiates a shift from the traditional way of learning into new ways like e-learning.

One of the major problems the student may face in a distance learning environment is the sense of feeling isolated from other students [8]. Designing interactive learning courses could support the learning process [9]. The e-learning environment can offer the students a sense of communication and connection with other students and tutors through a community forum, a space for debates and a classroom forum. E-learning environment also offers the students the chance of constructing social interaction and establishing human collaboration networks for the rest of their studies [8].

One of the most important advantages of e-learning is its flexibility. It allows the instructors to design the course in a way that meets individual students' needs [8]. It offers the students the opportunity to work alone, to correspond directly to the instructors and to interact and work with classmates in group-conferences. Also, it gives the instructors the opportunity to design independent learning or work groups, according to students' needs [10].

Richardson [11] cited Svensson as stating; "students adopting a holistic approach to their normal studies related new material to their own knowledge and experience". In an e-learning environment, it is very important to know how, when and where, the knowledge is being constructed in a multiple media and resource-based environment. The instructor can also indicate the students' learning styles through monitoring the type of application they are using and the type of materials they download from the Internet; such as text, audio and video files. Although it is an advantage that the student has time to respond to the instructor or their peers in a discussion conference; it can turn to a disadvantage if students are so slow in responding to others. In this case, it will be the instructor's job to encourage the student to participate and interact with others in the class.

Harasim [12] mentioned three general principles for the design of an online course in an e-learning environment:

1. Group conversation: it is very important to think of a networking design in terms of group of people; the most important power of electronic networking is the ease of sending a message to a group of learners who are conversing and working together to solve a common task. Group or team working is regarded as a sign of flexibility, fast responses and creativity.
2. Local Communication: one of the factors that influence the educational process is cost. Cost affects the decision making in designing a course for an e-learning environment. It is very important to reduce the use of phone lines, and data communication networks. Some applications are not used in education because of its cost, e.g. video conferencing. One of the solutions for reducing the cost is the use of e-mail instead of phone lines to make contact between students and their instructors. In addition, the instructors should encourage the use of

Internet resources; Internet would make e-learning environments an important means of delivering quality information to students at low cost.

3. Diversity: in designing a networking system, it is very important to take into consideration that the student is involved in communicating with a variety of people using a variety of systems. Therefore, it is essential to design an application that can communicate with other systems, so the delivery of the message will happen without errors. Students will be exposed to many technologies; such as telecommunication, multimedia, and productivity software. So it is important to provide the students with a general description and training for these technologies.

Data Analysis

Data analysis is an important part of any research and it is; therefore, extremely important that the researchers not only understand the underlying principles of data analysis but, also, has the skills to apply the appropriate statistical tests. As with gathering data, an important concern is how long the data will take to analyze. The process of analyzing and categorizing qualitative data can be very time intensive. Transcription, (which could be considered to be part of either data capture or analysis), also needs to be considered. Data can be presented in a range of formats; it depends on the type of data gathered and the type of software used to analyze these data [13].

In this study, software called Statistical Package for Social Science (SPSS), is used to analyze the questionnaire that was delivered to students; this software is used to examine relationships between variables and to examine the difference between groups/conditions. In the results, the researchers will try to find some relations between questions.

Results

As mentioned previously, the methods for collecting data encompassed a questionnaire and group interviews. The questionnaire was distributed to 22 undergraduate students from the Internet Technology Department in Zarqa University. Group interviews were conducted with the same students after dividing them into three groups, (The first two groups with 7 students and the last one with 8 students), to gain more comments and opinions about the online discussions.

Summary of the Questionnaire

The questionnaire included 20 questions. The main aim of the questionnaire was to determine how the students perceive the value of the online discussions (chat groups) within MOODLE, and how they described the experience of working with such a system within a specific course. All participants completed the questionnaire and no one left any question unanswered. The questionnaires included (yes-no), multiple choice, and scale questions. In some of the questions (open-ended), a space was provided for students to answer the question if they think there is another answer to the question, but it was noticed that only one student filled the open-ended questions.

Combined views from the related work [8] and, results from the questionnaire and group interviews, strongly suggest that online learning enhances and complements face-to-face learning but, will not replace it. The two types of learning have multi uses; face-to-face learning is used in places where online learning is not applicable and vice versa. In the first two questions of the questionnaire, the purpose was to understand how students think of online learning and face-to-face learning. Most of the students - nearly 82% for question 1 and nearly 77% for question 2 - agreed on the value of online learning in enhancing and complementing face-to-face learning.

Students in an online course can discuss the content and the process of learning in that course; they can also make suggestions for changing them, rather than following a fixed syllabus and schedules. This was the purpose of question 3, and 10. In question 3, more than half of the participants, nearly 59%, prefer to have the material presented in PowerPoint format. Some students, nearly 23%, prefer to have the material in audio-video format. It could be argued that the percentages did not reflect a real indication about the best file format to be used in any online course, but these percentages are best suited to the 'Web Programming' course, i.e. some applications that may suit some courses may not suit others. Harasim [12] stated, "In the most successful online course, students assume some of the roles that traditionally belong to the instructor".

In identifying the way materials and resources should be presented, it has been found in question 5 and 8 that many of the students, nearly 73%, preferred the material to be presented by topic or, full in advanced for the entire course and by topic or lecture for the resources. The material can be presented in four ways: by topic, lecture, week, or full in advance. Students can have more than one topic in each lecture and more than one lecture in each week. The results of these questions give an indication that the way the material and resources are presented now "full in advanced" could be revised at least for the resources.

One of the most important advantages of e-learning is its permanence. So providing the material for a specific time could cancel this important advantage, especially in distance learning, there were students that need more support. Question 6 was designed to examine this facility. The majority of the respondents with 82% agreed on the need for permanence of material in the course homepage, which may help them in doing their assignments.

Much of the related work agreed that e-learning is an interactive environment [8, 10, and 12], but on the contrary, the findings discovered that students did not use the feedback or, frequently asked questions (FAQs) links, which were presented in the course homepage and it noticed that nobody (0%) used these links.

Designing an e-learning system is very important, because it affects the way in which students react with the system. It was noticed in question 9 and 11 that most of the students with nearly 91% described the navigation through the course homepage to be easy, and half of them accessed the homepage on weekly basis. This supports the fact that the more the material is presented in a good manner; the more the students will find it interesting and will interact with it. Harasim [12]

mentioned two important things that should be taken into consideration when designing a computer course system; understanding the type of system used in the learning process and the student's needs. Also, the design issue could be applied to question from 12-15 and 19, in which students described some useful and useless links; how these links are presented, and whether it helped them in doing their assignments and course work.

Active learning is one of the characteristics of a good e-learning system. Harasim et al [14] mentioned that the learner in such an environment has to make a comment in order to be seen as a present. After the idea is presented to the group, then the interaction will happen and after the idea is discussed among the group, then it could be challenged or expanded by learners in the knowledge building process. In agreement with the related work, the findings of questions 17, 18, and 20 described the process of commenting on others in details. For question 17, nearly 36% of respondents found the practice area in the discussion link helpful, while half of the students were neutral. The rest did not find it very helpful. In terms of commenting on others work in question 18, nearly 59% of the respondents found commenting on others as an important issue to compare their understanding with others. Nearly 36% of them found it helpful to see how others are thinking, and only one of the respondents did not see it helpful at all. The previous question leads to question 20, which discussed the process of criticism. The majority of the respondents (82%), agreed that students should accept criticism as a part of evaluating his/her work, since it is displayed in the discussion link. Some of the respondents mentioned that they were unwilling to criticize other students, and only one of them mentioned that it was difficult to criticize others. This question has a limitation, because students have been asked to tick one answer where they can choose more than one.

Summary of the Interviews

The main aim of the interviews was to have more comments and opinions for the questions being asked in the questionnaire. The main issue that all the students agree on, is that online learning enhances and complements the face-to-face learning, but should not replace it. A long process in changing a lot of things in our lives, including the techniques used in learning has to occur before that can happen. But still as humans, we prefer to study in a full interactive environment, like the face-to-face environment. Online learning also supports interactive learning, and in some cases, it is the only solution, e.g. distances learning.

Students emphasized the use of some tools like audio, video, graphic, animation, and Power Point files in any online course. Finally, students listed some problems they faced when they used MOODLE, such as, the difficulty of printing and some files and links weren't working.

In the group interviews, students mentioned that online learning cannot take the place of face-to-face learning, as it will be a long process, but online learning has a future because people will have the initiative to stay at home and study like in distant learning

Also, they mentioned that face-to-face learning is still a good way of teaching because students may get more support from instructors and there is more chance to interact with students from other cultures and countries". In the literature review Asensio [8] stated in a survey that compares the two systems, "in the face-to-face environment it appears that the participants valued the social dimension of seeing each other, of chatting, of laughing and the immediacy of communication". While on the other hand in the same survey for the online participants, Asensio [8] stated, "the participants reported that the discussions were more reflective, and the dialogue [is] richer than in the face-to-face settings".

The last point the students mentioned is the technical problems they faced when using MOODLE. One of the students mentioned the links problem, which were not working properly. Also, some discussed the technical support is not sufficient; one student mentioned that there was no introductory lecture or even manuals to describe the MOODLE as an e-learning system.

Conclusions

In this study, the main aim was to evaluate the students' perception of online discussion. The results of a questionnaire with 22 students and three group interviews indicated that students believe that online learning can be used to enhance and complement the face-to-face learning, but not to replace it. This study indicated that the students' perception of online learning within the "Web Programming" course has significant, relative, advantage than traditional learning (classroom).

For the online discussions, the results of this study indicated that students get benefits from online discussions by getting the chance to see how others are thinking and to compare their understanding of a specific subject with others. Also, the results indicated that students accepted criticism of their work as a part of the learning process. E-learning is expected to be the future learning environment. So as universities move towards online courses, administrators need to consider student perceptions.

References

- [1] Haughey, M., & Anderson, T. (1998) networked Learning: The pedagogy of the Internet. Montreal: Cheneliere/McGraw-Hill.
- [2] Suzanne Young, " Student Views of Effective Online Teaching in Higher Education,". The American Journal of Distance Education, University of Wyoming, 20(2), 2006.
- [3] R. Schoenfeld, S. McConnell, and T. Schultheiss, "Use of interactive online histopathology modules at different stages of a veterinary program," Journal of Veterinary Medical Education, 30(4), 2003, pp 364-371.
- [4] B. Moskal, and J. Leydens: Practical Assessment, Research & Evaluation, 7(10). Retrieved November 4, 2008: (2000): Scoring rubric development: validity and reliability., Caulfield: Victoria, <http://www.avetra.org.au/>, PP (2002).

- [5] Nagi, K. (2006): Solving Ethical Issues in e-Learning. Third International Conference on e-Learning for Knowledge-Based Society, August 3-4, 2006, Bangkok, Thailand.
- [6] Stahl, Bernd Carsten [2002a], "Ethical Issues in E-Teaching- a Theoretical Framework." King, G. et al. [2002], Proceedings of INSPIRE VII, Quality in Learning and Delivery Techniques, Limerick, Ireland, 25-27.03.2002, The British Computer Society, pp. 135 -148.
- [7] Ryan, S., Scott, B., Freeman, B., & Patel, D. (2000). 'Meta-recommendation Systems: User-controlled Integration of Diverse Recommendations. The virtual university: The Internet and resource-based learning'. UK, London: Biddles Ltd.
- [8] Asensio, M, Foster, J., Hodgson, V.H & McConnell, D. (Eds). (2000). Innovative approaches to lifelong learning and higher education through the Internet: Proceedings of the second international conference jointly organised by Lancaster University and the University of Sheffield held at Lancaster University, April 17th –19th 2000.
- [9] Percival, F. Land, R, & Nevill, D.E. (1996). Computers assisted and open access education. UK: Kogan Page Limited.
- [10] Haughey, M., & Anderson, T. (1998) networked Learning: The pedagogy of the Internet. Montreal: Cheneliere/McGraw-Hill.
- [11] Richardson, J.T.E. (2000). Researching student learning: Approaches to studying in campus-based and distance education. USA: SRHE & Open University Press.
- [12] Harasim, L. (1990). Online education: Perspectives on a new environment. USA: Library of Congress Cataloging-in-Publishing Data.
- [13] Harvey, J. (1998). Evaluation cookbook. UK: Heriot-Watt University.
- [14] Harasim, L., Hiltz, S.R., Teles, L., & Turoff, M. (1995). Learning networks: A Field guide to teaching and learning online. USA: Library of Congress Cataloging-in-Publication Data.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.