A Study on Students' Views About Blended Learning Environment

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ABSTRACT

In the 21st century, information and communication technologies (ICT) have developed rapidly and influenced most of the fields and education as well. Then, ICT have offered a favorable environment for the development and use of various methods and tools. With the developments in technology, blended learning has gained considerable popularity in recent years. Together with the developments it brought along the description of particular forms of teaching with technology. Blended learning is defined simply as a learning environment that combines technology with face-to-face learning. In other words blended learning means using a variety of delivery methods to best meet the course objectives by combining face-to-face teaching in a traditional classroom with teaching online.

This article examines students' views on blended learning environment. The study was conducted on 64 students from Department of Computer Education and Instructional Technologies in 2005 – 2006 fall semester in Instructional Design and Authoring Languages in PC Environment. The results showed that the students enjoyed taking part in the blended learning environment. Students' achievement levels and their frequency of participation to forum affected their views about blended learning environment. Face-to-face interaction in blended learning application had the highest score. This result demonstrated the importance of interaction and communication for the success of on-line learning.

Keywords: Blended learning; on–line learning; distance education; face to face education

INTRODUCTION

Information and communication technologies, which have been developing rapidly, have become one of the indispensable elements of the 21st century. They have influenced, like all other fields, educational institutions which are the most important sub-institutions of the social structure. They have offered a favorable environment for the development and use of various methods and tools.

A noteworthy progress has been achieved since the first introduction of information and communication technologies into education. The type of education offered through tools such as letter, video, cassettes and television was called "distance education". Distance education covers many different types of teaching and methods. It can be seen as "...an umbrella concept covering correspondence courses, televised teaching, radio-broadcast teaching, open learning, computer-assisted instruction, telematic, individualized learning and self learning" (Sauve, 1993:102). There have been many definitions put forward in the literature.

Distance learning is defined by Greenberg (1998, 36) as "a planned teaching/learning experience that uses a wide spectrum of technologies to reach learners at a distance and is designed to encourage learner interaction and certification of learning". Teaster and Blieszner (1999, 741) explains as "the term distance learning has been applied to many

instructional methods: however, its primary distinction is that the teacher and the learner are separate in space and possibly time". Keegan (1995: 7) defines that distance education and training result from the technological separation of teacher and learner which frees the student from the necessity of traveling to "a fixed place, at a fixed time, to meet a fixed person, in order to be trained".

In other words, from these definitions we can see that, distance education is defined as the sort of education in which the distance between learner and educator is emphasized, and technology is used intensively throughout the learning process (Kaya, 2004). Today, with the rapid developments in technology, various tools such as computers, the Internet, cellular phones and satellites have been incorporated into the journey of distance education, and distance education is taken up in a broader sense.

In recent years the spread of computer use, development of Internet technologies and fast Internet connection have paved the way for providing a significant part of distance education through the Internet. That is why, concepts such as e-learning, online learning or web-based learning, where Internet and network technologies are overwhelmingly used in the presentation and reception of the content, are used to refer to these learning environments rather than the concept of distance education which defines a quite larger area, including models of learning through letter and radio broadcasting.

E-learning is defined in various ways. E-learning is defined as the learning which is achieved through the Internet, network, or just a computer (Clark and Mayer, 2003). e – Learning is content and instructional methods delivered on a computer (whether on CD-ROM, the Internet, or an intranet), and designed to build knowledge and skills related to individual or organizational goals. It is also known as the general name attributed to audio-visual, interactive synchronous or asynchronous educational and instructional activities. In sum, e-learning is explained as a way of teaching where computer is used (CD, Internet, and intranet) to achieve individual learning or institutional performance objectives (Clark and Mayer, 2003). It is noticeable that this definition introduces a more modern perspective to the concept of e-education and brings forward the concept of online learning. Khan (1997) defines online learning as *the use of Internet to access learning materials; to interact with the content, instructor and other learners, and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience* whereas Carliner (1999) defines online learning as educational material that is presented on a computer.

The concept of online learning predates the appearance of the Web, but most recent publications about online learning refer to materials delivered over the Internet or intranets (Malopinsky, Kirkley, Stein, & Duffy, 2000; Schank, 2001).

Web-based learning **is associated with learning materials delivered in a Web browser, including when the materials are packaged on CD-ROM or other media, and is defined as the presentation of learning content through web-based technologies such as e-mail, Internet, intranet and online discussion groups (Horton, 2002). The diverse definitions in the literature demonstrate the diversity of application and related technologies.**

E-learning is a practical and common method since it presents the learning content in a longer period of time compared with classroom environment and other tools. It ensures the continuation of education twenty-four hours a day, seven days a week. Nevertheless, e-learning environments pose certain disadvantages since they hinder the socialization process of individuals and weaken the attractiveness of traditional e-learning environments in the eyes of individuals. This is because instructor and learners do not know each other, which results in restrictions in communication. These kinds of disadvantages have triggered search for a new environment which combines the advantages of e-learning and classical learning environments. This new environment has introduced concepts such as mixed learning, blended learning and hybrid learning.

Blended learning can be described as "a learning program where more than one delivery mode is being used with the objective of optimizing the learning outcome and cost of program delivery" (Singh and Reed, 2001) .T*he term* blended learning *is also used to describe a solution that combines several different delivery methods, such as collaboration software, Web-based courses, and knowledge management practices. Furthermore Blended learning is used to describe learning that mixes various event-based activities, including face-to-face classrooms, live e-learning, and self-paced learning.*" (Valiathan, 2002). Another definition of blended learning is the effective integration of various learning techniques, technologies, and delivery modalities to meet specific communication, knowledge sharing, and information needs. (Finn and Bucceri, 2004: 2).

Clark and Myer (2003) indicates that there is no exact definition of blended learning and it may refer to different meanings for different people. In brief, blended learning is a type of education which combines various models of traditional and distance education and makes use of all types of technology. In other words, blended learning has come to be understood as a combination of conventional classroom instruction and e- learning. Blended Learning processes are thus articulated by combining online learning and traditional approaches in various degrees.

Blended learning environment which is regarded as a different type of distance education amalgamates the advantages of distance education with the effective aspects of traditional education, such as face-to-face interaction (Finn and Bucceri, 2004). In contrast to classical learning environment which poses restrictions on place and time, e-learning provides an environment where the learners can study regardless of time and place restrictions according to their learning speed. The factors such as learners' individual differences, personal characteristics and learning styles have significant impacts on the learning environment. For instance, the learners who have difficulty in establishing communication in the classroom environment find it easier to communicate in the electronic environment. As mentioned before, the disadvantages of e-learning deriving from the interruption of socialization process and the weakening attractiveness of e-learning applications in the eyes of learners are combined with relevant disadvantages of face-to-face education environments. It is obvious that the weaknesses and strengths of online environment and the weaknesses and strengths of face-to-face education integrate in blended learning.

The integration of an online learning environment and a classroom environment is likely to combine ideally the advantageous aspects of both types of instruction. Online or web-based learning environment provides the flexibility and the efficiency which cannot be assured in a classroom environment whereas a face-to-face education class ensures the social interaction in which the students will need guidance for learning.

McCampell (2001) emphasizes that blended e-learning will be a suitable approach for incorporating online applications into an existent course program for the first time, and highlights that some parts of the course content should be transferred to the online environment (forum, e-mail, web environment), without offering the whole courses online. However, it is important to establish the equilibrium between face-to-face education and online environments, in view of the advantages of both methods, during the process of organizing blended learning environments. As Ostguthorpe and Graham (2003) states, factors such as instructional objectives, characteristics of students, the condition of online resources and the experience of trainers play an important role in the establishment of this equilibrium. That is why, it is important, in the process of deciding on blended learning environments, to establish the equilibrium between face-to-face and online environments (determining how often teachers and students will encounter, how often they will meet in the discussion environment, etc.) rather than how to present the course. In this study, students' views about blended learning environment have been examined. Therefore, this study seeks the answers to following questions:

- What are students' views about blended learning environment?
- What are students' views about blended learning environment in respect of their achievement level?
- What are students' views about blended learning environment in respect of their frequency of participation to the forum?

RESEARCH METHODOLOGY

The objective of this study is to describe the views of students on blended learning environment in respect of their achievement level and frequency of participation.

Data Collection Process

The data required for this study were collected by the researchers through a questionnaire developed to identify students' views on blended learning and its implementation process; open-ended questions elaborated to be administered to students at certain intervals; achievement scores of students; and the records which demonstrate students' participation to online environment.

The Questionnaire Concerning Students' Views on Blended Learning and Its Implementation Process

The questionnaire was devised in order to identify students' views on Authoring Languages in PC Environment and Instructional Design courses where the approach of blended learning was implemented. This questionnaire was developed by the researchers after a literature review and it is composed of 50 items. 35 items aim at identifying students' views on the process of implementation (ease of use in web environment, online environment, face-to-face sessions, evaluations concerning the content) whereas the remaining 15 questions were prepared to determine their views on Blended Learning in general. The students were asked to rate each item on a scale ranging from 1-10. The scores obtained were deemed as follows: "8-10: high", "5-7: medium", "1-4: low"

Open-ended Questions

The students were asked to express their evaluations (the difficulties they encountered, their suggestions, etc.) concerning the process through open-ended questions. The open-ended questions were administered four times in 14 weeks. The first paper was composed of questions such as "What could be the advantages and disadvantages of using blended learning method in the course?" and "What are your expectations from this method of learning?" They were distributed to students in the first week when they were informed about the instruction process. The following papers were distributed in the fifth and tenth weeks and in the week of final examinations. Among the questions were "State briefly your opinions on the method (online and face-to-face) followed in Authoring Languages in PC Environment and Instructional Design.", "What are the difficulties you encountered throughout the implementation process?", "Is learning a topic through the web suitable for your study habits?" and "Has face-to-face education met your expectations?".

Achievement Level

The final grades of students were taken into consideration to evaluate their achievement level. The achievement levels were regarded as follows: "85 – 100: High", "65 – 84: Medium", "0 – 60: Low" The final grades were given by evaluating midterm examinations out of 25, the studies during the process of projects out of 25 and the final products of projects out of 50.

Frequency of Participation to Online Environment

The messages sent to the forum were saved, and the frequency of participation was recorded by student names. Participation frequency in a process of 14 weeks ranges from 18 to 0. The participation frequency scale is as follows:
"0–5: Low", "6–11: Medium", "12–18: High".

Research Group

The study was carried out among 64 students who took Authoring Languages in PC Environment and Instructional Design courses in 2005-2006 fall semester in the Department of Computer Education and Instructional Technologies, Faculty of Education, Hacettepe University.

Implementation Process

In this study a web based environment (Appendix 1) was designed for Authoring Languages in PC Environment and Instructional Design courses in order to collect data throughout the process. Only students and course instructors (researchers) had access to the web environment. The principles of Dual Coding Theory were taken into consideration when elaborating the Web Environment (Akkoyunlu and Yılmaz, 2005). Web based environment is quite simple in its structure – just upload and download functions for the practice sheets, exercises, text and handouts and a Forum for discussion.

The Forum environment was constructed to facilitate increased interaction among students with the instructor. Students shared the experiences, questions and opinions with each other and with the instructors. The participation of students to the forum environment was monitored by the instructors on a weekly basis, and the instructors gave them regular feedback.

The students were introduced to the technical features of the web environment use by instructors who also helped them whenever technical problems occurred.

The content of both courses were located into this environment every week by the researchers. Besides the course content, discussion questions, practice sheets or exercises took place in this environment. The web environment was updated regularly (announcements, weekly assignments, etc.) throughout the process at the beginning of courses. The students reached the documents one week before face to face sessions and they were asked to attend face-to-face sessions after replying the questions and performing the applications.

The face to face meetings were held every two weeks. During the time in between, the instructors communicated via the forum. In face-to-face sessions the questions of students concerning the course content and their answers on the practice sheets were discussed. Moreover, the students were periodically asked to evaluate the process (difficulties they encountered, their suggestions, etc.) through open-ended questions. During the process the program was improved in accordance with their evaluations. The researchers have observed that face to face classes forced the students to be actively engaged and connected to the process.

FINDINGS AND DISCUSSION

The results below present the answers to the research questions:

What Are Students' Views on Blended Learning?

Table: 1

Students' views on blended learning environment

	n	$\bar{x}$	*ss*
Ease of use of Web Environment	**64**	**7.60**	**1.67**
Online environment		**7.91**	**1.70**
Content		**7.86**	**1.75**
Face-to-face environment		**8.04**	**1.68**
Evaluation		**7.91**	**1.66**
Blended Learning Method		**7.63**	**1.11**
General		**7.24**	**1.25**

Table: 1 shows that the mean obtained from the questionnaire corresponds to 7.24. As mentioned above, the scores are categorized as follows: "1-4: Low", "5-7: Medium", "8–10: High". Though the average score is at *medium* level, it is quite close to *high* level. When the students' evaluation concerning the process is taken into consideration, it is found out that the highest mean corresponds to *face-to-face* aspect of this application. This situation can be explained in various ways: The face-to-face aspect of the application is more similar to students' study habits. Furthermore, it is possible that students found the answers of their questions during this process. In addition, the face to face interaction of students with each other and with the instructors is quite significant. The responses of students to the following questions also support this interpretation: "*Has face-to-face interaction met your expectations?*" The following comments are quoted from students' responses to this question:

"***We discussed on the questions whose answers we had not been able to find at all or the topics which we had difficulty in understanding. It was helpful for me."***

"During face-to-face environment, we understood the topics which we had not been able to understand on the web. It met my expectations very much"

"It was nice that the course was not carried out only via the web. Because , though we studied on the web and answered the study sheets, we had minimum number of difficulties about conflict of concepts. We compensated the deficiencies in the face-to-face courses."

"Face-to-face interaction met my expectations. I had the opportunity to ask to the course instructor the points that I did not understand on the web and to receive their responses."

"Face-to-face interaction reinforced the information we received in the web environment and ensured a higher level of learning. Furthermore, it met my expectations since the course instructors provided us with guiding information."

"I am pleased that the courses are carried out in this way. . I believe that they made me acquire lifelong learning. I attempt to learn on my own rather than expecting all information from others. Face-to-face sessions are great advantages. We learn by discussing the topics that we had not understood by studying by ourselves."

"I believe that the method used in these courses is an ideal one. We have access to course content and assignments via the Internet. The face-to-face sessions held once in fifteen days reinforce what we learned earlier and the topics we did not understand were explained in these sessions. Hence, effective learning is achieved."

As Dzibuan, Hartman and Moskal stated, "students are still able to anchor their learning experience on the familiar face to face class meetings" *(2004, 9).*

Though the recent developments in computer technology provide new educational opportunities for both learners and teachers, it is observed that, as Osguthorpe and Graham (2003) mentions, Internet-based learning does not ensure the interaction established in face-to-face or classroom environment.

In addition, the results of open-ended questions concerning students' views on blended learning method, asked to students in the final week, demonstrate that blended learning environment adds to the interest of students.

"I believe that it is a good method since it attributes more responsibility to students and encourages us to do research. Furthermore, I have access to lecture notes whenever I

need and I can ask the questions which sticks in my mind in the forum. Face-to-face course is a good method which enables us to ask the details about the project we carry out and the topics we do not understand. "

"Before coming to the course, we receive the information on the topic and download study sheets from the Internet. We get informed about the topic as we answer the questions in the study sheet. We have difficulty in answering some questions. We solve this problem in face-to-face sessions. By this way, students are already informed about the topic when they come to the course. We just discuss on what sticks in our minds, which enables us to spend our time more effectively. It is not required to wait for the course to find the answers of our questions because we can also ask questions in the forum. Hence, blended education ensures a more effective learning."

"We can learn by being free of time and place limitations and according to our own learning speed. We have the opportunity to catch up with what we have missed. In face-to-face education, we find answers for disturbing points and clarify what we have not understood."

The study of Burgon and Williams (2003) reveals that blended learning environment adds to the interest of students and also discussed students' satisfaction in a blended learning environment.

Many e–learning developments have emphasized changing roles of students and teachers in ways which are dramatic and obvious (Irons, Keel and Bielema, 2002; Parkinson, Grene, Kim and Marioni, 2003).

The students' views on blended learning were examined by their achievement level, and the results are illustrated in Table 2.

What Are Students' Views on Blended Learning Environment In Respect of Their Achievement Level?

Table: 2
Students' views on blended learning environment in respect of their achievement level

	Low		***Medium***		***High***	
	$\bar{x}$	***ss***	$\bar{x}$	***ss***	$\bar{x}$	***ss***
n	**10**		**20**		**34**	
Ease of use of Web Environment	**5.01**	**1.80**	**7.10**	**1.04**	**8.66**	**0.69**
Online environment	**5.41**	**1.66**	**7.18**	**1.18**	**9.04**	**0.62**
Content	**4.69**	**0.89**	**7.50**	**1.24**	**8.99**	**0.58**
Face-to-face environment	**5.12**	**1.60**	**7.78**	**1.08**	**9.06**	**0.57**
Evaluation	**5.00**	**0.47**	**7.61**	**1.21**	**8.96**	**0.80**
Blended Learning Method	**6.21**	**0.82**	**6.97**	**0.82**	**8.43**	**0.52**
General	**4.90**	**0.55**	**6.85**	**0.50**	**8.17**	**0.29**

As Table: 2 demonstrates, the views of students on blended learning diversify as the achievement level mounts. It is observed that students' views on both the implementation process (ease of use of the web environment, online environment, face-to-face sessions, content and evaluation) and the blended learning in general change as their achievement level raises. The views of students, whose achievement level is *low*, on the process can be summarized as follows:

"*The differences of this method from previous methods resulted in some difficulties, and biweekly courses also produced these difficulties. It is a disadvantage to be in front of the computer when learning through the web.*"

"I believe that we should be in face-to-face interaction more frequently. I lost my enthusiasm for the course because of biweekly courses, and thus, I was unsuccessful."

"I believe that there could be more face-to-face education. Though it is joyful to take the course through the web, I think we cannot get rid of our habits easily. I believe that my level of success would have been better if I had more face-to-face interaction."

"I had difficulty since it was a new and different method. I had difficulty when doing the exercises on practice sheet. I am not accustomed to learning a topic through the web. Effective use of this environment requires time and familiarization. I believe that it affected my success."

"Face-to-face interaction was not sufficient. It would have been better if the instructors had told the topic in the classroom rather than merely asking what we had not understood. "

"It is a very new type of learning. I encountered such a practice for the first time and had difficulty in adapting to it. I believe that I would have been engaged in an easier learning process if I had had the background required. However, it was difficult to learn on computer, in the forum. Learning through the Internet was challenging for me since I am not familiar with the web. It affected my success."

The views of students whose achievement level is *high* can be summed up as follows:

"The web site designed for the course met my expectations satisfactorily. Both the content of the web site and the forum was informative enough. The only difficulty we encountered was the problems in the server of the university and that we were not able to open the page. "

"It is a big advantage for us that the web site was clear and comprehensible. It was designed meticulously in respects of its content, announcements and communication."

"Since the content of the course is published on the web, I acquired the habit to come to the course prepared. Previously I was not studying the topic before coming to the course. However, it is joyous (fun) to prepare for the course now since the lecture notes on the web are clearer and more comprehensible. I can say that this method has positive impacts on my studying habits since it also includes interaction. "

Garrison and Kanuka (2004) compared blended learning environment and traditional learning environment and observed that more effective and efficient learning occurs in blended learning environment and that the success level of students is raised.

It can be highlighted that high achievement in e–learning environment are strongly linked to students' understanding regarding why it is used and conversely low achievement when students could not see the purpose of the on line activities.

Students' views on blended learning environment were also analyzed by their frequency of participation to the forum, and the results of this analysis are given in Table 3.

What Are Students' Views on Blended Learning Environment In Respect Of Their Frequency Of Participation To The Forum?

Table: 3
Students' views on blended learning environment in respect of their frequency of participation to the forum

	Low		Medium		High	
	$\bar{x}$	ss	$\bar{x}$	ss	$\bar{x}$	ss
n	15		15		34	
Ease of use of Web Environment	5.33	1.03	7.48	0.79	8.66	0.69
Online environment	5.79	1.64	7.39	1.04	9.07	0.62
Content	5.17	1.15	7.97	0.92	9.00	0.57
Face-to-face environment	5.80	1.80	7.98	0.87	9.06	0.57
Evaluation	5.53	1.03	7.91	1.09	8.95	0.81
Blended Learning Method	6.28	0.68	7.17	0.85	8.42	0.52
General	5.29	0.75	7.09	0.29	8.17	0.28

As illustrated in Table 3, the views of students on blended learning diversify as their frequency of participation to the environment raises. It is observed that students' views on both the implementation process (ease of use of the web environment, online environment, face-to-face sessions, content and evaluation) and the blended learning in general change as their frequency of participation to the environment increases. The views of students, whose frequency of participation is *low*, on the process can be summarized as follows:

"It was a different method. I cannot say that the forum environment was helpful. I do not believe that my nonparticipation in the forum environment affected my success."

"Lectures and practice sheets were useful; however, I was not effective in the forum. This could have been the reason for my failure."

"I participated less frequently in the forum environment, which was my deficiency. This is the reason for my failure. "

"I did not participate in the forum since I am not accustomed to using forums. My failure to follow the discussions resulted in the inefficacy of courses."

The views of students whose frequency of participation in the forum is *high* can be summed up as follows:

"The web site had a simple and comprehensible structure in terms of both use and presentation of content. The forum environment in the web site was very useful for sharing information."
"Sharing my thoughts about the course with my friends and instructors in the forum environment made an exclusive contribution to my learning."

"The practice questions and, particularly the forum environment met my expectations."

"I followed the discussions in the forum environment after studying the topics on the web. The forum was supportive since it helped me reinforce what I learned."

"The forum environment in the web site was useful for sharing information. I found the answers of certain questions."

"I believe that this is a very effective system. Our learning reinforces thanks to your lectures and gains the right form; we can study day-to-day. In the forum page I can share anything that sticks in my mind with you and my friends. In my opinion, the method of online and face-to-face course environment is very effective and I am pleased with this method."

Researchers observed that the frequency of participations in the forums, and giving regular feedbacks were considered signs of interest and caring.

Wegerif (1998) emphasizes the significance of interaction-communication for the effective functioning of online learning and highlights that interaction has to be taken into consideration when such learning environments are designed. Northrup (2001) indicates that as students' level of interaction raises their level of learning increases. The studies in the literature demonstrate that students are pleased with asynchronous means of communication they use in the web environment (e.g. forum, e-mail) and that mutual replies and share of information contribute to their learning (Christensen, 2003; Burgon and Williams, 2003).

CONCLUSION AND RECOMMENDATIONS

This study examines students' views on blended learning environment as well as their achievement level and frequency of participation to the forum. The results of the study demonstrate that, the more students' achievement level and frequency of participation to the forum raises, the more positive views they express about blended learning environment. The highest score given to face-to-face environment throughout the process of implementing blended learning and, as mentioned above, the increasing positive views about blended learning environment in proportion to increasing frequency of participation to the forum emphasize the significance of interaction-communication in the effectiveness of online learning.

This study highlighted that face-to-face teaching and the use of the forum in this method contributed to students' learning. The fact that students, whose achievement level is low, stated that they were not accustomed to using online environment underlines the importance of making students familiar with these environments through blended learning method before adopting a method which is completely based on online learning and that of supporting online courses with face-to-face interaction.

When the importance of interaction-communication is taken into consideration in effective learning, it can be concluded that synchronous communication environments should coexist with asynchronous ones. Hence, students will be exposed to more productive learning experiences. Face-to-face and online environments can be reorganized by examining the learning styles of students in blended learning environments.

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