



CURRENT SITUATION OF E-LEARNING IN HIGHER EDUCATION: A CASE STUDY

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Introduction

E-learning is gaining popularity year by year, with almost all large universities providing online programmes and courses nowadays. Due to high youth population in Turkey, there is a huge demand for e-Learning, especially from disadvantaged groups who also need to work whilst studying and are therefore unable to attend traditional on-campus education for several reasons. As a result, universities are providing different programmes to counter these demands. On the other side, and for similar reasons, having high numbers of on-campus students, universities suffer from inadequate resources in terms of numbers of both instructors and physical classrooms. Consequently, at many universities, mandatory courses delivered to all enrolled students are also being transformed to be provided online.

Programmes and delivery methods: e-learning at Ankara University

Ankara University offers various online programmes supported through a Distance Education Centre. These programmes offer a variety of vocational, undergraduate, and graduate degrees. The vocational programmes include computer programming, medical documentation, insurance and banking, tourism and catering services, and a judicial services support programme. The university provides an online BSc. Religious Studies degree programme for undergraduate students. MSc/MA graduate degree programmes in Human Relations, Journalism, Health Management, and Social Services are also offered. In addition, some formal training courses offered to students of all departments, namely Information and Communication Technologies, Foreign Languages, and Turkish Language courses are also offered through e-Learning.

Ankara University Distance Education Centre supports this e-Learning process by providing learning management systems, virtual classrooms, interactive content and communication tools. The university uses Moodle as the learning management system, one commercial, and one open-source programme as virtual class software. Content development is supported by a national product (Etudio), besides some other commercial and open-source tools. Multimedia studio is also used to create video-based content.

Assessment of e-learning at Ankara University

The Distance Education Centre decided to monitor the process of e-Learning in 2011, and periodically administers two scales each year in order to reveal e-Readiness and satisfaction. Measuring e-Readiness is important since motivation and preparedness directly affects how students benefit from using ICT (Dada, 2006; Aydin & Tasci, 2005; Okinda, 2014), and entry characteristics of students also affect satisfaction (Yukselturk, 2009). Measuring the satisfaction of online students is also important since it provides detailed information on other aspects of the process such as instructors, content, learning environment, and assessment (Secreto & Pamulaklakin, 2015; Kuo, Walker, Belland & Schroder, 2013; Cole, Shelley & Swartz, 2014).

Based on these facts, this research study is conducted to reveal the readiness and satisfaction levels of online students and to investigate possible differences between students' grade, gender, and status (formal learners or online).

Research methodology

This research study was based on a survey methodology in order to reveal different aspects of various programmes. e-Readiness was administered at the beginning of the semester, whereas e-Satisfaction was administered at the end. This research study seeks answers to the following research questions:

1. To what extent were distance education students and formal learners ready for their online courses?
2. To what extent were distance education students and formal learners satisfied with their online courses?
3. Are there any differences in terms of e-Readiness and e-Satisfaction between distance education students and formal learners?

Sample

The aim of this study was to investigate readiness and satisfaction of both distance education students and formal learners who registered for online courses. All registered students from different levels, who were two-year or four-year undergraduate students or graduate (masters) students, formed the participants of this study. The population for this study comprised of 10,262 students enrolled in various distance education programmes or online courses at a state university in Turkey. The demographic is shown in Table 1.

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Table 5: Student demographics

| Type of Student | Number of Students | | Gender | | Marital Status | |
|---|--------------------|--------------|--------|--------|----------------|---------|
| | Total | Participants | Male | Female | Single | Married |
| Vocational School | 2,129 | 867 | 405 | 462 | 639 | 228 |
| BSc./BA | 1,293 | 895 | 250 | 645 | 180 | 715 |
| MSc./MA | 514 | 329 | 145 | 184 | 133 | 196 |
| Formal learners (enrolled for online courses) | 13,000 | 8,171 | 3,144 | 5,027 | 7,842 | 329 |

In this data, 2,091 students are registered to fully online programmes and can be classified as distance learners, whereas 8,171 are only registered to several online courses and are therefore known as formal (classroom) learners. More than half of both distance and formal learners are female. Marital status changes according to programme, and those married are mostly enrolled in BSc/BA programmes.

Data collection instruments

Two scales, namely the *e-Readiness Scale* and *e-Satisfaction Scale*, originally developed by one of the researchers, were used to collect data for this study. The reliability coefficient for the e-readiness scale ranged between .77 and .80, whereas for the e-satisfaction survey, the values were between .91 and .96, which implies reliability of both the scales (Gülbahar, 2012).

The e-Readiness scale was aimed to reveal the participants' level of readiness for e-learning before the start of the course (Gülbahar, 2012). The scale is formed as a 5-point, Likert-type scale with 26 items, plus one open-ended question. The scale has five factors which are individual properties, ICT competencies, access to technology, motivation and attitude, and factors that affect success.

The e-Satisfaction scale was aimed to identify participants' level of satisfaction about the e-learning process and is administered at the end of the semester (Gülbahar, 2012). This scale is also a 5-point, Likert-type form, having 29 items plus one open-ended question. The scale has four factors, which are communication and usability, teaching process, instructional content, and interaction and evaluation.

Data analysis

For data analysis, SPSS version 17.0 statistical analysis software was used for qualitative analysis. One-way ANOVA, Scheffe, and descriptive statistics were conducted on actual datasets. Before starting the analysis, all invalid data was deleted from the datasets.

Findings

e-Readiness levels

Data for the 10,262 students was analysed in order to determine their e-readiness according to grade levels. The results showed that ICT competencies have a higher effect on participants' readiness for vocational, MSc/MA and formal students. In addition, success factors have a bigger effect on the readiness of BSc/BA students. Results of the descriptive analysis of data from the e-Readiness scale for each dimension are presented in Table 2.

Table 2: e-Readiness results

| | Vocational students (N= 867) | | BSc/BA students (N= 895) | | MSc/MA Students (N= 329) | | Formal Students (N= 8171) | |
|------------------------------|------------------------------|---------|--------------------------|---------|--------------------------|---------|---------------------------|---------|
| | Mean | Std Dev | Mean | Std Dev | Mean | Std Dev | Mean | Std Dev |
| Individual Properties | 3.22 | 0.91 | 2.87 | 0.88 | 3.39 | 0.79 | 2.93 | 1.05 |
| ICT Competencies | 4.20 | 0.93 | 3.71 | 0.99 | 4.21 | 0.85 | 3.67 | 0.99 |
| Access to Technology | 3.87 | 1.03 | 3.76 | 1.05 | 4.09 | 0.87 | 3.28 | 1.18 |
| Motivation & Attitude | 3.71 | 0.94 | 3.42 | 0.85 | 3.84 | 0.85 | 3.23 | 1.01 |
| Factors that affects success | 4.11 | 0.90 | 3.87 | 0.86 | 4.14 | 0.85 | 3.51 | 0.95 |
| Total | 3.90 | 0.72 | 3.58 | 0.71 | 3.99 | 0.71 | 3.39 | 0.79 |

It is obvious that the majority of participants feel competent about using computers and the internet in terms of information searching, communicating through online tools, and using social media for educational purposes. Also, as a general view, the data shows that MSc/MA students have a higher degree of readiness than vocational, BSc/BA, or formal students. Owing to the fact that MSc/MA students have already completed their undergraduate degree, their general educational background may be the cause of that result.

e-Satisfaction levels

The 4,792 students' data were analysed in order to determine their e-satisfaction according to grade level. The results showed that instructional content has a higher effect on participants' readiness for vocational, BSc/BA and MSc/MA students. As for formal students, the results showed that communication and usability factor is more effective on satisfaction. The results of the descriptive analysis of the data from the e-Satisfaction scale for each dimension is presented in Table 3.

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Table 3: e-Satisfaction results

| | Vocational School Students (N= 568) | | BSc./BA Students (N= 631) | | MSc./MA Students (N= 214) | | Formal Students (N= 3,779) | |
|-----------------------------|-------------------------------------|---------|---------------------------|---------|---------------------------|---------|----------------------------|---------|
| | Mean | Std Dev | Mean | Std Dev | Mean | Std Dev | Mean | Std Dev |
| Communication and Usability | 3.65 | 0.93 | 3.49 | 0.91 | 3.50 | 0.87 | 3.46 | 1.02 |
| Teaching Process | 3.59 | 0.90 | 3.31 | 0.89 | 3.46 | 0.89 | 3.34 | 0.96 |
| Instructional Content | 3.68 | 1.00 | 3.50 | 0.94 | 3.66 | 0.92 | 3.38 | 1.06 |
| Interaction and Evaluation | 3.50 | 0.98 | 3.26 | 0.93 | 3.32 | 0.91 | 3.21 | 0.98 |
| Total | 3.50 | 0.83 | 3.32 | 0.79 | 3.43 | 0.77 | 3.33 | 0.87 |

According to the descriptive analysis, it is seen that the majority of participants feel well-guided about the instruction process, involved in a good online learning climate, and have a common idea about instructors' expertise in their area. Those items are the most important factors which affect the participants' satisfaction in terms of vocational, BSc./BA, and MSc./MA students, in other words for distance learners. The situation differs for formal students, where communication and usability has more importance for their satisfaction levels. This difference for formal students could be explained as a result of them having already attended face-to-face courses and then expecting the same interactive environment regarding online courses.

Comparison of programmes

According to One Way ANOVA analysis, the data shows significant differences between graduation levels [$F_{(2,2088)} = 61.45$]. With the aim of determining the source of these differences, Scheffe test was conducted, and the results showed that MSc/MA students ($X=3.99$) and vocational school students ($X=3.90$) have a higher e-readiness than that of BSc/BA students ($X=3.58$).

Table 4: Distance education students' e-readiness

| Source of Variance | Sum of Squares | df | Mean Square | F | p | Significant Difference |
|--------------------|----------------|-------|-------------|--------|------|---|
| Between Groups | 63.617 | 2 | 31.809 | 61.446 | .000 | Vocational - BSc./BA MSc./MA - BSc./BA |
| Within Groups | 1,080.896 | 2,088 | .518 | | | |
| Total | 1,144.514 | 2,090 | | | | |

MSc/MA students have a higher graduation degree than the BSc/BA and vocational school students, so they may be more ready for e-learning and their expectations higher because of these past experiences. Similar to the situation described for MSc/MA students, there is also a significant difference between vocational school students and BSc/BA students. The age differences may be a reason for this difference too, as vocational school students are younger than BSc/BA students, and their ICT competencies higher than other students, and thereby more ready for e-learning.

For determining the differences on e-satisfaction levels, One Way ANOVA analysis was reran. The data showed a significant difference between graduation levels [$F_{(2-1410)} = 7.13$]. With the aim of determining the source of these differences, Scheffe test was conducted, and the results showed that vocational school students ($X=3.50$) are more satisfied than BSc/BA students ($X=3.32$).

Table 5: Distance education students' e-satisfaction

| Source of Variance | Sum of Squares | df | Mean Square | F | p | Significant Difference |
|--------------------|----------------|-------|-------------|-------|------|------------------------|
| Between Groups | 9.261 | 2 | 4.630 | 7.127 | .001 | Vocational - BSc./BA |
| Within Groups | 916.063 | 1,410 | .650 | | | |
| Total | 925.324 | 1,412 | | | | |

This difference between vocational school and BSc/BA students can be a result of the characteristics of their schools. Vocational school students have been inclined to use ICT tools in comparison with BSc/BA students, which may make them more comfortable, and feel more confident during the e-learning process. When considering item scores, it can be seen that vocational school students are more willing to use communication tools and different interaction channels. Also, instructional content has the highest score among all satisfaction factors, which can be explained by their content area. BSc/BA students have taken more verbal courses, and vocational school students have taken mainly mathematics courses during their education. It can be said therefore, that the efficiency of instructional process can be affected by the construct of courses and programmes.

Discussion and conclusion

In this research study, it was aimed to provide a bigger picture of how distance and formal learners perceive their e-Learning experiences, both before and after the teaching-learning process. Findings revealed varied results for different groups. These differences have many reasons such as age level, subject field, instructional content provided, ICT competencies, communication and interaction expectancies, and assessment preferences. It is difficult for formal learners to keep up with both face-to-face and online courses at the same time, especially when times for the courses offered do not match students' expectations. It is also difficult for lifelong learners to handle e-Learning in addition to their work and family responsibilities. In light of these results, these findings show that besides known variables and obstacles, there are many options for future implementations in order to tackle existing and potential problems.

Administrators monitor students' preferences and try to present what they really need and expect. Of course, it is not an easy task to address each students' needs with such a large student population. However, thanks to technology, year on year the features of learning management systems are increasing in a way that is making these systems more suitable for meeting students' needs. Many tools and plugins are provided for different purposes like assessment, gamification, social analysis, interaction and collaboration, which are all factors that affect student satisfaction (Sun, Tsai, Finger, Chen & Yeh, 2008). So, at least for supporting communication and interaction processes, we now have many more options than

before. On the other hand, there are again many tools for producing really high quality and interactive multimedia content for students. Together, these opportunities enhance the usability of the learning management system by supporting student engagement throughout the course. In addition to technological tools, instructional design and technical support issues are very important for student engagement. Access to efficient technical support can decrease stress, and vivid multimedia learning instruction can help enhance student participation (Liaw, Huang & Chen, 2007; Concannon, Flynn & Campbell, 2005). Also, it's highly important that instructor's demonstrate the correct level of expertise and attitude during teaching-learning activities as the instructor component directly affects academic achievement (Paechter, Maier & Macher, 2009). In terms of professional development, institutions should provide regular training for e-learning instructors.

In summary, as educators we are trying our level best for those who need rather than choose, to receive their education, or part thereof, via e-Learning. More ubiquitous learners are requesting e-Learning than ever before, and we now know what they expect and how best to satisfy them in their e-Learning experience. Hence, based on the results, the training of instructors, enhancing the quality of content, and enriching existing materials and resources should be the first steps taken in providing a better e-Learning experience for our students and to further strengthen our e-Learning implementation.

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