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Analysis of Education Faculty Students' Attitudes towards E-Learning According to Different Variables

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***Abstract*—**The purpose of the study is to investigate the education faculty students' attitudes towards e-learning according to different variables. In current study, the data were collected from 393 students of an education faculty in Turkey. In this study, theattitude towards e-learning scale and the demographic information form were used to collect data. The collected data were analyzed by t-test, ANOVA and Pearson correlation coefficient. It was found that there is a significant difference in students' tendency towards e-learning and avoidance from e-learning based on gender. Male students have more positive attitudes towards e-learning than female students. Also, the students who used the internet lesshave higher levels of avoidance from e-learning. Additionally, it is found that there is a positive and significant relationship between the number of personal mobile learning devices and tendency towards e-learning. On the other hand, there is a negative and significant relationship between the number of personal mobile learning devices and avoidance from e-learning. Also, suggestions were presented according to findings.

***Keywords*—**Education faculty students, attitude towards e-learning, gender, daily Internet usage time, m-learning.

I. Introduction

WIDE use of internet and increased social interactions via the Internet have affected the technology assisted instructional services. Accordingly, our daily lives have becomemore technological centered [1]. Educational institutions, which are in charge of preparing students to life, have been making more use of technology by developing curricula. Use of computer assisted instructional systems[2], [3], [4], animations [5], [6], simulations [7], [8] and 3-D virtual environments [9], [10] hasbecome popular. Another favorable contribution of rapid developments in technology to education is the development of e-learning environments.

E-learning enables individuals to access to the information via the Internet and gives the opportunity to self-learning. With e-learning, an individual exceeds space and time limitations. One can communicate with colleagues and teachers either simultaneously or asynchronously.

With use of technological advancements, communication involving visual and audial responses has become possible in the learning environment. E-learning environments offer life-long learning opportunities by removing socio-economic discrepancies [11].Advantages of e-learning are [12];

- Decision to the time of learning is decided by the e-learner
- Courses can be reached from anywhere with an Internet connection
- E-learners can decide on the speed, the time and the amount of subjects
- Courses and information are readily available and can be repeated
- Effectiveness of the education can be assessed directly
- Standard courses can be delivered independent of students
- Instructors are available constantly via e-mail, forums etc.
- Instructional costs are reduced

As in many other fields, advancements in science and technology influenced education as well. Therefore, updated and widespread technological infrastructure for educational institutions has become very important. In building up such infrastructures, scientific researchers are of special importance. Because the technologies utilized in education, necessities and expectations of pupils, methods and techniques of instruction are changing rapidly. Scientific researches will help making decisions to advance the quality of the instruction in this period of change.

In line with this purpose, answers to the following research questions are sought:

1. What is the level of students' attitudes towards e-learning?
2. Do attitudes of students towards e-learning differ with gender?
3. Do attitudes of students towards e-learning differ with the time spent on the Internet?
4. What is the relationship between tendencies towards e-learning, avoidance from e-learning and number of personal m-learning devices possessed?

II. Method

A. Model of the Study

The current study conducted by the survey model is aimed to investigate of the education faculty students' attitudestowards e-learning according to different variables. The survey model is an approach that aims to describe the past or present existing condition without interfering [14].

B. Participants

Working group of the research is consisted of 393 (59.8% Female; 40.2% Male) Turkish education faculty students from 6 different departments. 13.2% (n=52) were freshman students, 15% (n=59) were sophomore students,

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35.6%(n=140) were junior students and 36.1% (n=142) were senior students. The departments of the students who participated in the current study are summarized in Table I.

TABLE I
THE PARTICIPANTS' DISTRIBUTION ACCORDING TO THEIR DEPARTMENTS AND GENDER

Departments	Gender		Total
	Female	Male	
Mentally Disabled Teacher Education	56	45	101
Social Studies Teacher Education	28	25	53
Psychological Counseling and Guidance	66	30	96
Computer Education and Instructional Technology	30	22	52
Primary Mathematics Teacher Education	20	9	29
Art and Crafts Teacher Education	19	7	26
Religious Culture and Moral Education	16	20	36
Total	235	158	393

C. Research Instruments

The Attitude towards E-Learning Scale developed by Haznedar and Baran [13] was used to determine education faculty students' level of attitude towards e-learning. The scale is 5 Likert-type consisting of two dimensions that are tendency towards e-learning and avoidance from e-learning. Each dimension of the scale has 10 items. The scale item factors are found to be between 0.80 and 0.51. Reliability of the scale was determined by calculating of Cronbach's Alpha Internal Consistency. For reliability calculation for the tendency towards e-learning dimension and avoidance from e-learning dimension are calculated to be 0.93 and 0.84, respectively.The Demographic Information Form that includes three questions about the participants was developed by researches. These three questions are follows:

1. What is your gender?
2. What is your average daily use of the Internet in hours?
3. How many personal mobile learning devices (like PDA, I-Pad, Smartphone etc.) do you have?

III. FINDINGS

The t-test, ANOVA and Pearson Correlation Coefficient were used to analyses collected data.The descripted statistics were conducted in order to determine the students' level of attitudes towards e-learning.

TABLE II
EDUCATION FACULTY STUDENTS' LEVEL OF ATTITUDE TOWARDS E-LEARNING

Variable	N	Minimum	Maximum	Mean	sd
Tendency towards e-learning	393	10	50	32.02	9.033
Avoidance from e-learning	393	10	50	30.54	8.651

As can be understood from Table II, the students' level of tendency towards e-learning and avoidance from e-learning is close to each other and moderate level.

Whether there is a significant difference according to gender in students' tendency towards e-learning and avoidance from e-learning has been examined and provided in Table III.

TABLE III
ANALYSIS OF ATTITUDE TOWARDS E-LEARNING ACCORDING TO GENDER

Dependent Variable	Gender	N	Mean	sd	t	df	p	Cohen's d
Tendency towards e-learning	Female	235	30.38	8.154	-4.49	391	<.001	0.45
	Male	158	34.46	9.728				
Avoidance from e-learning	Female	235	32.32	8.104	5.14	391	<.001	0.52
	Male	158	27.89	8.784				

As can be seen from Table III, there is a significant difference in students' tendency towards e-learning and avoidance from e-learning based on gender. Female students have higher avoidance from e-learning than male students (t=5.14, $p<0.001$) while male students have higher tendency towards e-learning than female students (t=-4.49, $p<0.001$). Also it is found that gender is moderately effective on tendency towards e-learning and avoidance from e-learning.

Whether there is a significant difference among students' tendency towards e-learning and avoidance from e-learning based on the students' daily internet usage time has been examined and results shown in Table IV.

TABLE IV
ANALYSIS OF ATTITUDE TOWARDS E-LEARNING ACCORDING TO DAILY INTERNET USAGE TIME

Dependent Variable	Resource of Variance	Sum of Squares	df	Mean Square	F	P	Significant Difference*
Tendency towards e-learning	Between Groups	163.53	2	81.77	1	0.368	-
	Within Groups	31820.31	390	81.59			
	Total	31983.84	392				
Avoidance from e-learning	Between Groups	517.61	2	258.8	3.5	0.031	1-3
	Within Groups	28820.11	390	73.9			
	Total	29337.72	392				

*1) <1 hour, 2) 1-3 hours 3) 3 hours or more

As can be seen from Table IV, there is no significant difference in students' tendency towards e-learning based on daily Internet usage time while there is a significant difference in students' Avoidance from e-learning based on daily Internet usage time. Students who used the Internet for less than 1 hour have higher avoidance from e-learning than students who used the Internet for 3 hours or more.

Whether there is a significant correlation among students' tendency towards e-learning, avoidance from e-learning and number of personal m-learning device has been examined and results shown in Table V.

TABLE V
THE CORRELATIONS AMONG STUDENTS' TENDENCY TOWARDS E-LEARNING, AVOIDANCE FROM E-LEARNING AND NUMBER OF PERSONAL M-LEARNING DEVICE

	Variables	1	2	3
1	Tendency towards e-learning	-	-,759**	,133**
2	Avoidance from e-learning	R	-	-,157**
3	Number of personal m-learning device			-

**$p<0.01$

As can be seen from Table V, there is a positive and significant linear relationship between the number of personal mobile learning devices and tendency towards e-learning. On the other hand, there is a negative and significant linear relationship between the number of personal mobile learning devices and avoidance from e-learning.

IV. Conclusion

In current research, it is found that the students' level of tendency towards e-learning and avoidance from e-learning is close to each other. In fact, Haznedar and Baran reached similar conclusions [13]. Also, it is understood that female students have higher avoidance from e-learning than male students ($t=5.14$, $p<0.001$) while male students have higher tendency towards e-learning than female students ($t=-4.49$, $p<0.001$). Also, it is analyzed that gender is moderately effective on tendency towards e-learning and avoidance from e-learning. Another research result obtained is that there is a significant difference in students' avoidance from e-learning based on daily internet usage time. Students who used the Internet for less than 1 hour have higher avoidance from e-learning than students who used the internet for 3 hours or more. Individuals who interact more with the Internet havelessnegative attitudes towards e-learning. According to the results of the correlation analysis, it is understood that there is a positive and significant relationship between the number of personal mobile learning devices and tendency towards e-learning. On the other hand, there is a negative and significant relationship between the number of personal mobile learning device and avoidance from e-learning. As the personal mobile learning increases,the negative attitude towards e-learning reduces. According to these results, the following recommendations can be carried out to develop education faculty students' positive attitudes towards e-learning: Students can be informed about e-learning, appropriate e-learning environments can be improved and generalized for education faculty students, and the number of m-learning devices that students can interact can be increased.

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