ATTITUDES OF TURKISH DISTANCE LEARNERS TOWARD INTERNET-BASED LEARNING:
An Investigation Depending on Demographical Characteristics

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ABSTRACT

The purpose of this study is to develop an attitude scale toward Internet-based learning (IBL) and to investigate whether attitude levels of Turkish distance learners in an IBL environment differ according to their demographical characteristics (i.e. age, gender, marital status, parental status, employment status, grade point average (GPA). Research data were gathered from 804 (491 male and 313 female) learners in an IBL environment at Sakarya University, Turkey. Explanatory factor analysis identified three factors with eigenvalues >1. The scale appears to be a reliable and valid instrument to assess the attitude levels of learners toward IBL. The analyses of demographical characteristic differences on the scale indicate that married learners, working learners and learners with children have significantly higher attitude levels toward IBL than those of unemployed and single learners and learners with no children. Male distance learners demonstrate significantly higher attitude levels than females do on the majority of the subscales. In general, learners over age of 26 have statistically higher attitude levels than those of younger learners. Attitude levels of learners with poor GPAs are significantly lower than those of learners with better GPAs. The findings are consistent with the related literature.

Keywords: **Internet-based learning; attitude towards Internet-based learning; Turkish distance learners; demographical characteristics.**

INTRODUCTION

Distance education is any type of education in which learners and instructors are separated by physical distance (Whalstrom, 2003) or time. It has a substantial history that begins in the mid 1800's with correspondence type of print-based courses (Verdiun & Clark, 1991). Besides the print-based materials, distance education benefited from telecommunication technologies of radio and television broadcasting and audio-video recording during the past years.

Today, distance education has involved a more sophisticated technology, moving towards virtual environments in which instruction from a host site is distributed to distant sites by using a combination of live, two-way interactive audio, video, or both, and synchronous and asynchronous computer-based interactions that use local area networks (LANs), wide area networks (WANs), and the Internet (Williams et al., 1999).

According to the literature (e.g., Cragg et al., 2003; Brinkerhoff & Koroghlanian, 2005; Williams et al., 1999) distance learning through online or Internet technology has

enormous potential to reach widely dispersed populations and to meet educational needs of individuals.

Today many institutions (e.g., University of Phoenix, British Open University) in different societies offer distance education or online degrees to individuals who seek opportunities for life-long learning. However, while distance education continues to expand by using online or Internet-based technologies, it is important to recognize learners as clients of education and to be concerned about their attitudes toward internet-based learning as well as their satisfaction with educational services provided (Mayzer, & Dejong, 2003). Eagly and Chaiken (cited in Albarracin et al., 2005, p. 4) state that an "attitude is a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor". According to Katz and Stotland (cited in Albarracin et al., 2005), attitudes encompass cognitive, affective, and behavioral components. Researchers in different societies (e.g., Tsai et al., 2001; Brinkerhoff & Koroghlanian, 2005; Cragg et al., 2003) investigated learners' attitudes toward the educational use of Internet or web.

However, current research literature which deals with Turkish learners' attitudes toward online or Internet-based distance learning is small despite the expanded body of literature regarding distance learning activities in Open Education Faculty of Turkey (e.g., McIsaac et al., 1988; Demiray, 1990; Demiray, 1991). Limited number of Turkish universities (about 4 out of 73), i.e., Middle East Technical University, Bilkent University, Anadolu University, Sakarya University, has offered Internet-based courses since the early 2000s (Usun, 2003). Thus, when compared to the developed countries (e.g., U.S., U.K.) educational uses of the Internet and online technologies Turkey are still in the infancy period (Çağıltay, cited in Usun, 2003). In addition, there is no sufficient attitude scale in Turkish, which directly measures the attitudes of learners toward the IBL. Hence, investigation of Turkish learners' attitudes toward IBL will be a significant attempt to gain some feedback about whether they favor or disfavor educational use of the Internet.

Therefore, the purpose of this study is to develop an attitude scale toward IBL and to analyze whether attitude levels of Turkish learners in an IBL environment, Distance Education Vocational School of Adapazari (DEVSA) at Sakarya University (SU), Turkey, differ depending on their demographical characteristics such as age, gender, marital status, parental status, employment status, grade point average (GPA). This study, moreover, aims to investigate whether the findings on the Turkish learners' attitudes toward IBL are consistent or not with the results of prior related studies in other societies.

LITERATURE REVIEW

Adult Learners and Attitude

Attitudes of learners toward distance education or new forms of distance education such as Web or Internet-based education were investigated by various studies (e.g., Sorensen, 1995; Maushak & Ellis, 2003; Reisslein, et al., 2005; Smith & McNeils,1993; Cramer et al., 2002; Mayzer & Dejong, 2003; Brinkerhoff & Koroghlanian, 2005; Shih & Gamon, 2001; Cragg, et al., 2003; Gal-Ezer & Lupo, 2002). Most of the related studies suggest that adult or older learner orientations have more positive attitudes towards distance education. For instance, Sorensen (1995) investigated attitudes of community college students in Iowa towards interactive television instruction. The instrument, applied by Sorensen, collected demographic information and utilized four point Likert-scale items to measure five factors such as instruction, membership, technical aspects,

course management, and course satisfaction that reflected the overall attitudes of students towards distance education experience.
According to the findings of Sorensen's study (1995), distance education is more suited to older learner orientations that might be due to a lower need for peer interaction. Moreover, Maushak & Ellis (2003) investigated the attitudes of graduate learners toward mixed-medium distance education by utilizing an attitude scale which was adapted from Sorensen's study. Similar to the results of Sorensen's study, findings of Maushak and Ellis (2003) study supported the theory that distance education may be more suited to older learner orientations.

O'Lawrence (2006) investigated the effect of distance learning on adult learners in the U.S. The investigation indicated that flexibility, self-tailored learning and ability of instructors to combine lecture materials with specific modules offering computer learning tools were the advantages of distance learning over traditional classroom course. The study suggested that distance learning is a viable alternative for life-long learning.

Brinkerhoff and Koroghlanian (2005) investigated student computer skills and attitudes toward Internet delivered instruction. The investigation consisted of two phases. The findings of first phase indicated that students overall were generally neutral toward Internet-based instruction.

However, students with prior Internet experience regarded such instruction more positively. Phase two of this research concerned the rate of change in student computer skills and attitudes toward Internet-based instruction. According to the results, within a four- year time frame student skills and attitudes remained relatively stable with some positive shifts. Undergraduates were more receptive to select Internet-delivered courses in 2003 than they were in 1999.

Cragg et al. (2003) administered a survey among nurses of the Tianjin Municipality in China as part of a project for Web-based distance education. The purpose of the study was to examine nurses' professional knowledge sources as well as their computer and Internet access and attitudes. The attitudes of the nurses were generally positive, and there was evidence of rapidly increasing use of and access to computers and the Internet.

According to Bisciglia and Monk-Turner (2002), students who work fulltime and attend class off-campus have more positive attitudes toward distance learning when compared to others. They are also more likely to be motivated and willing to take other distance learning courses when given that option. Furthermore, when reviewing the literature to determine what types of students enroll in distance learning courses, Kahl and Cropley (1986) found that the individual who is typically enrolled in a distance based education system will be a married, nontraditional student who is most likely in the educational environment by choice. Consequently, most of these studies reflect that older learner orientations and individuals who demand opportunities for life-long learning have higher level of attitudes towards distance education.

Achievement and Attitude

The findings of related studies about the relationship between the attitude towards distance education and achievement do not support each other. For instance, Shih and Gamon (2001) analyzed the relationships between student achievement and certain variables such as attitude, motivation, learning styles, and selected demographics in a Web-based learning environment. The findings indicated that student attitude mean

scores, learning style scores, and selected demographics were not associated with their web-based learning achievement.

However, Smith and McNeils' (1993) study, which investigated graduate students' academic performances and attitudes towards distance education, revealed that lower grades of the host distance class reflect their negative attitudes.

Gender and Attitude

The results of previous studies, which describe the relationship between gender and attitude towards Internet or distance learning, conflict with one another. For instance, Carswell et al. (2000) compared the experiences of a group of undergraduate Internet students to those of conventional distance learning students on the same course. The number of females in the Internet study group was slightly higher than in the conventional study group. According to this figure, females were not discouraged from studying the course in the Internet version, although some previous studies (Shashaani, 1994; Durndell et al., 1995; Durndell & Thomson, 1997) suggested that women were likely to be less ready to have access to computers than their male counterparts.

Moreover, Su et al. (2005) investigated how students and instructors perceive online MBA course interactions. In general, students thought that the courses in the online program use technologies effectively in supporting learning and teaching. However, the findings indicated that male students have significantly more positive attitude towards the use of online technologies in the courses than female students do.

METHODOLOGY

Participants and the IBL Environment

The participants of the study were from an IBL environment, Distance Education Vocational School of Adapazari (DEVSA) at Sakarya University (SU), Turkey. Internet-based educational activities started at SU in 1998 and DEVSA has offered two-year online degrees in five different fields (i.e., computer technologies and programming, information management, industrial electronics, mechatronics, administration) since 2003.

The data were collected through a questionnaire that consists of a demographical information form and an attitude scale toward Internet-based learning (IBL), developed by the researcher. The data were collected during the summer school in 2006. The number of learners at DEVSA was 3039 and of this number, 1402 learners were taking summer courses.

A total of 834 learners voluntarily participated in this study. The participants completed an online form of the questionnaire anonymously in their password protected Intranet environment. However, 30 participants' responses on the questionnaire were incomplete, and therefore their data were excluded from statistical analyses.

Thus, a total of 804 participants were left in the final sample pool that formed 57% of the summer school population and 26% of the entire DEVSA student population.

Development of the Research Instrument

Initially, the researcher wrote 25 items, mostly modifying from prior distance education attitude scales in the literature (i.e., Insight, 2005; Brinkerhoff &

Koroghlanian, 2005; Maushak, & Ellis, 2003; Mayzer & Dejong, 2003) in order to develop an attitude scale in Turkish toward IBL.

Then, these items were represented on a five-point Likert Scale (from "1=strongly disagree," "2=disagree," "3=undecided," "4=agree," to "5=strongly agree"). The researcher consulted some experts in distance education about content validity of the scale. The experts suggested removing the two items, "I enjoy using the Internet" and "I think the Internet is a useful tool" from the scale since they were not specifically related to attitude towards IBL. Thus, initial pool of items in the scale included a total of 23 items after removing the two items.

The items in the attitude scale and questions about the demographical characteristics were presented to the participants in Turkish. The translation of the items from Turkish to English in this study was completed by a linguist and which was then validated by another linguist. The final scale in Turkish is included in the Appendix.

After collecting the online data from DEVSA students, both the Barlett's Test of Sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were performed to examine whether the data set was appropriate for a factor analysis. The KMO statistics showed 0.920 at a significance level of 0.000. Barlett's Test of Sphericity was also highly significant (chi-square = 7600.41 with 253 degree of freedom at P=0.000). Thus, these findings suggest that a factor analysis of the scale items would be appropriate.

Explanatory factor analysis (principle components, varimax rotation with Kaiser Normalization) was then applied to analyze the items and to clarify the structure of the scale. Examination of scree plot suggested presence of three factors with eigenvalues >1 (see Figure 1). However, results in the rotated component matrix indicated that item 5, "It is easy to participate in a course in the Internet environment", had very close factor loadings (.570, .524) for more than one component. Therefore, item 5 was removed from the scale by considering suggestions of the experts in educational research.

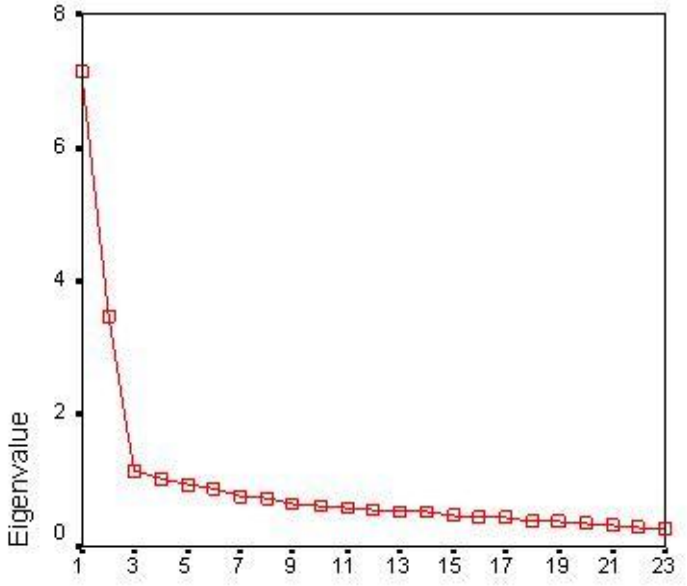

Figure: 1
Scree Plot

Factor analysis, then, with the same procedure was reapplied for retained 22 items in order to finalize the scale. Similar to the initial attempt, the analysis identified three factors with eigenvalues >1 (i.e., 6.85, 3.45, 1.13) and the scree plot confirmed the result. The final version of the scale consisted of three factors and they accounted for the 52.03 % of variance. In addition, factor loadings of the items below ± 0.45 were considered low. Therefore, one of the items, item 17, was suppressed, and finally 21 highlighted items retained in the scale (see Table: 1).

The factors were named according to the contents of the relevant items. The perceived characteristics subscale measures the learners' perceptions about the general characteristics of IBL. The affective subscale measures the learners' likings and feelings toward the IBL. The communication subscale measures the learners' thoughts and reflections about communication and interaction with others in an IBL environment in comparison to face-to-face education.

Table: 1
Rotated factor loadings and Cronbach's α coefficients for the three factors (subscales) of the attitude scale towards Internet-based learning (IBL).

Item	Factor 1: Perceived characteristics	Factor 2: Affective	Factor 3: Communication
Factor 1: Perceived characteristics α= 0.84			
22	0.758		
23	0.718		
15	0.647		
20	0.613		
13	0.595		
19	0.590		
8	0.567		
16	0.528		
21	0.505		
Factor 2: Affective α=0.85			
2		0.794	
3		0.790	
1		0.682	
11		0.650	
10		0.572	
18		0.548	
Factor 3: Communication α= 0.74			
7			0.659
14			0.650
9			0.642
6			0.612
12			0.569
4			0.510
17			0.431
Eigenvalue	6.85	3.45	1.13
% of variance	18.546	18.453	15.035

Overall α= 0.87, total variance explained is 52.03

As indicated in Table 1, the factor loadings of the relevant items differ between 0.758–0.505, 0.794-0.572 and 0.659-0.510 respectively for perceived characteristics, affective, and communication factors. These findings indicated the factor loadings of all items are over 0.50.

Table: 2
Item-total Score Correlations.

Item	Factors (Subscales)	Correlation Coefficient
22	Perceived characteristics	.750*
23	Perceived characteristics	.639*
15	Perceived characteristics	.754*
20	Perceived characteristics	.705*
13	Perceived characteristics	.727*
19	Perceived characteristics	.629*
8	Perceived characteristics	.660*
16	Perceived characteristics	.683*
21	Perceived characteristics	.436*
2	Affective	.800*
3	Affective	.795*
1	Affective	.700*
11	Affective	.793*
10	Affective	.701*
18	Affective	.737*
7	Communication	.695*
14	Communication	.590*
9	Communication	.723*
6	Communication	.625*
12	Communication	.679*
4	Communication	.652*

*P<0.01

Whereas the factor loading of some items are high, most of them can be considered as satisfactory. Hence, the factor loadings of the items may reflect an evidence for factorial validity and for the construct validity (Thompson & Daniel, 1996) of the attitude scale towards IBL.

This study, furthermore, investigated correlations of each item's score with the total subscale (factor) score in order to examine whether the items measure the same construct. The item-total score correlations for each of the subscales were above 0.4 and all of them were significant at the 0.01 level (see Table: 2).

The findings are consistent with the results of the factor analysis which support the construct validity of the subscales. Moreover, the internal reliability coefficients are high (α=0.84, α= 0.85) and sufficient (α=0.74) respectively for perceived characteristics, communication and affective subscales, and for the entire attitude scale (α=0.87) (see Table: 1). These findings suggest that the scale is a valid and reliable measure. The retained items and responding factors (subscales) in the attitude scale are represented in Table: 3.

Table: 3 The retained items on the attitude scale towards IBL.

Item No [a]	Subscale	Question
22	Perceived characteristics	It is the individual himself/herself who has control over his/her learning in the Internet environment. [b]
23	Perceived characteristics	Learning in the Internet environment requires too much individual effort.* [b]
15	Perceived characteristics	Every motivated individual can learn in the Internet environment.
20	Perceived characteristics	The Internet is an effective educational-instructional tool.
13	Perceived characteristics	Internet-based education saves time. [b]
19	Perceived characteristics	To me, Internet-based education is waste of time.* [b]
8	Perceived characteristics	Internet-based education removes time and place limitations. [b]
16	Perceived characteristics	Internet-based education is a good opportunity for individuals to develop themselves.
21	Perceived characteristics	Learning in the Internet environment requires too much motivation. *
2	Affective	Taking course in the Internet environment is enjoyable. [b]
3	Affective	I like learning in the Internet environment. [b]
1	Affective	The idea of Internet-based education is exciting. [c]
11	Affective	I would like to take a course in the Internet environment if I have chance to. [d]
10	Affective	All kinds of education can be provided in the Internet environment.
18	Affective	Internet-based education contributes greatly to life-long learning.
7	Communication	Communication is more natural and authentic in a face-to-face learning environment.*
14	Communication	Internet-based education limits social interaction.* [c]
9	Communication	Face-to-face education is of a better quality than Internet-based education.* [e]
6	Communication	It is difficult to share feelings and ideas in an Internet-based education environment.*
12	Communication	I prefer face-to-face education to Internet-based education.* [e]
4	Communication	It is more difficult to participate in a course in the Internet environment.* [c]

[a] The item number indicates the item order in the initial version of the scale (a total of 23 items)
[b] Modified from Insight's (2005) distance education learning environment survey (DELES).
[c] Modified from Brinkerhoff and Koroghlanian (2005).
[d.] Modified from Maushak, and Ellis (2003).
[e] Modified from Mayzer and Dejong (2003).
* Scored in a reverse way.

Finally, 9 items in the scale out of 21 were scored in a reverse manner, but the items of the final scale are not balanced in terms of direction of answering. In this way, the higher scores of the participants on the scale and subscales indicate better attitudes towards IBL.

Data Analysis

The data were analyzed by using the Statistical Package for Social Sciences (SPSS). After the explanatory factor analysis, independent t-test and one-way-analysis of variance (ANOVA) were conducted to analyze the differences between the mean scores. Moreover, post-hoc analyses were carried out by using Tukey's honest significant differences (HSD) to perform multiple comparisons among the means after the ANOVA procedures.

RESULTS

Learners' Scores on the Scale

Learners' average total scores and standard deviations on the three subscales are represented in Table 4. The averages per items are 3.91 (i.e., 35.24/9), 3.22 (i.e., 19.35/6), and 2.56 (i.e., 15.38/6) respectively for perceived characteristics, affective, and communication subscales. According to these results, the learners scored highest on the perceived characteristics subscale followed by the affective and communication subscales. These results suggest that in general the learners have positive attitudes and feelings towards the general characteristics of IBL and they enjoy studying in the IBL environment. However, the learners scored relatively lower on the communication subscale. This result implies that some learners may have negative attitudes towards the Internet-based communication or they prefer face-to-face communication.

Table: 4
Learners' scores on the subscales of IBL attitude scale.

Factors	Items	Possible range	Actual range	Mean	SD
Perceived Characteristics	9	9-45	9-45	35.24	6.74
Affective	6	6-30	6-30	19.35	5.52
Communication	6	6-30	6-30	15.38	5.22

Gender Comparisons

Male and female Turkish distance learners' scores on the three subscales of the attitude scale towards IBL are displayed in Table: 5.

Table: 5
Gender comparisons on the subscales of IBL attitude scale.

Subscale	N	Gender	Mean	SD	t	P
Perceived	491	Male	35.14	7.09	0.487	0.626
Characteristics	313	Female	35.38	6.15		
Affective	491	Male	19.96	5.68	-4.000*	0.000
	313	Female	18.38	5.13		
Communication	491	Male	15.79	5.37	-2.817*	0.005
	313	Female	14.73	4.90		

*P<0.05

According to these results, there were statistical differences between the male and female learners' mean scores on the two subscales (i.e. affective, communication) at 0.05 significance level. The higher mean score indicates the higher level of attitude. Therefore, these results reveal that, on the affective and communication subscales, male learners indicated significantly more positive attitudes towards the IBL than female learners did. However, male and female learners' mean scores on the perceived characteristicssubscale did not differ drastically. According to this result, both male and female distance learners perceived similar characteristics of Internet-based learning.

Marital status Comparisons

Table 6 shows the single and married Turkish distance learners' mean scores on the three subscales of the attitude scale towards IBL. The results indicated that there were significant differences between the single and married learners' mean scores on the three subscales of the IBL attitude scale. According to these results, on the perceived characteristics, affective and communication subscales, married learners expressed significantly more positive attitudes towards the IBL than the single learners did.

Table: 6

Marital status comparisons on the subscales of IBL attitude scale.

Subscale	N	Marital Status	Mean	SD	t	P
Perceived	569	Single	34.67	6.83	-3.706*	0.000
Characteristics	235	Married	36.59	6.31		
Affective	569	Single	18.25	5.41	-9.227*	0.000
	235	Married	22.01	4.86		
Communication	569	Single	14.73	5.20	-5.553*	0.000
	235	Married	16.94	4.94		

*P<0.05

Parental status Comparisons

The results shown in Table 7 indicated that there were significant differences between the parent and non-parent Turkish learners' mean scores on the three subscales of the IBL attitude scale.

Table: 7

Parental status comparisons on the subscales of IBL attitude scale.

Subscale	N	Parental Status	Mean	SD	t	P
Perceived	200	Parent	36.28	6.54	2.537*	0.011
Characteristics	604	Non-parent	34.88	6.77		
Affective	200	Parent	21.78	4.96	7.427*	0.000
	604	Non-parent	18.54	5.46		
Communication	200	Parent	17.19	5.12	5.77*	0.000
	604	Non-parent	14.78	5.11		

*P<0.05

In other words, the Turkish distance learners with children showed significantly more positive attitudes towards the IBL than the learners without children did on the perceived characteristics, affective and communication subscales.

Employment Status Comparisons

Employee and non-employee Turkish distance learners' scores on the three subscales of the attitude scale towards IBL are displayed in Table: 8.
The results revealed that the employee learners' mean scores on the affective and communication subscales of the IBL attitude scale were significantly higher than those of non-employee learners. According to this result, on the affective and communication subscales Turkish employee students expressed drastically more positive attitudes towards the IBL than the non-employee Turkish learners did. However, employee and non-employee learners' scores on the perceived characteristics subscale did not indicate significant difference at the 0.05 level. This finding suggest that both employee and non-employee Turkish distance learners perceived similar levels of characteristics of IBL.

Table: 8
Employment status comparisons on the subscales of IBL attitude scale.

Subscale	N	Employment	Mean	SD	t	P
Perceived	559	Employee	35.50	6.61	1.702	0.089
Characteristics	245	Non-employee	34.62	6.99		
Affective	559	Employee	19.86	5.40	4.002*	0.000
	245	Non-employee	18.18	5.62		
Communication	559	Employee	15.64	5.16	2.199*	0.028
	245	Non-employee	14.77	5.30		

*P<0.05

Age Comparisons

This study, furthermore, investigated whether the Turkish distance learners' attitudes differ depending on their ages.

Table:10
An analysis of age and attitudes of learners towards IBL.

Age groups	N	Perceived Characteristics Mean (S.D.)	Affective Mean (S.D.)	Communication Mean (S.D.)
(1) 17-21	339	34.49 (6.77)	17.48 (5.25)	14.41 (5.27)
(2) 22-26	207	34.65 (6.93)	18.88 (5.54)	15.02 (5.15)
(3) 27-31	79	37.30 (6.21)	22.15 (4.18)	16.02 (4.46)
(4) 32-36	62	37.32 (5.97)	22.09 (4.71)	17.20 (4.87)
(5) 37-41	54	36.20 (5.32)	22.96 (4.46)	17.75 (4.92)
(6) 42-56	63	35.61 (7.49)	21.60 (5.28)	17.09 (5.20)
F (ANOVA)		4.13*	25.15*	8.21*
Tukey HSD		(3)>(1)* (3)>(2)* (4)>(1)*	(3)>(2)>(1)* (4)>(2)>(1)* (5)>(2)>(1)* (6)>(2)>(1)*	(4)>(1)* (4)>(2)* (5)>(1)* (5)>(2)* (6)>(1)*

*P<0.05

The learners' ages were divided in to six age groups: 17-21, 22-26, 27-31, 32-36, 37-41 and 42-56. The ANOVA results in Table: 10 indicated that learners' ages have significant impact on the mean scores of perceived characteristics, affective and communication subscales of IBL attitude scale. In addition, a series of Tukey post-hoc tests showed that older learners tended to have statistically higher scores on the perceived characteristics, affective and communication subscales than the younger learners especially in the age groups 17-21 and 22-26. The learners in the age group 27-31 had significantly higher attitudes on the perceived characteristics subscale than those of younger learners in the age groups 17-21 and 22-26. Similarly, the learners in the age group 32-36 demonstrated significantly higher attitudes on the perceived characteristics subscale than the younger learners in the age group 17-21 did. In addition, the learners over age of 26 had significantly higher attitudes on the affective subscale than those of younger learners in the age groups 17-21 and 22-26. Moreover, the learners over age of 26 tended to have drastically higher attitudes on the communication subscale than those of learners in the age groups 17-21 and 22-26. According to these results, Turkish distance learners' attitudes towards the IBL were highly related to their ages. While the learners' ages increased, their attitude levels towards IBL increased notably as well. The findings indicated that the younger learners (e.g., under age of 27) tended to have notably lower attitudes towards the IBL than the older learners did. Finally, these findings suggest that the older learners, in general over age of 26, were more appreciative of IBL than the younger learners.

Grade Point Average (GPA) Comparisons

This study, moreover, investigated whether the Turkish distance learners' attitudes towards IBL differ depending on their GPAs. The learners' GPAs were divided in to four groups: excellent, good, moderate, and poor. According to the ANOVA results in Table 11, the learners' GPAs played a statistical role on the mean scores of perceived characteristics, affective and communication subscales of IBL attitude scale. Furthermore, Tukey tests indicated that learners with poor GPAs tended to have notably lower attitude scores on the perceived characteristics, affective and communication subscales than the learners with better GPAs (i.e., moderate, good and excellent). The attitude mean scores of the learners on the three subscales increased gradually while their GPAs increased. However, only the attitude mean scores of learners with poor GPAs differed significantly from the better GPAs while the differences between the other GPA classifications were not significant. These findings implied that the learners with poor GPAs were less appreciative of IBL in comparison to the others.

Table: 11

An analysis of GPA and attitudes of learners towards Internet-based learning.

GPA	N	Perceived Characteristics Mean (S.D.)	Affective Mean (S.D.)	Communication Mean (S.D.)
(1) Excellent	41	36.48 (7.12)	21.19 (5.76)	17.12 (6.63)
(2) Good	192	36.67 (5.56)	20.69 (5.07)	16.20 (5.50)
(3) Moderate	338	35.50 (6.88)	19.64 (5.34)	15.64 (5.51)
(4) Poor	233	33.44 (6.99)	17.49 (5.61)	14.01 (5.89)
F (ANOVA)		9.29*	15.17*	8.96*
Tukey HSD		(1)>(4)* (2)>(4)* (3)>(4)*	(1)>(4)* (2)>(4)* (3)>(4)*	(1)>(4)* (2)>(4)* (3)>(4)*

*P<0.05

DISCUSSION

The purpose of this study was to develop an instrument to analyze attitudes of Turkish distance learners towards IBL and determine whether their attitudes differ significantly depending on their demographical characteristics. The attitude scale towards IBL was indicated to be a valid and reliable measure. The high or satisfactory factor loadings of the items under the responding subscales, and correlations of each item's score with the total subscale score provide an evidence for the construct validity of the attitude scale. Besides, the internal reliability coefficients (α) were sufficient and high for the subscales (i.e., 0.84, 0.85, 0.74) and for the entire attitude scale (0.87). These findings suggest that the three subscales measure the attitude towards IBL in a valid and reliable manner.

Moreover, there is a consistency between the literature and the findings of this study regarding the attitudes of learners towards IBL. According to the findings, male Turkish distance learners demonstrated significantly more positive attitudes towards the IBL than the female Turkish distance learners did on majority of the subscales (i.e. affective, communication). This result supports the results of the previous studies (Tsai et al., 2001; Durndell & Haag, 2002; Schumacher & Morahan-Martin, 200; Su et al., 2005) which revealed that male students have significantly more positive attitudes towards the use of Internet and other online technologies than female students do. Therefore, in this study, statistically less positive attitude levels of females towards IBL on majority of the subscales can be explained by their lower attitudes towards Internet and other online technologies which found in the prior studies.

The results of this study also showed that the Turkish distance learners' GPAs played a significant role on the mean scores of the three subscales. The post-hoc tests indicated that learners with poor GPAs tended to have notably lower attitude scores on the perceived characteristics, affective and communication subscales than the learners with better GPAs. This finding supports the literature (i.e., Smith & McNeils, 1993) that revealed that lower grades of the learners may reflect their negative attitudes towards distance education.

The results of this study, in addition, indicated that married Turkish distance learners and Turkish distance learners with children had significantly more positive attitude levels towards IBL on all subscales than those of single learners and learners with no children. Besides, on majority of the subscales (i.e. affective, communication) working Turkish distance learners had drastically more positive attitude levels towards IBL than those unemployed learners. Furthermore, the results indicated that learners' ages have significant impact on the mean scores of the all subscales. According to the results of post-hoc tests, in general, Turkish older learners (e.g., over age of 26) were more appreciative of IBL than the younger learners. These findings support the findings of prior related studies (O'Lawrence, 2006; Hannay & Newvine, 2006; Maushak & Ellis, 2003; Sorensen 1995; Cragg et al., 2003; Bisciglia & MonkTurner; 2002; Kahl & Cropley, 1986) which reflected that older or adult learners have more positive attitudes toward distance education in the forms of web-based (Cragg et al., 2003), interactive television-based (Sorensen, 1995), mixed-medium distance education (Maushak & Ellis, 2003). The consistency between the findings of this study and the literature suggested that adult learners' attitudes toward IBL can be generalized to various forms of distance education such as web-based, interactive television-based and mixed-medium distance education.

Moreover, according to the findings of this study and the related literature, adult learners in different societies such as Turkey, United States (e.g., Sorenson, 1995; O'Lawrence, 2006; Hannay & Newvine, 2006) and China (e.g., Cragg et al., 2003) tend to have similar attitudes toward various forms of distance learning.

CONCLUSION AND FUTURE STUDY

In summary, the findings of this study revealed that male distance learners, older or adult distance learners with family and work responsibilities and the learners with better GPA's are more appreciative of IBL. As previously discussed, findings derived from this study mostly consistent with the findings of prior distance learning attitude research (e.g., O'Lawrence, 2006; Hannay & Newvine, 2006; Maushak & Ellis, 2003; Sorensen, 1995; Cragg et al., 2003; Bisciglia & Monk-Turner, 2002; Kahl & Cropley, 1986). The consistency between the literature and the results of this study suggests that older or adult learners in different societies such as Turkey, China (e.g., Cragg et al., 2003) and the U.S. (e.g., O'Lawrence, 2006; Hannay & Newvine, 2006) demonstrate similar attitudes toward various forms of distance learning (e.g., web-based, interactive TV-based and mixed-medium distance education).

The factor analysis and internal reliability coefficients, in addition, revealed that the attitude scale used in this study is a valid and reliable measure. The consistency between the literature and the results of this study may also reflect an evidence for the validity of the scale. The scale, thus, appears to be a promising instrument to assess the attitude levels of individuals towards IBL. However, the scale developed in this study was applied in Turkish, although most of the items were adapted from the distance learning attitude scales in English. Therefore, researchers are encouraged to adapt the scale into different languages to further analyze its reliability and validity in IBL or online learning or environments.

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APPENDIX

The scale in Turkish with retained items after the factor analysis.

Faktor analizi sonucu Internet-tabanlı öğrenme tutum ölçeğinde kalan maddeler.

Madde No.	Faktörler	Maddeler
22	Algılanan Özellik	Internet ortamında öğrenmenin kontrolü bireydedir
23	Algılanan Özellik	Internet ortamında öğrenmek gereğinden fazla bireysel gayret gerektiriyor. [a]
15	Algılanan Özellik	Motive olmuş herkes Internet ortamında öğrenebilir.
20	Algılanan Özellik	Internet etkili bir eğitim-öğretim aracıdır.
13	Algılanan Özellik	Internet-tabanlı eğitim zamandan tasarruf sağlar.
19	Algılanan Özellik	Internet tabanlı eğitim bence zaman kaybıdır. [a]
8	Algılanan Özellik	Internet-tabanlı eğitim zaman ve mekan kısıtlamalarını ortadan kaldırıyor.
16	Algılanan Özellik	Internet-tabanlı eğitim bireylerin kendilerini geliştirmeleri için iyi bir fırsattır.
21	Algılanan Özellik	Internet ortamında öğrenmek gereğinden fazla motivasyon gerektiriyor. [a]
18	Algılanan Özellik	Internet-tabanlı eğitim yaşam-boyu eğitime büyük katkılar sağlamaktadır.
2	Duyuşsal	Internet ortamında ders almak zevklidir.
3	Duyuşsal	Internet ortamında öğrenmek hoşuma gidiyor.
1	Duyuşsal	Internet-tabanlı eğitim düşüncesi heyecan vericidir.
11	Duyuşsal	Fırsatım olursa ilerde Internet ortamında ders almak isterim.
10	Duyuşsal	Internet ortamında her türlü eğitim verilebilir.
7	İletişim	Yüz-yüze eğitim ortamında iletişim daha doğal ve gerçektir. [a]
14	İletişim	Internet-tabanlı eğitim ortamı sosyal etkileşimi kısıtlar. [a]
9	İletişim	Yüz-yüze eğitim Internet-tabanlı eğitime göre daha kalitelidir.[a]
6	İletişim	Internet-tabanlı eğitim ortamında duygu ve düşünceleri paylaşmak zordur. [a]
12	İletişim	Yüz-yüze eğitimi Internet-tabanlı eğitime tercih ederim. [a]
4	İletişim	Internet ortamında derse katılmak daha zordur. [a]

[a] Ters yönde puanlanmıştır.