THE EFFECTS OF DIFFERENT INTERACTION TYPES IN WEB-BASED TEACHING ON THE ATTITUDES OF LEARNERS TOWARDS WEB BASED TEACHING AND INTERNET

Ozgen KORKMAZ
Mevlana University,
Education Faculty
Department of Computer Education
and Instructional Technology,
Konya/TURKEY

ABSTRACT

It might be said that attitudes impact success directly in web-based teaching and timely and appropriate fulfillment of learners' expectations bear utmost significance for their success. From this perspective a properly designed web supported teaching application can provide positive contribution as well to learners' attitudes towards web supported teaching and internet. Based on this premise, the objective of present research is to explore the effects of different interaction types in web-based teaching setting on the attitudes of learners towards web-based teaching and internet. An experimental pattern with pretest-posttest control group was used in the study. Study group of research consists of 77 students.

Research data have been compiled via Attitude towards Internet Scale (α=0,77) and Attitude towards Web-based Learning Scale (α=0,86). In one of the experimental groups, synchronous web-based training interaction and in the other group asynchronous web-based training interaction and in the control group learner-content only interaction has been provided. In data analysis; standard deviation, arithmetical means, one-way variance analysis and LSD tests have been employed.

As a result: Web-based training applications with synchronous interaction, compared to web-based training application with learner-content only interaction, have significantly higher contribution on learners' attitudes towards web-based teaching.

In Web-based teaching settings different types of interaction have no effect on learners' attitudes towards internet which may be attributed to the fact that learners' attitudes towards internet were already in quite high levels prior to the procedure.

Keywords: **Web-supported teaching, internet, attitude, interaction.**

INTRODUCTION

In today's world computers are used widely not only in all phases of education but in daily life as well. The use of information and communication technologies parallel to this process introduced with itself different concepts hence it can be asserted that to keep up with developing technology, the humans are in increasing need of greater skills each day and computer use in education is becoming a requisite in terms of social grounds.

Besides, the function of computer as a greater motivator for learners, as a supporter of life-long learning, as a supporter of flexibility in teaching programs are amongst the other leading causes of the use of computer in education (Alkan, 1997; Keser,1988).

What is expected from educational institutions that bear the responsibility of raising individuals who meet the human profile required by society is to raise human beings equipped with knowledge and skills; in other words training people who can access, use, transfer and produce the knowledge and employ technology and know how to learn by oneself (Akkoyunlu & Kurbanoğlu, 2003).

Accordingly, learning is regarded as a concept that can come to surface not only in schools or certain centers but in all phases of life and in all likely situations (Reigeluth, 1999). The principal medium to gain these required skills to people without restriction of school or any other space or time limitation is web-based teaching (Usta, 2007).

Web-based learning is the most rapidly developing type of distance education as well (Imel, 1997; Singh & Reed, 2001; Perraton, 1998). Web-based learning is also known as internet based learning (Barron, 1998). Web- based learning allows the learners to access course materials in all the times and spaces they reach internet and establish synchronous or asynchronous communication with the rest of learners (Jyothi, McAvinia & Keating, 2012). Parallel to the increased use of internet, the application of online communication tools in educational settings has gained popularity. The use of computer and internet supported communication channels in elevating communication level has become important. Computer and internet based communication technologies provide the instructor and learners a setting that synchronous and asynchronous technologies can be employed simultaneously (Romiszowski & Mason, 1996).

Communication is important not only in face-to-face settings but in web-based settings as well (Moore, 1989; Driscol, 2002; Garrison, 2003). As stated by Kearsley (1998) communication in its general term is the center of education's social expectations and in its specific meaning it is the primary objective of a greater educational process and a feedback that is needed between learner-instructor in the stage of learning. Holmberg (1989) also emphasizes that communication is the essence of distance education and communication is a major component fulfilling learner satisfaction in web-based learning settings. Romiszowski and Mason (1996) mention the existence of 3 different communication venues in web-based settings which are reciprocal communication, multi-channel communication, synchronous and asynchronous communication. Amongst them, synchronous communication takes place in real time between two or more people in class, face-to-face discussion or telephone interview. The primary benefit of synchronous technologies is that instructor and learner can see each other whenever needed (Romiszowski and Mason, 1996). The primary restriction of such online communication form is to be able to find the most appropriate time for everyone and the necessity to be online synchronously. The sample technologies providing synchronous communication are chat rooms, audio and visual conferences.

What is meant by synchronous training however is the kind of education depending on time, offered face-to-face in the same setting. This training model is also the name of traditional teaching model. Video conference system can also be included in this type of education model.

Asynchronous training on the other hand is independent of space and time restrictions but it can also be offered at certain intervals in a specific time and place as well. Internet based training is independent of time and space restrictions. Nonetheless if the trainees are taken to face to face education and exams at certain intervals this type of education is then named as semi-independent of time (Jonasssen, 2000).

Moore (1989) sets forth that there are three main interactions in distance education setting which are learner-content, learner-instructor and learner-learner interactions. Learner-content interaction is the interaction between learner and study subject or in other words the content. Learner-instructor interaction takes place between learner and field expert preparing the study materials or other experts assigned as instructors. Finally learner-learner interaction is the interaction amidst learners individually or as a group with or without an instructor.

The output underlined in several researches aiming to explore and develop interaction in distance education programs points to the importance of interaction in educational settings.

Fulford and Zhang (1993) in their research stated that learners' perception on the effect of interaction in distance education is a substantial determiner of the satisfaction learners receive from the course. In the research, the necessity to employ strategies enabling learner satisfaction has been emphasized. It has long been known that interaction is also a key component in traditional class settings too. McCroskey and Andersen (1976) reported that learners with high levels of communication experiences in class are, compared to lower level learners, more successful (Cited in Eunjoo, 2006).

After demonstrating that communication has three main forms in online training and that it is a main determiner of success, the next question that can be directed by educators is that which interaction can provide the best contribution to learning. To give an answer to this question Soo and Bonk (1998) conducted a research to detect which type of interaction is most important and effective in distance education. Soo and Bonk who analyzed synchronous learner-learner, learner-instructor, learner-content and asynchronous learner-learner, learner-instructor, learner-content variables conducted their research with eight experienced distance learning educators by making use of Delphi technique.

Their study puts forth that there is a noticeable inclination towards asynchronous interaction and asynchronous learner-learner interaction and learner-instructor interaction has been selected by the participants as the most important interaction for a successful online distance education.

At the end of this study the researchers suggested that in order to increase learner-learner interaction and learner-instructor communication, online distance education designers and educators need to be more attentive in using asynchronous technologies.

It can be stated that in the sufficient contribution of web supported teaching to academic success, learners' attitudes towards web supported teaching and internet also play crucial roles. Attitude is described as "long-term emotion, faith or behavioral inclination that is strictly organized" (Cüceloğlu, 1998). Khine (2001)

On the other hand defines attitude as the state of mental readiness that is formed after one's experiences and affecting a person's stand in the face of a situation. Ozgür and Tosun (2010) report that attitudes impact success directly in web-based teaching and timely and appropriate fulfillment of learners' expectations bear utmost significance for their success.

From this perspective a properly designed web supported teaching application can provide positive contribution as well to learners' attitudes towards web supported teaching and internet. Based on this premise, in present study too, the objective is to detect whether web supported teaching setting with learner-content only interaction and settings with synchronous and asynchronous learner-learner and learner-instructor interactions have a differentiating effect on learners' attitudes towards web based teaching and internet.

In line with that framework, below given questions have been sought for answers:

- **Prior to the procedure, are the groups equal to each other in terms of their attitudes towards webbing supported teaching and internet?**
- **Do different interaction methods change learners' attitudes towards web supported teaching?**
- **Do different interaction methods change learners' attitudes towards internet?**

METHOD

Research Model

An experimental pattern with pretest-posttest control group was used in the study. Independent variable of the research is web-supported learning setting that is designed according to different interaction strategies, dependent variables are learners' attitudes towards web-based learning and internet. To conduct the research, experimental and control groups have been formed by sticking to neutrality principle.

Study Group

Study group of research consists of collectively 77 in Ahi Evran University Faculty of Education in 2010-2011 spring term and receiving Computer II course as based on distance education who are completed all data gathering tools. These students were randomly assigned equally to experimental and control groups. Randomized method was employed in detecting which groups were to be in experimental group and which groups were to be in control group. Distribution of learners with respect to groups and gender is as summarized in Table 1.

Table: 1
Distribution of Learners with respect to Groups and Gender

Groups	Female	Male	Total
I. Experimental Group (synchronous interaction)	16	10	26
II. Experimental Group (asynchronous interaction)	15	10	25
Control Group	15	11	26
Total	46	31	77

Experimental Procedures

During the experimental procedure in the research, below given steps have been followed:

- **In order to detect if experiment and control groups were equal with respect to research variables and pre-information internet attitude scale and web-based learning scale, pretests were conducted on both groups. At the end of procedure in order to determine the effect of dependent variable on independent variable, a posttest has been conducted.**
- **Research application was held between dates 14 February -1 April 2011, 4 times in a week, total 8 weeks. Scale applications were conducted during the first and final weeks and in the remaining 6 weeks web-based distance learning application was realized.**

Experimental Group I

For the learners in 1st experimental group synchronous learner-learner, learner-instructor and learner-content interaction have been offered. By providing exclusive definitions of user name and password for the learners in this group their access to the chat platform in the system has been enabled. Learners' questions related to content have been synchronously answered and corrected in chat room. In the lesson part of experimental procedure, face-to-face and asynchronous interactions with learners have been avoided and particular care has been given to conduct all interaction in this chat platform.

In order to ensure student-teacher and student-student interaction based on synchronous web-based distance education within the framework of the program, students and teachers as specified hours online for content oriented discussions and question-answer activities. A sample display from the chat platform that interaction took place is as given in Figure: 1.

Experimental Group II

For the learners in 2nd experimental group asynchronous learner-learner, learner-instructor and learner-content interaction were offered. By providing exclusive definitions of user name and password for the learners in this group their access to the forum platform in the system has been enabled. Learners' questions related to content have been asynchronously answered and corrected in forum setting.

Control Group

The learners in control group were allowed to establish interaction with the content only; learner-learner or learner-instructor interactions were not let. By providing exclusive definitions of user name and password for the learners in this group their access to the forum and platforms other groups accessed was denied. Learners' questions related to content have not been answered and corrected and they were told to do internet research for their questions.

Teaching Material

Parallel to the web-based distance education approach covered in this research, a web site containing basic concepts relevant of internet based teaching, internet based teaching in the world and Turkey, content design in internet based training, learning and motivation has been created. In this web site topic explanations have been supported via various videos. For the visual design of site, Dreamweaver, and for its content design Articulate, for learner management system Ms-Sql and Php programs have been utilized. In this web site there is a learner management system where learners' lesson study hours, the subjects studied, the answers given to exercises and similar kind of information are stored.

Learners can access the topics with their own passwords; yet by means of the exclusive group coding of these passwords their access to chat and forum platforms have been controlled.

Data Gathering Tools

Data of present research have been gathered via Attitude towards Internet Scale and Attitude towards Web Based Learning Scale and the details of scales are as given below:

Attitude Towards Internet Scale

In order to measure learners' attitude towards internet "Attitude towards Internet Scale" which was developed by Tavşancıl and Keser (2001) and of which validity and reliability was tested has been employed. Five Likert type scale consists of 25 items and 5 factors.

Five factors explain 55,381% of total variance. The first 10 items in the scale are negative and the rest 15 items are positive. Negative items have been reversely coded. According to the analyses of Tavsancıl and Keser (2001); internal consistency coefficient (Cronbach α)of the first factor "Internet Denial" consisting of 10 items is 0,87, internal consistency coefficient of the second factor "Internet Trust" consisting of 4 items is 0,72, internal consistency coefficient of the third factor "Belief in Internet Benefits" consisting of 4 items is 0,72, internal consistency coefficient of the fourth factor "Belief in Internet Benefits" consisting of 4 items is 0,71 and internal consistency coefficient of the fifth factor "Enjoying Internet's Benefits" consisting of 3 items is 0,77.Internal consistency coefficient of the overall scale has been measured to be 0,79. At the end of factor analysis conducted for the study group of research KMO=0,815, Bartlet=985,868, p<0,000 have been detected and factor loads of all items have been found as above 0,30. Five factors explain 55,063% of total variance. Internal consistency coefficients (Cronbach α) of factors have been calculated respectively 0,747, 0,750, 0,654, 0,657 and 0,572 and internal consistency coefficient for the overall scale has been detected as 0,866. The smallness of some of the internal consistency coefficients in this study group compared to the original study may be related to the smallness of study group.

Attitude Towards Web-Based Learning Scale

In the research, to the end of detecting learners' attitude towards web based learning, "Attitude towards Web- Based Learning Scale" developed by Erdoğan et al. (2007) and of which validity and reliability was tested has been employed. Five Likert type scale consists of 26 items and 2 factors.

These two factors explain 47,308% of total variance. According to factor analysis conducted by Erdoğan et al. (2007); the first factor consisting of 17 items is named as "Effectivity of Web-Based Teaching" and the second factor including 9 items is named as "Resistance against Web-Based Teaching".

The first factor is made up of positive and the second factor negative items. Negative items have been reversely coded. Internal consistency coefficient for the overall scale has been calculated as 0,861. At the end of factor analysis conducted for the study group of research KMO =0,731, Bartlet=907,455, p<0,000 have been detected. Two factors explain 38,3% of total variance. Internal consistency coefficient for the overall scale has been detected as 0,861.

Data Analysis

Each of the items in both attitude scales has been graded as never (1), rarely (2), occasionally (3), generally (4), always (5). The scores obtained by learners' answers to five Likert type scale need to be exchanged as standard scores the lowest of which is 20 and the highest is 100. In the exchange of raw scores into standard score below given formula can be used:

$$X_{\text{standardscore}} = \frac{X_{\text{raw score}}}{\text{number of items in scale.}} x20$$

The levels corresponding to the scores obtained from sub-scales can be summarized such: 20-51: Low Level; 52-67: Medium Level 68-100: High Level. On the collected data frequency, percentage, arithmetical means, t, ANOVA, LSD and Pearson's r correlation statistics have been employed. In testing the differentiations and relations, 0,05 level of significance has been the criterion.

RESULTS

The equality of the groups with respect to web supported teaching and internet attitudes prior to test procedure.

In Table 2, the averages related to equality of groups with respect to their attitudes towards web-based teaching prior to experimental procedure are summarized.

Table: 2
The Averages related to Groups' Attitudes towards Web supported Teaching with respect to Pretest

Attitude toward Web-Based Teaching	I. Experimental Group (N=26)		II. Experimental Group (N=25)		Control Group (N=26)	
	$\overline{X}$	sd.	$\overline{X}$	sd.	$\overline{X}$	sd.
Effectivity of WEB Based Teaching	72,42	10,20	71,20	11,05	71,12	10,10
Resistance against Web Based Teaching	68,69	12,42	68,08	13,13	65,58	11,89
Total	71,27	9,61	70,16	10,93	69,15	9,20

In Table 2, as the pretest scores related to learners' attitudes towards web supported learning with respect to different types of interaction are analyzed it is detected that with respect to groups learners average scores related to "Effectivity of WEB Based Teaching" factor change between 71,12 and 72,42 and average scores related to "Resistance against Web Based Teaching" factor change between 65,58 and 68,69 whereas total attitude scores change between 69,15 and 71,27.

Variance analysis results manifesting if these differences are meaningful are as presented in Table 3.

Table: 3
The Differentiation in Learners' Attitudes towards Web-Based Teaching Pretest Scores with respect to Different Types of Interaction

Variables		Sum of Squares	df	Mean Square	F	Sig.	LSD
Effectivity of WEB Based Teaching	Between Groups	27,701	2	13,851	,127	,881	-
	Within Groups	8085,000	74	109,257			
	Total	8112,701	76				
Resistance against Web Based Teaching	Between Groups	141,262	2	70,631	,453	,637	-
	Within Groups	11531,725	74	155,834			
	Total	11672,987	76				
Total	Between Groups	58,218	2	29,109	,295	,745	-
	Within Groups	7297,860	74	98,620			
	Total	7356,078	76				

As demonstrated in Table 3, learners' attitudes towards web-based teaching pretest scores with respect to different interaction types do not differ in terms of both factors (Effectivity of Web Based Teaching:

$F_{(2-74)}$=0,127; p>0,05; Resistance against Web Based Teaching: $F_{(2-74)}$=0,453; p>0,05) and total score ($F_{(2-74)}$=0,295; p>0,05). Hence it can be argued that prior to procedure the groups were equal in terms of their attitude towards web based teaching.

In Table 4, the averages related to the quality of groups in terms of their attitude towards internet prior to procedure have been summarized.

Table: 4
The Averages related to Groups' Attitudes towards Internet with respect to Pretest

Attitude toward Internet	I. Experimental Group (N=26)		II. Experimental Group (N=25)		Control Group (N=26)	
	$\overline{X}$	sd.	$\overline{X}$	sd.	$\overline{X}$	sd.
Internet Denial	78,15	13,95	80,80	9,98	77,31	13,83
Internet Trust	68,27	16,18	68,40	13,90	75,00	18,28
Belief in Internet's Benefits	81,73	12,32	73,20	12,74	76,54	12,63
Enjoying Internet	79,62	12,32	72,00	15,81	75,58	13,95
Enjoying Internet's Benefits	77,19	12,54	77,60	13,60	77,19	14,63
Total	77,35	9,62	75,80	9,67	76,46	11,20

In Table 4, as the pretest scores related to learners' attitudes towards internet with respect to different types of interaction are analyzed.

Table: 5
The Differentiation in Learners' Attitudes towards Internet Pretest Scores with respect to Different Interaction Types

Variables		Sum of Squares	df	Mean Square	F	Sig.	LSD
Internet Denial	Between Groups	168,350	2	84,175	,517	,598	
	Within Groups	12038,923	74	162,688			-
	Total	12207,273	76				
Internet Trust	Between Groups	765,586	2	382,793	1,450	,241	
	Within Groups	19533,115	74	263,961			-
	Total	20298,701	76				
Belief in Internet's Benefits	Between Groups	945,098	2	472,549	2,994	,056	
	Within Groups	11679,577	74	157,832			-
	Total	12624,675	76				
Enjoying Internet	Between Groups	740,747	2	370,373	1,869	,161	
	Within Groups	14662,500	74	198,142			-
	Total	15403,247	76				
Enjoying Internet's Benefits	Between Groups	2,806	2	1,403	,008	,992	
	Within Groups	13718,077	74	185,379			-
	Total	13720,883	76				
Total	Between Groups	30,745	2	15,372	,148	,863	
	Within Groups	7692,346	74	103,951			-
	Total	7723,091	76				

Its detected that according to groups, learners' average scores on "Internet Denial" factor vary between 77,31 and 80,80.

"Internet Trust" factor change between 68,27 and 75,00; "Belief in Internet's Benefits" factor change between 73,20 and 81,73.

As demonstrated in Table 5, learners' attitudes towards internet pretest scores with respect to different interaction types do not differ in terms of both factors (Internet Denial: $F_{(2-74)}$=0,517; p>0,05; Internet Trust: $F_{(2-74)}$=1,450; p>0,05.

Belief in Internet's Benefits: $F_{(2-74)}$=2,994; p>0,05; Enjoying Internet: $F_{(2-74)}$=1,869; p>0,05; Enjoying Internet's benefits: $F_{(2-74)}$=0,008; p>0,05) and total score ($F_{(2-74)}$=0,148; p>0,05).

Hence it can be argued that prior to procedure; the groups were equal in terms of their attitude towards internet.

With respect to Different Interaction Methods the Attitudes of Learners towards Web

Supported Teaching

In Table 6, as regards attitude towards web supported teaching, groups' differences in average scores between posttest-pretest with respect to different types of interaction have been summarized.

Table: 6
Score Averages of Groups' Attitudes towards Web Supported Teaching with respect to Posttest- Pretest Score Differences

Attitude toward Web Based Teaching	I. Experimental Group (N=26)		II. Experimental Group (N=25)		Control Group (N=26)	
	$\overline{X}$	sd.	$\overline{X}$		$\overline{X}$	sd.
Effectivity of WEB Based Teaching	8,31	10,83	1,56	8,43	-4,96	13,77
Resistance against Web Based Teaching	9,46	11,44	-,7200	18,79	-3,46	20,86
Total	8,17	8,45	-,1000	10,45	-5,02	11,37

As regards attitude towards attitudes towards web based learning with respect to posttest-pretest score differences in Table 6 are analyzed, according to groups, learners average score differences related to "Effectivity of WEB Based Teaching" factor vary between -4,96 and 8,31. Average score differences related to "Resistance against Web Based Teaching" factor change between -3,46 and 9,,49 and total attitude difference scores are between -5,02 and 8,17.

Table: 7
The Differentiation between Learners' Attitudes towards Web Based Teaching Posttest-Pretest Scores with respect to Different Types of Interaction

Variables		Sum of Squares	df	Mean Square	F	Sig.	LSD
Effectivity of WEB Based Teaching	Between Groups	2289,158	2	1144,579	9,027	,000	Between I. Exp. Group and II Exp Group, Control Group. Between II Exp. Group and Control Group
	Within Groups	9382,660	74	126,793			
	Total	11671,818	76				
Resistance against Web Based Teaching	Between Groups	2404,712	2	1202,356	3,932	,024	Between II Exp. Group and Control Group
	Within Groups	22625,963	74	305,756			
	Total	25030,675	76				
Total	Between Groups	2309,957	2	1154,979	11,187	,000	Between II Exp. Group and Control Group
	Within Groups	7640,212	74	103,246			
	Total	9950,169	76				

Variance analysis results manifesting if these differences are meaningful are as presented in Table: 7As demonstrated in Table: 7, different types of interaction have brought to surface a meaningful differentiation on total difference scores of learners' attitude towards web-based learning (F(2-74)=11,187; p<0,001) and "Effectivity of Web Based Teaching" (F(2-74)=9,027; p<0,001) as well as "Resistance against Web Based Teaching" (F(2-74)=3,932; p<0,005) factors. According to variance analysis results factor's (inter groups) rate of explaining total variance in dependent variable is for Effectivity of Web Based Teaching factor ŋ2=0.243; for Resistance against Web Based Teaching factor ŋ2=0.106 and for the total ŋ2=0.302.

As stated with this finding, of the total variance in learners' attitude towards web based learning for the first factor 24%, for the second factor 10,2% and for the total 30,2% are originated from testing procedure.

Since ŋ2>0,14 for the total score it can be alleged that the impact size of experimental procedure is vast (Büyüköztürk, 2002).

According to results of LSD that is conducted to determine the source of differentiation caused by different interaction types, the meaningful differences between total scores are caused by synchronous interaction group and the control group.

Web-based learning attitude difference of score average of the group with synchronous interaction is $\overline{X}$ =8,17 whereas the same average for the control group is $\overline{X}$ =-5,02. Hence it can be argued that meaningful differentiation is in favor of the group where synchronous interaction was provided. A similar kind of differentiation is met when the factors are analyzed as well.

However in "Effectivity of Web Based Teaching" factor, between synchronous interaction group ($\overline{X}$ =8,31) and asynchronous interaction group ($\overline{X}$ =1,56) there is a differentiation in favor of synchronous interaction group ; between asynchronous interaction group and control group ($\overline{X}$ =-4,96), there is a differentiation in favor of asynchronous interaction group.

Accordingly it can be asserted that web-based teaching applications where synchronous interaction is provided contribute more to learners' web supported teaching attitudes in terms of "Effectively of Web Based Teaching" factor compared to web-based teaching application where both asynchronous interaction group and control group are provided.

Table: 8
Averages of Groups' Attitudes towards Internet with respect to Posttest-Pretest Score Differences

Attitude towards Internet	I. Experimental Group (N=26)		II. Experimental Group (N=25)		Control Group (N=26)	
	$\overline{X}$	sd.	$\overline{X}$		$\overline{X}$	sd.
Internet Denial	7,73	15,50	3,20	9,38	2,69	13,47
Internet Trust	11,12	20,19	13,92	15,44	3,46	17,88
Belief in Internet's Benefits	5,62	13,11	7,72	12,18	2,88	14,50
Enjoying Internet	5,19	11,62	8,60	13,35	15,77	40,76
Enjoying Internet's Benefits	5,62	12,98	0,88	13,47	-0,85	17,19
Total	6,70	10,03	5,46	7,57	4,65	11,33

On the other hand web-based teaching applications where synchronous interaction is provided have a greater effect of differentiation on learners' attitudes towards web supported teaching in terms of "Resistance against Web Based Teaching" factor and total score compared to the application where only control group is provided. Learners' Attitudes towards Internet with respect to Different Methods of Interaction. In Table: 8, posttest-pretest score average differences of groups' attitudes towards internet are summarized with respect to different types of interaction.

As posttest-pretest score average differences of groups' attitudes towards internet with respect to different types of interaction are analyzed it surfaces that according to groups, learners' average scores related to "Internet Denial" factor vary between 2,60 and 7,73; in "Internet Trust" factor it changes between 3,46 and 11,12; in "Belief in Internet's Benefits" factor it varies between 2,88 and 7,72 in "Enjoying the Internet" factor it goes between 15,77 and 5,19, in "Enjoying Internet's benefits" factor it changes from -0,85 to 5,62.

Total attitude score difference averages are between 4,65 and 7,70. Variance analysis results manifesting if these differences are meaningful are as presented in Table 9.

Table: 9
The Differentiation between Learners' Attitudes towards Internet Posttest-Pretest Scores with respect to Different Types of Interaction

Variables		Sum of Squares	df	Mean Square	F	Sig.	LSD
Internet Denial	Between Groups	398,333	2	199,167	1,165	,318	-
	Within Groups	12650,654	74	170,955			
	Total	13048,987	76				
Internet Trust	Between Groups	1504,032	2	752,016	2,328	,105	-
	Within Groups	23906,955	74	323,067			
	Total	25410,987	76				
Belief in Internet's Benefits	Between Groups	300,230	2	150,115	,847	,433	-
	Within Groups	13115,848	74	177,241			
	Total	13416,078	76				
Enjoying Internet	Between Groups	1514,047	2	757,024	1,139	,326	-
	Within Groups	49184,654	74	664,657			
	Total	50698,701	76				
Enjoying Internet's Benefits	Between Groups	580,990	2	290,495	1,347	,266	-
	Within Groups	15954,178	74	215,597			
	Total	16535,169	76				
Total	Between Groups	55,193	2	27,597	,288	,751	-
	Within Groups	7098,362	74	95,924			
	Total	7153,555	76				

As illustrated in Table 8, learners' attitudes towards internet posttest-pretest scores with respect to different types of interaction do not differ for factors (Internet Denial: $F_{(2-74)}$=1,165; p>0,05; Internet Trust: $F_{(2-74)}$=2,328; p>0,05; Enjoying Internet's benefits: $F_{(2-74)}$=0,847; p>0,05 ; Enjoying the Internet: $F_{(2-74)}$=1,139; p>0,05; Enjoying Internet's benefits: $F_{(2-74)}$=01,347; p>0,05) or total score ($F_{(2-74)}$=0,288; p>0,05).

Accordingly it can be stated that in web-based teaching platforms different types of interaction are not effective on learners' attitudes towards internet.

DISCUSSION and CONCLUSION

On learners' attitudes towards web supported teaching, web-based teaching applications where synchronous interaction is provided, as regards "Effectivity of Web Based Teaching" factor, contribute significantly more to web-based teaching than the applications where asynchronous interaction is provided and also the application where control group is provided. On the other hand, web-based teaching applications where synchronous interaction is provided, as regards "Resistance against Web Based Teaching" factor and total score, contribute more significantly on learners' attitudes towards web supported teaching compared to the application where control group is provided.

In a research conducted by Lee and Paulus (2001) it is stated that in web-based learning settings the basic interaction types are; learner's interaction with the self, learner-learner interaction, learner-content interaction and learner-instructor interaction.

In web-based learning platforms particularly adults consider all these four interaction types significant however it is also noted that in web-based learning settings these interaction types need to be benefited in a balanced way. Moore and Kearsley (1996) also report that these four interaction types bear vital importance for distance education. Within that framework the "vital question" is not whether or not there is interaction or the type of interaction to choose but to determine if these four different interactions need to be provided in a balanced way synchronously or asynchronously. In a research conducted by Sadık (2006) on high school students to detect the reality of interaction on web-based distance training it has been reported that the reasonable response time to learners' questions increased their confidence in the usefulness of feedback. Nonetheless as regards learner-learner interaction learners do not consider e-mail as a quick method of interaction and value forum platforms as more beneficial settings.

On the other hand it is also reported that since English is not mother tongue of learners they feel uncomfortable in text based chat platforms hence instead of synchronous interaction, they favor asynchronous interaction more.

In Woo and Reeves (2008) research it is emphasized that in web-based learning settings there are a good number of asynchronous forum settings where learners can share and discuss their opinions and form cooperations but still there are doubts regarding the contribution of these settings. Indeed in relevant literature it is possible to come across some researches reporting that forums that enable asynchronous interaction are not more useful for learners than traditional teaching (Davies & Graff, 2005; Tallent-Runnels et al., 2006)

On the other hand it can reasonably be argued that in both face-to-face learning settings and web supported learning settings, it is important that instructor provides quick feedback on troublesome subjects or learner questions. Accordingly, Chickering and Gamson (1987) emphasize that there is a consensus on the fact that one of the 7 cardinal principles that enhances learners' learning level is feedback. Lemley and his colleagues (2007) point that there are many researches on the effect of different types of feedback and these researches demonstrate that feedback is greatly important for learners' performance (Van der Kleij, et.all, 2012).

In Lemley and his colleagues' (2007) research aiming to detect the effect of immediate and delayed feedback on learners' performance it has been found out that immediate feedback, compared to delayed feedback, have meaningfully greater effect on learners' success.

Cao and his colleagues (2009) underline that in web-based learning settings synchronous interaction bears great importance. In literature it is possible to see different researches emphasizing that compared to asynchronous interaction, synchronous interaction contribute more to learners' success. Cao and his colleagues (2009) report that there are many research findings pointing that educational websites containing synchronous interaction provide positive contributions to learners. In asynchronous interaction learners feel deprived when their questions are unanswered or cannot receive feedback (Park et al., 2007a).

At the end of research conducted by Cao and his colleagues (2009) it has been found out that synchronous interaction not only elevate learners' satisfaction but it also has a qualitatively increasing effect day by day. Nehme (2008) reports that synchronous online tools enable interaction, cooperation and joint work atmosphere for online learners. To sum up pre On the other hand web-based teaching applications where synchronous interaction is provided have a greater effect of differentiation on learners' attitudes towards web supported teaching in terms of "Resistance against Web Based Teaching" factor and total score compared to the application where only control group is provided.

Learners' Attitudes towards Internet with respect to Different Methods of Interaction
In Table: 7, posttest-pretest score average differences of groups' attitudes towards internet are summarized with respect to different types of interaction.sent research also manifests that, compared to other types of interaction, synchronous interaction develops learners' attitude towards web supported teaching more and this finding is parallel to relevant literature. Accordingly it can be suggested that in web supported learning settings the use of synchronous interaction must be enabled as much as possible.

In Web-based teaching settings different types of interaction have no effect on learners' attitudes towards internet which may be attributed to the fact that learners' attitudes towards internet were already in quite high levels prior to the procedure.

BIODATA and CONTACT ADDRESSE of AUTHOR

Ozgen KORKMAZ was born in 1972 in Konya. He graduated Industrial Arts Education Faculty, Department of Computer Teacher in 1993 at Gazi Un. He graduated Institute of Science Department of Computer Education Master Program, in 1996 at Afyon Kocatepe Un. He graduated Institute of Educational Sciences Department of Educational Technology PhD Program in 2007 at Gazi Un. Currently he is working as assitand proffesor at Mevlana Un. Education Faculty Department of Computer Education and Instructional Technologies. His research interests include web based learning, blended learning, message design and web based programming technologies

Dr. Ozgen KORKMAZ
Mevlana University, Education Faculty
Department of Computer Education
and Instructional Technology, 42003 Konya, TURKEY
Phone: + (90) 5053192755
E-mail: ozgenkorkmaz@gmail.com

REFERENCES

Akkoyunlu, B. & Kurbanoğlu, S. (2003). Öğretmen adaylarının bilgi okuryazarlığı ve bilgisayar öz-yeterlik algıları üzerine bir çalışma. (A study on the information literacy and computer self-competence perceptions of prospective teachers) ***Hacettepe Üniversitesi Eğitim Fakültesi Dergisi (Hacettepe University Faculty of Education Journal)*****, 24(1), 1- 10.**

Alkan, C. (1989). ***Eğitim teknolojisi [Instructional technology]*****. Ankara: Anı Publishing.**
Barron, A. (1998). Designing Web-Based Training. ***British Journal of Educational Technology*****, 29(4), 355-371. DOI: 10.1111/1467-8535.00081.**

Büyüköztürk,S. (2002). ***Sosyal bilimler için veri analizi elkitabı [Data analysis hand book for Social Sciences].*** **(2th Ed). Ankara: PegemA publishing.**

Cao, Q. & Griffin, T.E. (2009). The importance of synchronous interaction for student satisfaction with course web sites. ***Journal of Information Systems Education, Vol. 20(3), 331-338.***

Chickering, A. W. & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. ***American Association of Higher Education Bulletin*****, 39(7), 3-7.**

Cüceloglu, D. (1998). ***İnsan ve davranışı [Human and behavior]*****. Istanbul: Remzi Publishing.**

Davies, J. & Graff, M. (2005). Performance in e-learning: Online participation and school grades. ***British Journal of Educational Technology*** **36(4): 657–663.**

Driscoll, M. (2002). ***Web-based training: Creating e-learning experiences.*** **2nd ed. San Francisco, CA: Jossey-Bass/Pfeiffer.**

Erdogan, Y., Bayram, S. & Deniz, L. (2007). Web based instruction attitude scale: Explanatory and confirmatory factor analyses. ***International Journal of Human Sciences*****, 4(2), 1-14.**

Eunjoo O.H. (2006). ***Current practices in blended instruction.*** **PhD Thesis. Knoxville: The University of Tennessee.**

Fulford, C. P. & Zhang, S. (1993). Perceptions of interaction: The critical predictor in distance education. ***The American Journal of Distance Education, 7*****(3),8-21.**

Garrrison,D.R. & Anderson, T. (2003). ***E-learning in the 21st century: A framework for research and practice*****. Newyork, NY: Routledge Falmer.**

Holmberg, B. (1989). ***Theory and practice of distance education*****. London: Routledge.**

Imel, S. (1997). ***Web-based training*****. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education Center on Education and Training for Employment College of Education. (ERIC No. ED414446)**

Jyothi, S., McAvinia, C. & Keating, J. (2012). A visualisation tool to aid exploration of students' interactions in asynchronous online communication. ***Computers & Education,*** **58(1): 30-42.**

Jonassen, D.H. (2000). ***Computers as mind tools for schools: Engaging critical thinking*****. Merrill and Prentice Hall. Pennsylvania.**

Kearsley, G. (1998). ***A guide to online education*****. Available at: http://home.sprynet.com/-gkearsley/online.htm.**

Keser, H. (1988). ***Bilgisayar destekli eğitim için bir model önerisi*** **[*****Suggest a model for computer assisted education].*** **PhD Thesis, Ankara: Ankara University, Institute of Social Science.**

Khine, M.S. (2001). Attitude Towards Computer Among Teacher Education Student in Brunei Darussalam. ***International Journal of Instructional Media*****, 28(2), 147-153.**

Lee, M. & Paulus, T. (2001). An instructional design theory for interactions in web-based learning environment. ***The National Convention of the Association for Educational Communications and Technology (24th, Atlanta, GA, November 8-12)*****. IR: 021 535.**

Lemley, D. Sudweeks, R., Howell, R.S., Laws, D. & Sawyer, O. (2007) The effects of immediate and delayed feedback on secondary distance learners. ***The Quarterly Review of Distance Education*****, 8(3), 251–260.**

Mccroskey, J.C. & Andersen, J. F. (1976). The relationship between communication apprehension and academic achievement among college students. ***Human Communication Research*****, 3,73-81.**

Moore, M., Keasrsley, G. (1996). ***Distance education: A systems view*****. Belmont: Wadsworth Pub. Co.**

Moore, M.G. (1989). Editorial: Three types of interaction. ***The American Journal of Distance Education*****, 3(2),1-7.**

Nehme, Z. (2008). The social arena of the online synchronous environment. ***Turkish Online Journal of Distance Education-TOJDE,*** **9 (2), 238-249.**

Ozgür, H. & Tosun, N. (2010).İnternet destekli eğitimin e-öğrenme tutumlarına etkisi [Internet based education's effect on attitude towards e-learning]. XV. Internet in Turkey Conference, 2-4 December. Istanbul: Istanbul Technical University.

Park, Y. J. & Bonk, C. J. (2007), Is online life a breeze? A case study for promoting synchronous learning in a blended graduate course. ***MERLOT Journal of Online Learning and Teaching*****, 3(3), 307-323.**

Perraton, H. (1988). A theory for distance education. In D. Sewart, D. Keegan, Holmberg (Ed.), *Distance education: International perspectives*, New York: Routledge.

Reigeluth, C.M. (1999). What is instructional design theory and How is it changing? . In C.M. Reigeluth (Ed.). *Instructional Design Theories and Models: A New Paradigm of Instructional Theory,* (Vol II) (s:5-29). Mahwah, NJ: Lawrence Erlbaum Associates.

Romiszowski, A. J. and Mason, R. (1996). Computer-mediated communication. In D. H. Jonassen (Ed.), *Handbook of research for educational communications and technology* (s. 438-456). New York: Simon and Schuster Macmillan.

Sadık, A. (2006). The reality of web-based interaction in an Egyptian distance Education course. *The Turkish Online Journal of Educational Technology*, 5 (1), 82-100.

Tallent-Runnels, M. K., Thomas, J. A., Lan, W. Y., Cooper, S., Ahern, T. C., Shaw, S. M. & Liu, X. (2006). Teaching courses online: A review of the research. *Review of Educational Research* 76(1): 93–135.

Usta, E. (2007). Harmanlanmış öğrenme ve çevrimiçi öğrenme ortamlarının akademik başarı ve doyuma etkisi [The Effects of Blended Learning and Online Learning on Academic Achievement and Learner Satisfaction]. PhD Thesis. Ankara: Gazi University.

Van der Kleij , F. M., Eggen, T. J.H.M., Timmers, C. F., Veldkamp, B. P. (2012). Effects of feedback in a computer-based assessment for learning. *Computers & Education,* 58(1): 263-272 .

Woo, Y., Reeves, T.C. (2008). Interaction in asynchronous web-based learning environments: strategies supported by educational research. *Journal of Asynchronous Learning Networks, 12(3-4), 179-194.*