

*Full Length Research Paper*

# Investigation on views and attitudes of students in Faculty of Education about reading and writing on screen

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**The purpose of this research is to determine points of view and attitudes of students of Faculty of Education about reading and writing on screen. In this research, descriptive survey model is used. The working group includes 254 students of Uşak University, Faculty of Education. A new measurement tool developed by the researcher was used in this study as a data collection tool. Students in this study express that the most important opportunity of on-screen reading is that they contribute to intertextual meaning establishment by enabling connection to other texts, visuals, etc. in digital media, from the text that is being studied on but the most difficulty stated by the students is eye tiredness. For opportunities of writing on screen, the students express that it enables connections to other texts, visuals, etc. in digital media and that it allows for creation of digital notebook and diary; and for the difficulties of on-screen writing, they express that it can be eye tiring, it can be difficult to use the keyboard and screen instead of pen and paper, and it can cause backache and vertebral ache.**

**Key words:** Reading, writing, reading on screen, writing on screen, attitude, e-book.

## INTRODUCTION

The internet and digital media which started to become center of students' and young peoples' daily lives will also become the center of their educational lives in near future (Buckingham, 2000; Holloway and Valentine, 2002; Merchant, 2007a; Nixon, 2003; Sefton, 1998; Skelton and Valentine, 1998). Education with tablet computers that was started by Republic of Turkey Ministry of National Education within the scope of Fatih Project (The Project of Increase Opportunities and Improvement Technology) can realize this faster than it is expected. In this case the education process in general and reading-writing education in particular radically will be changed. This is because there are great differences between the writing-reading on paper and writing-reading on screen. In addition to this the interaction between the reader and writer in digital text is completely different from the interaction of handouts (Harris, 2000; Mackey, 2003). For this reason, education of capabilities of reading-writing on a screen should be different from the current education.

In the past, the information delivered on the printed

materials like book, magazine and newspaper now come via computer, television, radio or video. Especially, computers and internet facilitate too much producing, spreading and using of information. This situation makes most of people direct to computers instead of books and brings obtaining of new information from screens. Therefore there is a new reading type which is called 'reading on the screen' (Güneş, 2010). Likewise, now the digital media became more favored than printed materials for spread of information and this situation comes with a new sort of writing which is called 'writing on the screen'. In order to understand phenomena of reading and writing on screen, the components of this process should be investigated and defined and the terms of reader-text-author should be given new meanings and we should discuss the change in the terms of e-reader, e-author and e-text and general characteristics of them (Shetzer and Warschauer, 2000).

Reading is a process of seeing, perceiving, comprehending (Biemiller and Siegel, 1997; Özbay, 2009;

Yalçın, 2006) and finding the meaning (Akyol, 2006) of a text altogether with its words, sentences and punctuation marks. However, reading on the screen process contains “reader, text and media (screen)” components. E-reading, also called reading on screen, is not only limited to text comprehension and analysis of images or graphics but also can be enriched with various media sorts. In this case, readers have the ability among many others to choose subjects and media they desire and prefer (Foltz, 1993).

People write on certain surfaces to deliver their emotions, ideas and experiences to others by using pre-determined language rules, symbols or signals (Kavcar et al., 2004; Phelps et al., 1985; Yavuzer, 2000). The surfaces that the inscriptions were written has differed from past to present. Cave walls, tree leaves and papers are some of the examples for these surfaces. The computer screen has added to this range after invention of computer. Screen is a nontransparent flat surface which works when an object is reflected by light on the screen (TDK, 2012). The process of writing on the screen includes “writer and media (keyboard and screen)” components. The writer on the screen writes his/her emotions, ideas or experiences on screen by using the keyboard. The e-texts can be enriched with several media materials and e-writers can present these enriched texts to target readers effectively and creatively (Lemke, 1998).

There are some evident differences between reading and writing on paper and on screen (Burtner and Myers, 2006; Carden, 2008; Chen, 2003; Chu, 2003; Gee, 2004; Jewitt, 2005; Kress, 2003; Merchant, 2007b; Muir et al., 2009; Jamali et al., 2009; Noorhidawati et al., 2008; Rao, 2003; Snowhill, 2001; Turkle, 1995; Wilson and Landoni, 2001):

- The texts on the screen are digital texts and they are the electronic version of handouts.
- Unlike handouts, e-texts are not limited with alphabetical symbols.
- The e-texts can prevent waste of paper.
- Creating and reading a digital text can be eye tiredness and cause backache and vertabral aches.
- Digital texts can reduce comprehensibility of text.
- It can be difficult for individuals who are accustomed to read and write on paper to pass to reading and writing on screen.
- Texts written on screen can be changed easily.
- The writing on the screen can be supported with image, video, sound or animations etc.
- The e-writing can be designed more effective than the handouts. Therefore the motivation of writers can increase thanks to usage of effective visual design.
- Writing on screen is an easy way to reach the reader.

The increase in on-screen writing and reading activities made it a must to develop on-screen reading and writing skills of teachers and students in Faculty of Education (Lankshear and Knobel, 2003). Like in all adaptation

processes to innovations, teachers and students of Faculty of Education developing positive attitudes towards on-screen reading and writing and right and adequate education they take for developing these skills will ensure reducing negative aspects of these innovations. Otherwise, it is impossible to benefit from this application efficiently. For this reason, what constitutes a priority is determination of opinions and attitudes of sharers of the education system who are teachers, parents, education administrators and especially students about on-screen reading and writing. This research aims to determine opinions and attitudes of students in Faculty of Education about on-screen reading and writing.

### Aim of the research

The purpose of this research is to determine points of view and attitudes of students of Faculty of Education about reading and writing on screen. The following questions were asked during the research with this end in view.

1. What are the students' opinions about difficulties and opportunities of reading and writing on screen?
2. Do the attitudes of education faculty students about on-screen reading and writing change according to their major?
3. Do the attitudes of education faculty students about on-screen reading and writing change according to their gender?
4. What kind of a relationship is there between attitudes of education faculty students towards reading on screen and writing on screen?

### METHOD

Within the scope of the aim of research and questions of research which were stated as mentioned earlier and with the requirement of conducting a deep investigation on a social phenomenon, descriptive survey model is used. Survey model is a research approach which aims to describe an event in the past or present naturally as how it is. The event, person or object that is being studied on is tried to be defined in its own conditions and as how it is. There is no effort to change or to effect them (Karasar, 2009).

### Working group

The working group includes 254 students of Uşak University, Faculty of Education which were chosen with purposive sampling. 74.9 % of the students have their own computer and 94.0% of the students stated that they can use the computer very well. Before the pilot application was applied, students were asked the question ‘for what purposes do you use the computer?’ in order to determine students' usage of on-screen reading and writing. The distribution of students' answers is shown in Table 1.

Table 1 shows the priorities of students to use computer as *searching for homework (77.9%), preparing homework and report (73.3%), making research on things wondered (72.1%), using social networking sites (69.6%), reading news, magazine etc (52.5%),*

**Table 1.** The distribution showing for what purposes students use the computer (n=254).

Purpose of use	Yes (%)	No (%)
To search for my homework	77.9	22.1
To prepare homework and report	73.3	26.7
To make research on things I wonder	72.1	27.9
To use social networking sites	69.6	30.4
To read news, magazine etc.	52.5	47.5
To send and receive e-mail	50.7	49.3
To play computer games	47.9	52.1

*sending and delivering e-mail (50.7%) and playing computer games (47.9%).* These findings indicate that students use their on-screen reading and writing skills in their educational and daily lives. For this reason, it can be said that the students in working group are capable to answer the questions in the measurement tool prepared for purposes of this research.

### Tools and process of data collection

A new measurement tool developed by the researcher was used in this study as data collection tool. This measurement tool consists of four parts. The first part tries to determine demographic variables of education faculty students in the study such as gender and major, their levels of computer usage and for which purposes they use on-screen reading and writing in their daily lives. The results of this part are presented during description of working group of this study. The second part tries to determine the attitudes and opinions of students about the difficulties and opportunities of reading and writing on screen. The third part tries to determine attitudes of students towards reading on screen and the fourth part tries to determine the attitudes of students towards writing on screen. In the first and second part students selected more than one options for the questions in these parts (except for gender and their major). In third and fourth parts, measures used relating to on-screen reading and writing were prepared as five point likert scale type grading. The grading options are 'Strongly Disagree = 1', 'Disagree = 2', 'Neutral = 3', 'Agree = 4', 'Strongly Agree = 5'. The higher points show higher attitudes towards the reading and writing on screen.

The working group includes 5 different groups of students each group comprising students of a different major such as Turkish teaching, primary school teaching, social sciences teaching, secondary school mathematics teaching and secondary school science teaching. The researcher met students of each group in a classroom at different times and collected the research data by making explanations about reading on screen, writing on screen, e-books and their usage in education and about measurement tool.

### Validity and reliability studies

A sampling pilot application of 60 students was made for the purpose of validity and reliability studies. Points of views of three academicians in education field were taken in order to determine scope validity of the measurement tool before the pilot application, then the necessary corrections were made according to their suggestions and the draft measurement tool was completed in its final form. After the pilot application, some changes were made in contents and forms of the questions in the first, second, third and fourth parts and then data collection process was started. In the draft measurement tool prepared for the pilot application, factor analysis were made on attitude measure with 20 items for reading

on screen and 20 items for writing on screen, for structure validity of measures and their internet coefficient of consistence were calculated for their reliability. For factorization principal component analysis method and accordingly varimax vertical rotation technique were used. As a result of this application 3 items of reading on screen and 4 items of writing on screen were removed. The results of principal components analysis for reading on screen are presented in Table 2 and the results of principal components analysis for writing on screen are presented in Table 3.

The results of analysis show that the measure for reading on screen is composed of three sub-dimensions (profit, love and habit). There are 5 items in profit dimension, 7 items in love dimension and 5 items in habit dimension. The attitude measure for reading on screen consists of 17 items. The results of factor analysis of the measure showed a 3-factor structure. Factor load of measure items are between .50 and .86. The Cronbach Alpha Reliability coefficient for whole of the on-screen reading measure was calculated as (.906) (Table 2). The explained variance in measure is also calculated as 54.41%.

The results of analysis show that the measure of writing on screen is composed of three sub-dimensions (profit, love and habit). There are 5 items in profit dimension, 6 items in love dimension and 5 items in habit dimension. The attitude measure for reading on screen consists of 16 items. The results of factor analysis of the measure showed a 3-factor structure. Factor load of measure items are between .46 and .74. The Cronbach Alpha Reliability coefficient for whole of the on-screen writing measure was calculated as (.857) (Table 3). The explained variance in measure is also calculated as 48.11%.

### Analysis of data

The analysis of the collected data was fulfilled in two steps. In the first step, the data which had been transferred to computer were examined in respect of missing or false value, outlier and multivariate. In the second step, the sub-problems of the study were solved. The descriptive analysis technique was used to determine 'for which purposes students use the computer' and 'students' opinions regarding the opportunities and difficulties in on-screen writing and reading'. In addition to this, in the analysis of the data about whether attitudes of students towards on-screen reading change or not according to their branch, one-way variance analysis was made, whereas for analysis of the data indicating whether attitudes of students towards on-screen reading and writing change or not according to their gender, independent group t test were made; and finally in order to determine what kind of relationship there is between students' attitudes towards reading on screen and the same towards writing on screen, correlation test were implemented.

## FINDINGS AND COMMENTS

In this section, the findings obtained as a result of the analyses made by using the aforesaid methods and techniques on the collected data and the comments about this findings are presented considering the order of sub-problems of the research.

### Findings relating to first sub-problem

Distribution of the students' answers to the question of 'What do you think about the opportunities and difficulties in reading and writing on screen?' is shown in Table 4.

**Table 2.** Measure of reading on screen principal components analysis.

Analysis	Dimensions		
	Profit	Love	Habits
Reading on screen improves versatile thinking	.75		
Reading on screen cannot improve students' creativity	.72		
E-texts are useful for my imagination improvement	.70		
Reading on screen cannot be used in education efficiently	.62		
Screens are not useful in drawing students' attention to lessons	.60		
I like reading (book, poem, story, news, etc.) on the screen		.70	
I think it is boring to read on screen		.63	
Since I cannot use computer very well I do not like reading on screen		.60	
I like reading on screen in my leisure time		.58	
I would like to have my own e-book library		.58	
I believe that I can be a good screen reader		.55	
Reading on screen is enjoyable		.50	
I will not make my students read on screen in my lessons			.86
I would rather read the stories on paper than read on screen			.84
I would rather read the poems on paper than read on screen			.81
I would rather read the informative texts on paper than read on screen			.72
I would rather read the news on paper than read on screen			.61
Number of items	5	7	5
Eigen value	6.841	1.813	1.099
Reliability coefficient ( $\alpha$ )	.822	.799	.857

Rotation method: Varimax with Kaiser Normalization.

**Table 3.** Measure of writing on screen principal components analysis.

Analysis	Dimensions		
	Profit	Love	Habit
Writing on the screen improves versatile thinking	.74		
Writing on the screen cannot be used in education efficiently	.65		
I think I can organize my outline better when writing on screen	.64		
Writing on screen is faster than writing on paper	.61		
Writing on screen prevents waste of paper	.57		
I like writing on screen		.73	
I think it is boring to write on screen		.65	
Since I cannot use computer very well, I do not like writing on screen		.63	
I do not write my homework on screen if it is not compulsory.		.62	
I think I can obtain a good capacity of writing on screen		.60	
I would like to receive training to improve my on-screen writing skill		.54	
I do writing on screen everyday			.71
I write on social networking sites everyday			.64
I would rather send e-mail or SMS than send letter			.56
I would rather keep my diary on paper than on screen			.48
I will not make my students write on screen in my lessons			.46
Number of items	5	6	5
Eigen value	5.327	1.853	1.248
Reliability coefficient ( $\alpha$ )	.676	.757	.647

Rotation method: Varimax with Kaiser Normalization.

**Table 4.** Opinions of students about the opportunities and difficulties relating to reading and writing on screen (n=254).

<b>Opportunities of reading on screen</b>	<b>Yes (%)</b>	<b>No (%)</b>
It can contribute to intertextual meaning establishment thanks to the opportunity to link to other texts, visuals in digital media from the text that is being read.	90.8	9.2
It can prevent the waste of paper.	69.7	30.3
It can allow for creation of digital library	64.7	35.3
It enables efficient timing	59.4	40.6
<b>Difficulties of reading on screen</b>	<b>Yes (%)</b>	<b>No (%)</b>
It can be tiring for eyes	91.0	9.0
The transition from reading handout to e-reading can be difficult for persons who are accustomed to the former	70.5	29.5
It may cause backache and vertebral ache	63.5	36.5
It may cause a decrease in person's motivation for reading	52.8	47.2
<b>Opportunities of writing on screen</b>	<b>Yes (%)</b>	<b>No (%)</b>
E-texts can be supported with pictures and visuals etc.	82.0	18.0
It can prevent the waste of paper	65.9	34.1
E-texts may allow connection to other texts, visuals in other media	65.7	34.3
It may allow for creation of digital notebook and digital diary.	59.1	40.9
<b>Difficulties of writing on screen</b>	<b>Yes (%)</b>	<b>No (%)</b>
It can be tiring for eyes	83.4	16.6
The transition from pen and paper to keyboard and screen can be difficult for persons who are accustomed to the former	68.9	31.1
It may cause backache and vertebral ache	60.1	39.9

When Table 4 is examined, the students in this study consider the contribution to intertextual meaning establishment by linking to other texts, visuals etc. in digital media to be the most important opportunity (90.8 %). Other on-screen reading opportunities resulted as preventing the waste of paper (69.7%), the opportunity of creating digital library (64.7%), and the opportunity of efficient use of time (59.4%). When it comes to difficulties of on-screen reading, they also consider as such; eye tiredness (91.0%), difficult transition from handouts to digital media (70.5%), cause of backache and vertebral ache (63.5%) and the possible decrease in person's motivation to read (52.8%). They believe the opportunities of on-screen writing are as such; e-texts can be supported with sounds, images, etc. (82.0%), it may prevent the waste of paper (65.9%), the ability to connect to other texts, visuals, etc. in digital media from the text that is being written on screen (65.7%) and the chance of creating digital notebook and diary (51.9%). However the students also show that in respect of difficulties of on-screen writing, the results are as such; eye tiredness (83.4%), difficult transition from handout to digital texts (68.9%) and cause of backache and vertebral ache (60.1%) (Chu, 2003).

Most of the students in this study expressed that the most important opportunity of on-screen reading and writing is connecting to other texts, visuals, etc in digital media from the texts they read or write and thus it making

contribution to intertextual meaning establishment. In intertextual meaning establishment, readers use higher level cognitive processes. Intertextual reading and meaning establishment leads to intertextual thinking and developing alternative points of views (Akyol, 2003). E-texts give the chance to rapidly reach other visuals, text, images in digital media or internet and this may be deemed a significant advantage of e-texts over printed texts. E-texts are environmentally friendly as long as they are not printed, and they may prevent the waste of paper and decrease in amount of green on the earth. Another advantage of e-texts is that you can easily create an e-library whereas in case of printed materials such as books, magazines, etc. establishing a library is not so much possible due to space limitations and economic reasons.

On the other hand reading and writing on screen has some disadvantages. Firstly, important handicaps are when people are not accustomed to these applications and they do not take education about these skills. For this reason it is compulsory to create positive attitude and receive adequate education regarding these two innovations so that people do not fail. The second difficulty of on-screen reading and writing, that students state, is that it may have some negative effects on human health. Especially, screens causing tired eyes and backache and vertebral ache is a high possibility when compared with printed material.

**Table 5.** One-way variance analysis showing whether attitudes of students towards on-screen reading and writing differ according to their major.

Dimension	PST (N=52)		TT (N=55)		SST (N=51)		PSMT (N=49)		ST (N=47)		F	p	Difference
	X	S	X	S	X	S	X	S	X	S			
RSP	2.55	.74	2.82	.86	2.84	.84	2.81	.85	3.00	.74	2.00	.047	ST>PST
RSL	3.02	.84	3.25	.76	3.32	.89	3.22	.80	3.27	.61	1.33	0.26	-
RSH	2.33	1.06	2.41	1.04	2.81	1.17	2.38	1.14	2.59	.99	2.88	.010; .005; .008	SST>PST SST>TT; SST>PSMT
Total	2.69	.74	2.90	.73	3.03	.74	2.88	.79	3.01	.58	2.16	.007; .023	SST>PST; ST>PST
WSP	3.58	.67	3.65	.75	3.58	.91	3.71	.75	3.54	.76	.547	.701	-
WSL	3.42	.79	3.41	.77	3.50	.93	3.58	.81	3.47	.83	.626	.644	-
WSH	3.01	.85	3.11	.87	3.30	.82	3.28	.93	3.08	.75	.606	.658	-
Total	3.45	.60	3.46	.60	3.50	.65	3.56	.67	3.42	.56	1.29	.273	

**PST**, Primary School Teaching; **TT**, Turkish teaching; **SST**, Social science teaching; **PSMT**, Primary School Maths Teaching; **ST**, Science Teaching; **RSP**, Reading on Screen Profit; **RSL**, Reading on Screen Love; **RSH**, Reading on Screen Habit; **WSP**, Writing on Screen Profit; **WSL**, Writing on Screen Love; **WSH**, Writing on Screen Habit.

One of the important issues to consider about on-screen reading is the kind of difference that occurs between reading on screen and printed material in respect of comprehension and reading speed. Various studies on this issue show that the reading handouts is 25% faster than reading an screen. This situation is originated from some reasons. First of all since, e-texts are vertical, it affects eye movements of the reader, and this leads to a decrease in reading speed. Second reason is that in case of on-screen reading, information is taken in parts, and this leads to a decreases in the level of comprehension. The third reason is that reading on screen causes a psychological pressure and tired eyes. The fourth reason is that screen glitters lead to a decrease in reading efficiency by 30% (Grégoire, 2010 cited by Güneş, 2010).

### Findings relating to second sub-problem

Distribution of the data as to whether attitudes of students towards on-screen reading and writing differ according to their major, is shown on Table 5.

Table 5 shows that there is a very little significant difference in students' opinions about reading profit dimension according to their major [ $F(4-429)=2.00$ ,  $p < .05$ ]. LSD test results show that RSP average of students in primary school teaching ( $X=2.55$ ) is less than that of primary school maths teaching ( $X=2.81$ ), Turkish teaching ( $X=2.82$ ), Social sciences teaching ( $X=2.84$ ) and Science teaching ( $X=3.00$ ). ( $p=.047$ ). In RSL dimension, there is no significant difference between students'

opinions according to their major. However, in RSH dimension there is a significant difference between students' opinions according to their major [ $F(4-429)=2.88$ ,  $p < .05$ ]. The averages of students in primary school teaching ( $X=2.33$ ) are found to be lower than that of primary school maths teaching ( $X=2.38$ ), Turkish teaching ( $X=2.41$ ), social sciences teaching ( $X=2.81$ ), and science teaching ( $X=2.88$ ). When total points of reading on screen are compared, it can be said that there is a very little difference in students' opinions according to their major [ $F(4-429)=2.16$ ,  $p < .05$ ]. The results of multiple comparison test show that the difference between the primary teaching students ( $X=2.69$ ) and social sciences teaching students ( $X=3.03$ ), and also between primary teaching students and science teaching students ( $X=3.01$ ) are statistically significant. In addition to this, it can be seen that students' opinions on WSP, WSL, WSH dimensions do not differ significantly according to their major. These students, who will give education with digital texts in their professional life, having negative opinions and attitudes, is something hopeless for future. These negative attitudes should be eliminated immediately. Turning them to positive can only be possible with adequate education given on on-screen reading and writing and when it starts to be observed that on-screen reading and writing increases efficiency of education system (Schwartzman and Tuttle, 2002).

### Findings relating to third sub-problem

Distribution of the data as to whether attitudes of students

**Table 6.** Independent group t test showing whether attitudes of students towards on-screen reading and writing differ according to their gender.

Dimension	Male (N=110)		Female (N=144)		t	p
	X	SS	X	SS		
<b>Reading on screen</b>						
Profit	3.00	.82	2.72	.82	3.17	.00
Love	3.43	.74	3.12	.80	4.12	.00
Habit	2.66	1.05	2.42	1.09	2.20	.03
Total	3.09	.67	2.81	.74	3.94	.00
<b>Writing on screen</b>						
Profit	3.50	.83	3.46	.82	0.51	.61
Love	3.26	.83	3.13	.87	1.48	.14
Habit	3.69	.86	3.59	.73	1.22	.22
Total	3.53	.64	3.45	.60	1.15	.25

**Table 7.** Correlations table regarding students' attitudes towards reading and writing on screen.

Variable	1	2	3	4	5	6	7	8
<b>Reading</b>								
1. Profit	1.00							
2. Love	.650**	1.00						
3. Habit	.450**	.522**	1.00					
<b>Writing</b>								
4. Profit	.300**	.355**	.133**	1.00				
5. Love	.500**	.609**	.376**	.428**	1.00			
6. Habit	.274**	.454**	.313**	.272**	.524**	1.00		
7. Reading (T)	.846**	.887**	.762**	.324**	.601**	.421**	1.00	
8. Writing (T)	.480**	.597**	.333**	.709**	.836**	.717**	.573**	1.00

\*\*  $p < .01$ .

towards on-screen reading and writing differ according to their gender, is shown on Table 6.

Table 6 shows that average points of students for reading on screen profit ( $t=3.170$ ,  $p < .05$ ), love ( $t=4.120$ ,  $p < .05$ ), habit ( $t=2.191$ ,  $p < .05$ ) and total ( $t=3.942$ ,  $p < .05$ ) have a significant difference between two gender. The male students are more positive than female students in all dimensions. Writing on screen profit, love and habit dimensions and their total have no important difference according to two gender ( $p > .05$ ).

### Findings relating to forth sub-problem

The distribution indicating the relationship between the students' attitudes towards reading and writing on screen is given in Table 7.

Table 7 shows that there is a high level and positive correlation between points for profit of reading on screen and that of love of reading on screen ( $r=.65$ ,  $p < .01$ ).

Between the points of reading on screen profit and reading on screen habit ( $r=.45$ ,  $p < .01$ ) there is a positive, intermediate level and statistically significant relation likewise between the points of love and habit of reading on screen ( $r=.52$ ,  $p < .01$ ). Similar to this, between points of profit and love of writing on screen ( $r=.43$ ,  $p < .01$ ); and also between love and habit points of writing on screen ( $r=.52$ ,  $p < .01$ ) there is a positive, intermediate level and statistically considerable relation. In addition to this, between total points of reading on screen and total points of writing on screen there is a positive, intermediate level and statistically considerable relation ( $r=.57$ ,  $p < .01$ ).

### CONCLUSION, DISCUSSIONS AND SUGGESTIONS

This study aims to investigate opinions of students about opportunities and difficulties of reading on screen and writing on screen, whether their attitudes towards the

subject matter differ according to their major and gender, and what kind of a relationship there is between attitudes of the students towards on-screen reading and on-screen writing. Students in this study express that the most important opportunity of on-screen reading is that they contribute to intertextual meaning establishment by enabling connection to other texts, visuals, etc. in digital media, from the text that is being studied on. Other opportunities that are found important about e-texts are: preventing waste of paper and allowing for creation of digital library. They also made emphasis on difficulties of on-screen reading. The difficulties stated by the students can be listed as such in order of importance: eye tiredness, difficult transition from handouts to digital texts, and leading to backache and vertabral ache. For opportunities of writing on screen, the students express that it enables connections to other texts, visuals, etc. in digital media and that it allows for creation of digital notebook and diary; and for the difficulties of on-screen writing, they express that it can be eye tiredness, it can be difficult to pass to keyboard and screen from pen and paper, and it can cause backache and vertabral ache. It can be concluded that, students think that the said on-screen practices can provide important opportunities whereas they can also bring important difficulties. Jamali et al. (2009) and Noorhidawati and Gibb (2008) obtained similar results in their studies on e-books. Among reasons for why students do not have sufficient positive opinions and attitudes for said on-screen practices, these can be ordered; reading and writing environments that are provided with today's technology, have insufficiencies; students' skills for on-screen reading and writing are not adequately improved, and they are not yet completely accustomed to said activities (Abdullah and Gibb, 2008; Woody et al., 2010). Güneş (2010) states about the difficulties of reading on screen 'Unlike the paper, in on-screen reading, complete text cannot be seen. A text in the amount of half page is presented one after the other on the screen so the reader reads the texts in parts and tries to understand it by combining them. This situation affects eye movements, comprehension and speed of reading.

Students' opinions about dimensions of profit, love and habit for reading on screen show a significant change according to their major; whereas there is not a difference according to major between the same dimensions for writing on screen. However, significant changes were found between points of profit, love, habit of on-screen reading and total average points of students according to their gender. Male students are more positive than female students in all dimensions. Finally, there is no significant change according to gender, between dimensions of profit, love, habit of on-screen writing and the total.

Considering the results about attitudes of students towards on-screen reading and writing; between on-screen profit points and on-screen love points, there is a positive and high level relation; between on-screen reading profit points and on-screen reading habit points,

and between on-screen reading love points and on-screen reading habit points, there are positive, intermediate level and statistically significant relations. Similarly, between on-screen writing profit points and on-screen writing love points, and between on-screen writing love points and on-screen writing habit points, there are positive, intermediate level and statistically significant relations. When it comes to total points of on-screen reading and on-screen writing, there is a positive, intermediate level and statistically significant relation between them.

These suggestions may be uttered based on the research results:

- The fact that pilot education with tablet usage application began in schools of Ministry of Education and that it will spread throughout the country in next years may be considered positive. However, this study shows that students in faculty of education do not involve in sufficient opinion and attitude towards said on-screen practices. Opinions and attitudes of teachers towards said on-screen practices may be determined with this kind of a study.
- This study contains only Faculty of Education students' attitudes towards on-screen reading and writing. In relation with subject of this study, studies on reading speed on screen and effect of on-screen reading on comprehension as well as writing speed on screen and effect of on-screen writing on written expression can be researched.
- Adaptation to education with tablets and especially skills for on-screen reading and writing of students of Faculty of Education should be improved mentally and academically during the time period of their undergraduate education.

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