Prospective EFL Teachers' Emotional Intelligence and Tablet Computer Use and Literacy

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ABSTRACT
The aim of this study was to investigate whether there is a relationship between tablet computer use and literacy, and emotional intelligence of prospective English language teachers. The study used a survey approach. In the study, 'Prospective Teachers Tablet Computer Use and Literacy Scale' and an adapted and translated version into Turkish of 'Emotional Intelligence Scale' were used as two data collection tools. The participants of the study consisted of randomly selected 149 females and 64 males; in total, 213 prospective teachers of English from the English Language Teaching Departments of Sakarya and Gazi Universities in the 2016-2017 academic year were involved. The study revealed the fact that, variables such as gender, age, status of having a tablet PC have statically significant effect on tablet PC use and literacy skills of prospective teachers of English. On the other hand, it was found that there was no statistically significant difference in emotional intelligence levels of participants in terms of gender, age, status of owning a tablet PC and duration of tablet PC use. When the correlation between the scales was evaluated, a negative relation was determined among tablet PC use and literacy skills and emotional intelligence.

Keywords: emotional intelligence, tablet computer use, technology literacy, digital natives, EFL, prospective teachers

INTRODUCTION
Individual differences shape our preferences both in our personal and professional life. Another significant phenomenon of our tendencies is the technology pertaining into our lives day by day. Intelligence, specifically, emotional intelligence (EI) which is an individual difference and tested via psychometric measures, can presumably affect or predict our job-related choices in terms of technology.

The notion of intelligence involves understanding and forming higher-level abstract concepts. The observations made on how the intelligence is formed show that some people are better at making connections, reasoning deductively and inductively and at understanding the meaning of ideas, etc. better than others. Locke (2005, p. 425) indicated that "Those who are better able to grasp higher-level concepts are better able to handle complex tasks and jobs". Some people can be said to possess a higher capacity for carrying out complex information processing about emotion-related incentives and benefit from this information in thinking and behavior. Mayer, Salovey, Caruso (2008, p. 503) called this type of ability "emotional intelligence".

In the past decade, the notion of emotional intelligence has been seen as a new design for explaining that difference in behaviors was not associated with conventional limits of general academic intelligence. Landy (2005, p. 411) pointed out that "Historically, conceptually, psychometrically, and scientifically, there are many and substantial questions surrounding the possible value of the construct of emotional intelligence, particularly with respect to work-related behavior". Kafetsios and Zampetakis (2008, p. 713) noted that "At a theoretical level Emotional Intelligence (EI) reflects the extent to which a person attends to, processes, and acts upon information of an emotional nature intra-personally and inter-personally".

According to Nelis, Quoidbach, Mikolajczak and Hansenne (2009, p. 36), "The construct of emotional intelligence (EI) refers to the individual differences in the perception, processing, regulation, and utilization of emotional information". According to Brackett and Salovey (2006, p. 34), emotional intelligence from this tradition refers to "an individual's capacity to reason about emotions and to process emotional information in order to enhance cognitive processes". In other words, EI is held to explain how emotions advance life goals (Bastian et al., 2005).Therefore, higher emotional intelligence would be related to better mental health, under certain circumstances higher emotional intelligence may have maladaptive consequences (Schutte et al., 2007). According to Lopes et al. (2006), emotional intelligence may also contribute to work performance by enabling

people to regulate their emotions so as to cope effectively with stress, perform well under pressure, and adjust to organizational change.

Emotional intelligence is a more fixated notion. While dealing with emotions which are related to social relationships; it is also significant to bear in mind that they are related to other aspects of life. We all need to set goals, focus on future endeavors and cope with negative emotions before they cause further problems. The concept of emotional intelligence isolates a specific set of skills embedded within the abilities that are broadly encompassed by the notion of social intelligence (Grewal & Salovey, 2005).

Developments in the information and communication technology have caused dramatic changes in societies since traditional instruction is unable to meet the needs in overcoming the obstacles in the teaching process, using information and communication technology seems to be the best approach. The learners of the last decade can be named as digital natives who are born in and with technology. Computer assisted education has been gaining acceptance as one of the technology used effectively in education systems and tablet PC's have an important situation in this approach (Kamacı & Durukan, 2012). Specifically, in foreign language teaching, the significance of blending technological tools and applications with education is becoming more and more indispensable. The tablet computer allows those children who are digital natives to create original works as a means of personal expression. Potentially the tablet will allow opportunities for children to collaborate with peers using digital media and transform their current knowledge to learning a new technology (Couse & Chen, 2010)

Just like those of any kind of change and development, there are and may be unexpected consequences of technological improvements, as well. Nevertheless, the benefits of tablet computer are proven in various studies in different areas by certain researchers, such as enhancing and improving students' problem solving abilities (Ellington, Wilson, & Nugent, 2011; Gök, 2012;), and student performance (Enriquez, 2010; Pryor, & Bauer, 2008). Some other studies also point out the contribution of tablet computers to interaction (Koile & Singer, 2006) and communication, (Galligan, Hobohm, & Loch, 2012; Jones & Sinclair, 2011; Sneller, 2007) and communication and information skills (Marzuki, Mustaffa, & Saad, 2015). Karunaratne (2000) described the literacy term basically as an individual ability enabling survival in the society one is in, thus, any literate person is expected to be able to read and write to a certain extent in addition to the ability to solve basic arithmetic operations. According to Blackall (2005) 21st century literacy can be described as the overlap of verbal, visual and numerical literacy, skills and talents. Therefore, technological literacy looks crucial to sustain life in the 21st century for teachers who play significant roles in the field of education. Wang (2003) defined technology literacy to have the appropriate skills, information and behavior to use, apply, design and change the technology. Individuals who can make conscious decisions about technology can be described as technology literate (Hergüner, 2016).

It is widely known that people with high emotional intelligence have higher rational thinking and decision making processes. This situation provides people with some advantages not only in their daily life, but also in business and education life. Thus, there has been a significant increase in the number of the studies conducted on the factors affecting emotional intelligence. On the other hand, it has been seen that the studies on the relationship of technological developments and emotional intelligence, some of which are conducted by Al-faouri (2011), Han and Johnson (2012), and Hamisi, Babaie, Hosseini, and Babaie (2013), are limited.

In the current study, the aim was to examine the relationship of the tablet computer use and literacy, and emotional intelligence among prospective English language teachers. The followings are the sub research questions of the study: (1) What are the levels of participants in Tablet PC use and literacy, and Emotional Intelligence and its sub-dimensions as well? (2) Are there any gender differences in terms of tablet PC use and literacy, and Emotional Intelligence for the participants? (3) Are there any differences in terms of age in tablet PC use and literacy, and Emotional Intelligence for the participants? (4) Do the participants differ according to the status of possessing a Tablet PC? (5) Do the participants possessing a Tablet PC differ in the level of tablet PC use and literacy, and emotional intelligence in terms of duration (year) to use a Tablet PC? (6) Is there a relationship between the levels of Tablet PC Use and Literacy, and Emotional Intelligence and its sub-dimensions?

METHOD
Research design and participants
In this study, Survey Model which is one of the most frequently used descriptive models in educational sciences, was applied. As it is known, under the basis of studies with the descriptive survey method lays the search of the features of certain demographical attributes that major sample groups have on the effects of variables subject to

the study. It was aimed to investigate the effect of tablet computer use and literacy on emotional intelligence of prospective English teachers.

The participants of the study were randomly selected 149 female and 64 male student teachers of English at Sakarya University and Gazi University in 2016-2017 academic years. Demographic information about the participants is given in Table 1.

Table 1: Frequency and percentage values on demographical features of research group

Variables	Sub-Variables	f	%
Gender	Female	149	70,0
	Male	64	30,0
Age groups	18-19 age	90	42,3
	20-21 age	79	37,1
	21+ age	44	20,7
Have a tablet PC?	Yes	75	35,2
	No	138	64,8
If has a tablet PC, how long has it been used?	1-2 year	29	41,4
	3-4 year	25	35,7
	5-6 year	16	22,9

Data collection procedure and tools
The data of age, gender, the state of having a tablet PC and period of using a tablet PC were obtained by using the personal information form developed by the researcher herself.

Prospective teachers' tablet computer use and literacy scale
In the determination of prospective teachers' views "Prospective Teachers' Tablet Computer Use and Literacy Scale" developed by Kıyıcı, Kırksekiz, Kiper, and Isbulan (2014) was used. This scale is a one-dimensional one and it measures participants' Tablet PC use and literacy levels through 73 items. It is a 5 Likert type scale (1) strongly disagree (2) disagree (3) neutral (4) agree (5) strongly agree. The scale was distributed to the prospective teachers as hardcopies. They are applied and collected at the same time. Firstly, arithmetic average and standard deviation were calculated to define tablet PC use and literacy level. Standard deviation value was found from the average. Values under the average indicate low level of tablet PC use and literacy. Standard deviation value is added to the average. The participants whose values are higher than this result have higher level of Tablet PC use and literacy. The participants having average value between high and low level, has medium- level of tablet PC use and literacy.

Emotional intelligence scale
In the determination of prospective teachers' emotional intelligence levels, 'Emotional Intelligence Scale' developed by Schutte and others (1998) was used. Emotional Intelligence Scale modified by Austin and others (2004) and translated and adapted in to Turkish by Tok, Moralı, and Tatar (2005) consists of 41 items in total of which include 20 positive and 21 negative items. Emotional Intelligence Scale modified by Austin, Saklofske, Huang and McKenney (2004) was formed by converting some positive items of Schutte's Emotional Intelligence Scale into negative and adding new items aiming 'Utilization of Emotions' that formerly found lower-reliability level than other items. The scale is 5-point Likert type scale with (1) strongly disagree (2) disagree (3) neutral (4) agree (5) strongly agree. The scale consists of three factors; Optimism/Mood Regulation, Utilization of Emotions and Appraisal and Expression of Emotions. The scale measures these three-factors and general emotional intelligence in total.

Data analysis procedures
In the data analysis, SPSS 22.0 package program was used. A reliability analysis preceded the data analysis to see whether the data was reliable or not. At the end of this analysis, Cronbach's Alpha internal consistency coefficient was .959for Prospective Teachers' Tablet Computer Use and Literacy Scale. Also, it was .748 for the whole Emotional Intelligence Scale while it was .745 for the sub-dimension of Optimism/Mood Regulation; .794 for the sub-dimension of Utilization of Emotions and .654 for the sub-dimension of Expression of Emotions. The data obtained by both scales were examined by One Sample Kolmogorov-Smirnov test in terms of normal-distribution and was resulted in abnormal- distribution. Due to these reasons, non-parametric analyze methods were used to analyze the data of both scales. Mann Whitney U test was used to compare participants' scale scores according to gender and status of possessing a tablet PC. Kruskal Wallis H test was used to compare participants' scale scores according to age groups and duration of using a tablet PC. When a significant difference occurred, Mann Whitney U test was used as post hoc test to find the groups having difference. Spearman Correlation

Analysis was used to investigate the relation between tablet PC use and literacy level, and emotional intelligence level. At the end of the analysis performed, significance level was measured $p < 0.05$.

FINDINGS

Table 2: Definitive statistics in levels of Tablet PC use and literacy, and emotional intelligence of participants

Scales	N	The lowest	The highest	X	Ss
Tablet PC use and literacy	213	1	5	3.68	.515
Emotional Intelligence Total Score	213	39	141	117.15	8.977
Optimism (EI)	213	17	81	64.43	7.770
Utilization of Emotions (EI)	213	6	24	14.47	3.482
Appraisal and Expression of Emotions (EI)	213	16	54	38.25	6.335

When Table 2 is examined, it can be understood that the average scores of tablet PC use and literacy, and optimism are over medium-level, scores of Utilization of Emotions and Appraisal and Expression of Emotions are under medium-level, scores of Emotional Intelligence Total Score is in medium-level.

Table 3. Comparison of pablet PC use and literacy, and emotional intelligence of participants according to gender

	Gender	N	X	Ss	Rank Ave.	Rank Total	U	P
Tablet PC Use and literacy	Female	149	3.62	.524	100.37	14954.5	3779.5	.017
	Male	64	3.80	.474	122.45	7836.5		
Emotional Intelligence Total Score	Female	149	117.13	9.822	107.92	16080.0	4631.0	.739
	Male	64	117.20	6.674	104.86	6711.0		
Optimism	Female	149	65.05	8.016	113.77	16951.5	3759.5	.014
	Male	64	63.00	7.015	91.24	5839.5		
Utilization of Emotions	Female	149	13.97	3.348	98.51	14677.5	3502.5	.002
	Male	64	15.64	3.534	126.77	8113.5		
Expression of Emotions	Female	149	38.11	6.288	106.22	15827.5	4652.5	.779
	Male	64	38.56	6.483	108.80	6963.5		

In Table 3, it is seen that male participants show statistically more significant difference based on tablet PC use and literacy level compared to female participants ($p < 0.05$), of female participants more significant difference based on optimism ($p < 0.05$), of male participants more significant difference based on utilization of emotions ($p < 0.05$), levels of emotional intelligence and expression of emotions show no significant difference statistically for both male and female participants.

Table 4. Comparison of tablet PC use and literacy, and emotional intelligence according to age groups of participants

	Age Groups	N	X	Ss	Rank Ave.	X^2	P
Tablet PC Use and literacy	18-19 age	90	3.60	.545	97.36	9.610	.008
	20-21 age	79	3.67	.450	104.08		
	21+ age	44	3.85	.529	131.98		
Emotional Intelligence Total Score	18-19 age	90	117.54	11.161	113.96	3.050	.218
	20-21 age	79	116.53	7.243	97.65		
	21+ age	44	117.45	6.571	109.57		
Optimism	18-19 age	90	65.12	8.370	113.68	2.478	.290
	20-21 age	79	63.72	7.350	98.79		

		N		Ss			
	21+ age	44	64.30	7.258	108.08		
Utilization of Emotions	18-19 age	90	14.38	3.514	106.89		
	20-21 age	79	14.11	3.620	98.47	4.357	.113
	21+ age	44	15.30	3.085	122.55		
Expression of Emotions	18-19 age	90	38.04	6.675	105.67		
	20-21 age	79	38.70	6.007	110.31	.391	.822
	21+ age	44	37.86	6.290	103.78		

When Table 4 is examined it is clear that tablet PC use and literacy level show statistically significant difference according to age groups of participants (p<0.05). This difference derives from 21+ age group participants having higher level of tablet PC use and literacy compared to both 18-19 and 20-21 age groups. Differences are shown between Emotional Intelligence levels and optimism, Utilization and Expression of Emotions according to age groups but they are not statistically significant differences. (p>0.05).

Table5. Comparison of tablet PC use and literacy, and emotional intelligence according to status of possessing a tablet pc of participants

	Has tablet?	N	X	Ss	Rank Ave.	Rank Total	U	P
Tablet PC Use and literacy	Yes	75	3.78	.508	121.07	9080.5	4119.5	.014
	No	138	3.62	.512	99.35	13710.5		
Emotional Intelligence Total Score	Yes	75	116.47	7.899	98.56	7392.0	4542.0	.140
	No	138	117.52	9.518	111.59	15399.0		
Optimism	Yes	75	65.03	7.438	111.92	8394.0	4806.0	.390
	No	138	64.11	7.952	104.33	14397.0		
Utilization of Emotions	Yes	75	14.04	3.024	101.51	7613.0	4763.0	.335
	No	138	14.70	3.697	109.99	15178.0		
Expression of Emotions	Yes	75	37.40	5.927	98.87	7415.5	4565.5	.155
	No	138	38.71	6.520	111.42	15375.5		

In Table 5 above, tablet PC use and literacy level show statistically significant difference according to status of possessing a Tablet PC of participants (p<0.05). Participants possessing a Tablet PC have higher level of Tablet PC use and literacy compared to other participants), levels of emotional intelligence and optimism, utilization and expression of emotions show no significant difference statistically according to the status of possessing a Tablet PC (p>0.05).

Table 6. Comparison of Tablet PC use and literacy, and emotional intelligence according to duration (year) to use a tablet pc by participants possessing a tablet PC

	Duration	N	X	Ss	Rank Ave.	X^2	P
Tablet PC Use and literacy	1-2 year	29	3.66	.521	30.55		
	3-4 year	25	3.79	.511	36.44	3.942	.139
	5-6 year	16	3.95	.486	43.0		
Emotional Intelligence Total Score	1-2 year	29	115.45	7.619	33.83		
	3-4 year	25	115.56	8.713	34.02	1.436	.488
	5-6 year	16	117.75	6.298	33.83		
Optimism	1-2 year	29	63.59	7.781	32.41		
	3-4 year	25	65.20	6.868	36.82	1.259	.533
	5-6 year	16	65.88	7.702	39.03		
Utilization of Emotions	1-2 year	29	13.79	3.133	34.79		
	3-4 year	25	14.04	3.323	35.60	.086	.958
	5-6 year	16	14.06	2.435	36.63		
Expression of Emotions	1-2 year	29	38.07	5.757	38.21		
	3-4 year	25	36.32	6.026	31.48	1.568	.457
	5-6 year	16	37.81	5.456	36.88		

Table 6 illustrates that tablet PC use and literacy level, emotional intelligence and optimism, utilization and expression of emotions show statistically no significant difference according to duration (year) to use a Tablet PC by participants possessing a Tablet PC (p>0.05).

Table 7. The relationship between Tablet PC Use and Literacy Level, and Emotional Intelligence and its sub-dimensions

		Emotional Intelligence Total Score	Optimism	Utilization of Emotions	Expression of Emotions
Tablet PC Use and literacy	r	-.102	.296**	-.053	-.352**
	p	.140	.000	.443	.000
	N	213	213	213	213

Table 7 shows that while there is a linear and significant relation between the level of tablet PC use and literacy level and optimism (r=.296; p<0.05), it is reverse and there is a significant relationship between the level of tablet PC use and literacy level and expression of emotions (r=-.352; p<0.05). Not only level of tablet PC use and literacy level and emotional intelligence (r=-.102; p>0.05) but also utilization and expression of emotions (r=-.053; p>0.05) have a reverse and insignificant relationship.

DISCUSSION
The findings of this study that the levels of tablet PC use showed statistically significant differences according to gender; male participants had higher level of Tablet PC use compared to female participants. The fact that male students had higher interest and tendency to technology than female students might lie behind this result. In the literature, it was also found out that male pre-service teachers had higher attitude towards using technology such as computer and Internet compared to female pre-service teachers in similar studies (Köse, Savran-Gencer, & Gezer, 2007). In the study, the level of tablet PC use shows statistically significant difference according to age groups in that 21+age groups showed a higher level of tablet PC use compared to the 18-19 and 20-21years of age groups. Related studies argue that the use of tablet PC among university students considerably common (Robinson & Burk, 2013). On the other hand, it is also seen that studies on the level of tablet PC use among university students according to age groups are quite limited. In this content, there is a considerable need for the studies about the relationship between frequency of tablet PC use and age groups among university students.

In the study, participants possessing a tablet PC had higher, significant level of literacy compared to the participants not possessing a tablet PC. On the basis of this result, tablet PC's improver and facilitator function of using tablet PC relies on. Findings of studies in literature show that tablet PC use facilitates the literacy skills. In a study on research assistants, it was aimed to investigate their views about tablet PC use. At the end of the study, improving and facilitating tools according to research assistants' views were evaluated (Kamacı & Durukan, 2012). In another study on university students it was found that Tablet PC is beneficial in terms of using especially e-reading websites (Aydemir, Küçük, & Karaman, 2012).

According to the data obtained from the study, it was found that level of emotional intelligence according to gender of participants show no statistically significant difference. On the other hand, sub-division scores in optimism of female participants, utilization of emotions of male participants have higher significant level compared to the participants of opposite gender. The result may derive from female and male participants having different psychological and emotional characters. In a similar study, organized by Eraslan (2015), scores gathered from sub-division of emotional intelligence of male and female participants show statistically significant difference. In the same study, scores of emotional intelligence sub-divisions: emotion management, self-motivation and empathy are higher for female participants compared to male participants. The study also showed that emotional characters of female participants provide female participants higher level of emotional intelligence. Similar studies in the literature show that gender has an important role on emotional intelligence (Ikız & Gormez, 2010; Ismen, 2001; Sevindik et al., 2012).

Additionally, it was found that the level of emotional intelligence according to age groups of participants show no statistically significant difference. Participants in common age groups and common emotion patterns can be taught as the reason. In terms of tablet PC use, there is no statistically significant difference among levels of emotional intelligence according to the status of possessing a tablet PC. Similarly, duration to use a tablet PC is not an important definer in emotional intelligence and literacy habits. On the basis of this result, low frequency of tablet PC use (35,2%), and prospective teachers possessing a tablet PC make students perceive aims of tablet PC use in a different way can be mentioned.

In the study, it was found that there is a linear and significant relation between the level of Tablet PC use and literacy level and optimism, also a reverse and significant relation between level of Tablet PC use and literacy level and expression of emotions. Furthermore, tablet PC use and literacy level and both utilization and expression of emotions has a reverse and insignificant relation. According to the data obtained, tablet PC use and

literacy of prospective teachers has a negative effect on emotional intelligence. This may derive from the fact that participant teachers who use tablet PC are of low level in use for literacy, education or personal development. Furthermore, the fact that tablet computers provide speed and collaboration in educational areas both as learning and teaching tools does not unfortunately compensate the fact that technology deprives us of the real life communication and hinders passing emotions to the other people properly and understanding their feelings, as well. Hamissi et al. (2013) also found that students with high EI score are less internet addicted. Probably, that's why there is a negative correlation between the use and the literacy of tablet computers and the emotional intelligence levels of prospective teachers of English. As a result, variables such as gender, age, status of having a tablet PC has statically significant effect on tablet PC use and literacy skills of pre-service teachers of English. On the contrary it was found that gender, age, status of possessing a tablet PC, duration of tablet PC use has no statistically significant difference on emotional intelligence levels. When the correlation between scales was evaluated, a negative relation tablet PC use and literacy skills and emotional intelligence was reached.

CONCLUSION AND SUGGESTIONS

Technology, which is undeniably a fast multifunctional facilitator in the field of learning and teaching as content, activity, material and test provider with its products such as tablet PCs –the main component of this study- is in close relationship with psychological constructs such as Emotional Intelligence – the other main component of the study. Any kind of a development and change in the field of technology affect the educational processes in every aspect. The core of education, the human being, as a psycho- social entity is affected by all these developments and changes regardless of the locations.

The concluding remarks of the study can be stated as follows. The reason why prospective male teacher were more inclined to use a tablet computer could be the number of the daily and professional tasks they had to carry out via the internet. The reason why the older the prospective teachers candidates were the more literate they were could be because they possessed a tablet PC of their own. Those who possessed a tablet PC had naturally more time to spend on it, which provides them with the opportunities of developing their tablet PC literacy. The reason why females had higher scores in optimism while males had higher scores in the utilization of emotions could be the fact that females and males had distinct psychological and emotional features which caused them to be more proficient than each other in different settings requiring them to cope with and manage certain emotion oriented tasks. The reason why the higher level of tablet PC use had a negative effect on the emotional intelligence of prospective teachers in terms of expressing their emotions could be due to the fact that technology hinders individuals' real life communication skills despite the numerous advantages it offers.

In this sense, the efficient and adequate use of technology and its products stands out to regulate and enhance the educational processes properly. Moderately limited and controlled use of tablet PCs can be suggested in order to promote the real life communication facilities in the educational environment. Surely, technology is the fastest and the easiest way of bringing real life contexts into language classes. However, prospective teachers should not be trained as technology addicts who cannot achieve educational goals in the classroom or cannot communicate with their students effectively without relying on the use of technology. All in all, the limited number of studies in the related field and the need for more scientific evidence about the relationship between the psychological factors and the use of technological tools such as tablet PCs necessitate further studies in this field of English language education. Considering the findings in the present study and the lack of related studies in the literature, the further studies are seen as necessary in this field. For instance, the same subject can be conducted on prospective teachers and working teachers comparatively as well as other studies comparing prospective teachers at different teaching departments of universities.

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