Comparison of Turkish and US Pre-Service Teachers' Web 2.0 Tools Usage Characteristics

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Abstract

As the Internet and computer develop, the world is changing dramatically and fantastically. Usage of technological tools is increased day by day in daily life besides ICT. All the technological tools shape individual behavior, life style and learning style as well as individual lives. Today's child use different tools and different way to socialize. Most of the educational institutions support their education with Web and Web 2.0 applications. Pre-service teachers are the people who use technology in their learning experience and the people who use technology in their teaching experience. In this research Web 2.0 habits of pre-service teachers from Turkey and US was studied. And results show that Turkish participants use more frequently Web 2.0 tools than US participants. Especially Turkish male participants who have blog account and who have microblog account use more frequently Web 2.0 tools in learning and entertainment activities.

Keywords

Teacher Education, Web 2.0, Pre-service.

I. Introduction

Today's children interact with tools like television, cell phone, computer and tablet computer that never existed in the past, since their birthday. In addition the children transform these tools as an integral part of their lives. The current generation is often referred to as Digital Natives, the Millennials or Net Generation. Who are these digital natives? The Generation who are born after 1980 has been termed Digital Natives, Millenials, or Net Generation (Margaryan, Littlejohn & Vojt, 2011). Today's teenager has fun, communicate and learn in a different ways from their parents and past people. Due to technological advancement and their interaction these technologies today's young people think and process information differently than their previous generation (Prensky, 2001a). Sometimes these changes annoy the parents, but parents can't stop the change process and can't retain their child to be a part of digital culture. Modern society also referred to as *information society* or *post-modern society* distinguish it from earlier structures. New circumstances of modern society has justified this distinction. For example the process of communicating has undergone rapid changes forms of establishing and maintaining communication have undergone fundamental changes and ICT-aided solutions are playing an ever greater role, replacing interpersonal communication (Székely & Nagy, 2011). While in agricultural society, people comprehend the importance of machine and how people work with them, nowadays they comprehend the importance of ICT and they would like to learn how ICT works and how they can work with them.

The majority of teenager in several developed countries use digital technologies (Kolikant, 2010). Teenagers are supplied many of technological tools by their family or schools. Many of the schools require some paper work to be completed over internet or teachers require the teenagers to search information over internet. Nowadays, schools are increasingly offering an internet connection so that access is free and easily available for many high school and college students (Gui & Argentin, 2011). Besides internet access in schools if teenagers have an internet connection at home or cell phone, teenagers can connect to the internet all the time. Through the recent decades ICT investment has shown incredible increase throughout the world (Weber & Kauffman, 2011). Every corporation invests in ICT and internet infrastructure, for example decades ago web site was limited but now most of corporations have internet site. At the same time schools have tried to transfer these technologies in their management process and teaching process. They invest in and out of classroom technologies to achieve national and international outcome. In this process students and teachers came forward and students and teachers have provided some special lectures concerning ICT and technology. One of the key factors is used to determine success of educational modernization is teachers, teachers are the people who implement modernization rules or not (Zhou, Zhao, Hu, Li & Xing, 2010). If teachers see and believe advantages provided by technology, technology can settled easily. ICT can help transition process once all the stakeholders in an educational environment have adequate access the technological tools and they use sufficiently these tools (Hakkarainen, Ilomäki, Lipponen, Muukkonen, Rahikainen, Tuominen, Lakkala & Lehtinen, 2000).

Labeled as a digital age or an informational age, the 21st century brings new opportunities and challenges for modern society (Li & Ranieri, 2010). People are required to shop, to get their education, to read news online and people are required to interact with technology. And these young people form a new generation called digital natives or millennial learners. The widespread belief by media and educators is that current generation of students have higher competency with ICTs than their senior generation (Guo, Dobson & Petrina, 2008). Teenagers are generally believed use more computer, internet and other technologies and they are believed use these technologies easily. Compared to their previous predecessors digital natives are considered to be more comfortable with digital technology (Lei, 2009). But there is no agreement about the definition of

Digital Natives. They are engaged in a world where technology is available 24/7 (Valtonen, Dillon, Hacklin & Vaisanen, 2010).

Digital immigrants usually define technology as computer and internet on the contrary digital natives define technology broadly and they don't point out one device or tool. Digital natives define technology without limiting it to computers and the internet but as digital devices or applications that help to meet their needs and support their learning activities (Ras & Rech, 2009). Today, the proliferation of Web 2.0 tools has resulted in many web-based tools focused on sharing knowledge, news, bookmarks, movies etc. The digital natives expect similar tools for work, hobbies, entertainment and support learning (Ras & Rech, 2009). People can transfer their knowledge about their tools and their skills to other domains. For example individual who knows the social network sites, can use these site easily in learning environments. Researches concerning digital natives have some indicates that digital natives use technology frequently. Brown & Czerniewicz (2010) in their research related to digital natives state that 52% of the participants have computer usage experience more than 6 years. Another research revealed that majority of the digital native own their mobile phone, personal computer and many of the digital native have their own digital camera, game consoles and laptop computer (Margaryan, Littlejohn & Vojt, 2011).

Technology tools including Web 2.0 tools are being used by teenagers for educational or entertainment purpose. Web 2.0 term points out the tendency of using web technology in collaborative manner and gives people more communication, information sharing and collaboration options (Sastry & Reddy, 2010). In the age of Web 1.0 just programmer and/or expert web designer can create web pages, end user view, download or print the pages. The invention of Web 2.0 tools gave many options to individuals. For example; in Web 1.0 era people just read the news from a news web site, but with Web 2.0 people can comment and share their own idea related with news above the news page. Web 2.0 applications stimulate the people to add at least their idea to web pages, stimulate to join an online community (Székely & Nagy, 2011). Interconnectivity and interactivity attributes of web 2.0 content are essential characteristics of Web 2.0 term, and sometimes Web 2.0 requires some infrastructural and practice change (Kawashima, 2010). Generally Web 2 .0 uses the same communication and server infrastructure with Web 1.0, but especially communication between server and client computer has changed. In web 1.0 era users are passive client for the server computer (Koçak Usluel & Mazman, 2009). But now users are content provider at the same time. Many of the web 2.0 tools just give web site skeleton or frame and users of the service fill content up to site. Web 2.0 is an emergence of new technologies that are both open and social in nature (Cain &Fox, 2009). With the help of Web 2.0 people communicate with their friends, can see their picture, can listen to a song that is shared in a sharing platform and above all they can write their own comment to content. The more people connect to internet the more change in the nature of Web occurred (Greenhow, Robelia & Hughes, 2009). Numbers of blogs, wikis, social network sites and other Web 2.0 applications increases day by day. As people interact with their friends and other people who share same interest area, their willingness to contribute the web are increased. As daily activity most of the people use social network sites (Kayri & Çakır, 2010). Recent years Web 2.0 applications have brought many opportunities to teaching and learning environment (Ajjan & Hartshorne, 2008).

Web 2.0 term has no firm limits, and Web 2.0 core principles are interaction, participation and sharing (Chen, Yen & Hwang, 2012). Web 2.0 generally use the same infrastructure with Web 1.0 but many times Web 2.0 require two way interaction between server and client computer, through these interaction individuals can contribute to web (Liu, Liu, Bao, Ju & Wang, 2010). Web 2.0 tools are free or nearly free, web-based, socially oriented and represent a transition from institutionally provided to easily available technology tools (Diaz, 2010). Web 2.0 refers sharing, collaboration and social use of the Web resulting in content creation, knowledge generation (Grosseck, 2009). Web 2.0, sometimes called social internet, let individual and group to publish text, audio, video and

other media (Bennett, Bishop, Dalgarno, Kennedy & Waycott, 2012). There has been a sudden increase in the number of Web 2.0 tools available for instructor's to use with their students (Bower, Hedberg & Kuswara, 2010). With the arrival of web 2.0 technologies has created a platform for students to collaborate, create and share projects on current and emerging topics (Ward, Moule & Lockyer, 2009). Teachers and students can use one of the applications without paying anything and they can share their opinion and products over Web 2.0. Day by day number of applications has increased and some teachers cannot follow the tools and their opportunities in learning environments (Cain & Fox, 2009). Web 2.0 tools are free and adaptable tools and with their collaborative characteristics, teachers and students can focus on learning activity (Coutinho & Mota, 2011). Many people associate Web 2.0 with terms such as blogs, wikis, podcasts, RSS feeds and social web (Aharony, 2009). All of Web 2.0 applications support active users and require users to contribute the content (Baltaci-Goktalay & Ozdilek, 2010). Advantages of collaboratively generated content are (Mason & Rennie, 2007):

1. Users are not the passive viewer of content, and they have opportunity to contribute to content.

2. Every user can refresh the content, so content is always updated.

3. Web 2.0 tools have opportunities to work in a team, almost every tools have different application which works in background and work separately from the site content.

II. Purpose

This study seeks to define usage characteristics of technology tools and web 2.0 tools among teacher candidates in Turkey and US. The study would further explore whether these tools are being used for education or entertainment purposes. And also it is aimed to compare of two countries characteristic's regarding computer and internet usage and Web 2.0 tools usage in learning and educational activities. And is there any differences in Web 2.0 usage by gender, Social Network Site account ownership, blog account ownership an microblog account ownership

III. Method

This is a descriptive study that aims at defining usage characteristics of technology and web 2.0 tools of teacher candidates, it is a "descriptive" study. The target population of the study is teacher candidates who enrolled at one of Turkish college of education in a computer technology course (Computer 1) and teacher candidates enrolled in the College of Education in the north eastern United States in a computer Technology class. To administer survey researcher distributed survey and students were given one week to complete. Finally for Turkey population 245 survey were distributed and 196 survey were returned, and for USA population 215 survey were distributed and 57 survey returned. The survey was administered voluntarily when the class is in session. Each student volunteer would be given one survey to complete.

IV. Survey

In order to obtain research data a survey was developed by researchers. The survey contains two main sections. The first section of the survey consists of twenty questions concerning demographic

characteristics of the participants. The second section of the survey contains 12 different tools and students were asked whether they use these tools in educational settings and for entertainment.

V. Findings

In this section findings revealed from the surveys are presented. First part of this section contains demographic data of participants. After demographic data, comparison of Turkish and US participants usage of Web 2.0 tools by different independent data are supplied.

Turkey	196
US	57

Table 1 Participant's country

Table 1 summarize participant's origin. One hundred and ninety six participants are from Turkey and fifty seven participants are from US. Participants demographic data are summarized in table 2.

		Turkey	US
Gender	Male	62.8%	40.4%
	Female	37.2%	59.6%
Frequently place connected internet	At Home	88.8%	43.9%
	At School	10.7%	15.8%
	Both	0.5%	40.4%
Social Network Account Ownership	Yes	94.9%	94.7%
	No	5.1%	5.3%
Blog Account Ownership	Yes	27.6%	38.6%
	No	72.4%	61.4%
Microblog Account Ownership	Yes	43.4%	17.5%
	No	56.6%	82.5%

Table 2 Participant's demographic data

As can be seen in Table 2 62.8% of the Turkish participants are male and 40.4% of the US participants are male. While 40.4% of the US participant's frequently connect internet at home and at school, just 0.5% of the Turkish participants connect internet at home and at school. On the other hand while 10.7% of the Turkish participants generally connect internet at school, 15.8% or

the US participants frequently connect the internet at school. When look at social network account ownership they are almost equal, 94.9% of the Turkish participants have at least one social network account, 94.7% of the US participants have at least one social network account. Blog and Microblog account ownership are quite low when they are compared with social network account ownership. Just 27.6% of the Turkish participants and 38.6% of the US participants have blog account ownership. And 43.6% of the Turkish and 17.5% of the US participants have microblog account.

	Computer Usage Experience (Year)		*Internet Usage Experience (Year)*		*Duration of Computer usage in a day (Hour)*		*Duration of internet usage in a day (Hour)*	
	TR	US	TR	US	TR	US	TR	US
Mean	10.20	12.77	8.48	11.09	5.14	3.37	4.45	3.21
Std. Deviation	3.26	2.55	2.57	2.61	3.35	1.89	3.52	1.79
Minimum	2	7	3	4	1	1	1	1
Maximum	18	19	17	18	18	9	18	9

Table 3. Participants computer and internet usage experience, duration of internet and computer daily usage explorative data

In table 3 participants computer and internet usage experience and duration of internet and computer daily usage are summarized. As can be seen in table 3 Turkish participants have averagely 10.20 years computer usage experience and 8.48 years internet usage experience, on the other hand US participants have 12.77 years computer usage experience and 11.09 years internet usage experience. While Turkey participants computer usage mean is 5.14 hours, US participant's usage 3.37 hours in a day. And while Turkey participant's internet usage is 4.45 hours, US participant's internet usage is 3.21 hours. In summary, US participants have more internet and computer usage experience than Turkey participants, Turkey participants use more computer and internet than US participants.

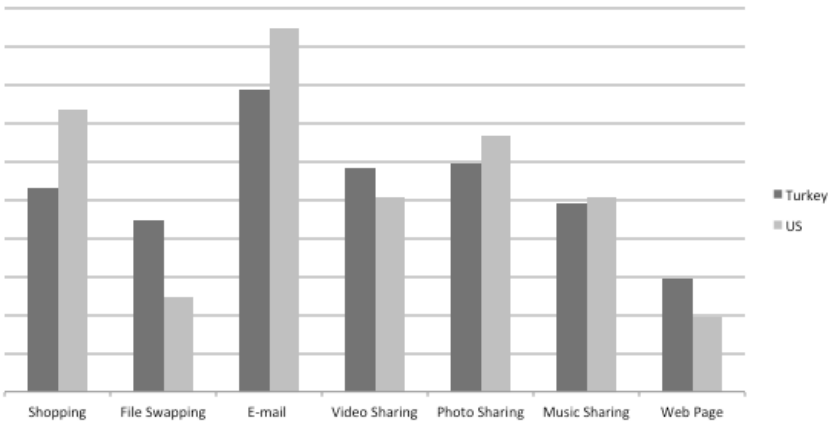

Figure 1 Activities participants generally do at home

To examine participants internet usage characteristics, some questions were asked to students and results can be seen in figure 1. Shopping, file swapping, e-mail related stuff (checking e-mail, sending new e-mail message etc.), video sharing, photo sharing, music sharing and developing web page options were provided and participants were asked whether they do these activities or not. Mostly done activities by Turkish participants are: e-mail related stuff sharing photo and sharing video, and mostly done activities by US participants are: e-mail related stuff, online shopping and sharing photo.

			TR	US	Pearson Chi-Square	df	Asymp. Sig. (2-sided)
Forum	Never Use	Count	33	39	57,713		,000
		% within country	16,8%	68,4%			
	Use	Count	163	18			
		% within country	83,2%	31,6%			
Blog	Never Use	Count	66	32	9,392	1	,002
		% within country	33,7%	56,1%			
	Use	Count	130	25			
		% within country	66,3%	43,9%			
Wiki Tools	Never Use	Count	38	27	18,109	1	,000
		% within country	19,4%	47,4%			
	Use	Count	158	30			
		% within country	80,6%	52,6%			
Social Network Sites	Never Use	Count	4	14	33,890	1	,000
		% within country	2,0%	24,6%			
	Use	Count	192	43			
		% within country	98,0%	75,4%			
Social Bookmarking	Never Use	Count	17	30	56,411	1	,000
		% within country	8,7%	52,6%			
	Use	Count	179	27			
		% within country	91,3%	47,4%			
Podcast	Never Use	Count	94	35	3,194	1	,074
		% within country	48,0%	61,4%			
	Use	Count	102	22			

		% within country	52,0%	38,6%			
Videocast	Never Use	Count	77	39	15,098	1	,000
		% within country	39,3%	68,4%			
	Use	Count	119	18			
		% within country	60,7%	31,6%			
RSS	Never Use	Count	95	44	14,717	1	,000
		% within country	48,5%	77,2%			
	Use	Count	101	13			
		% within country	51,5%	22,8%			
Productivity Tools	Never Use	Count	34	22	11,569	1	,001
		% within country	17,3%	38,6%			
	Use	Count	162	35			
		% within country	82,7%	61,4%			
Online Communication Tools	Never Use	Count	20	14	7,825	1	,005
		% within country	10,2%	24,6%			
	Use	Count	176	43			
		% within country	89,8%	75,4%			
Screencast	Never Use	Count	97	38	5,235	1	,022
		% within country	49,5%	66,7%			
	Use	Count	99	19			
		% within country	50,5%	33,3%			
Voicethread	Never Use	Count	107	40	4,405	1	,036
		% within country	54,6%	70,2%			
	Use	Count	89	17			
		% within country	45,4%	29,8%			

Table 4 Comparison of web 2.0 tools usage in learning activities by participant's country

A series of chi-square test of independence was performed to examine the relation between participants' countries and each web 2.0 tools usage in learning activities. The relationship between participants' countries and forum usage in learning activities was significant $X^2_{(1,\ 253)}$=57,713, p<.05. Turkish students are likely to use more forum tools in learning activities. The relationship between participants' countries and blog usage in learning activities was significant $X^2_{(1,\ 253)}$=9,392, p<.05. Turkish students are likely to use more blog tools in learning activities. The relationship

between participants' countries and wiki tools usage in learning activities was significant $X^2_{(1, 253)}$=18,109, p<.05. Turkish students are likely to use more wiki tools in learning activities. The relationship between participants' countries and social network site usage in learning activities was significant $X^2_{(1, 253)}$=33,890, p<.05. Turkish students are likely to use more social network site tools in learning activities. The relationship between participants' countries and social bookmarking usage in learning activities was significant $X^2_{(1, 253)}$=56,411, p<.05. Turkish students are likely to use more social bookmarking tools in learning activities. The relationship between participants' countries and videocast usage in learning activities was significant $X^2_{(1, 253)}$=15,098, p<.05. Turkish students are likely to use more videocast tools in learning activities. The relationship between participants' countries and RSS usage in learning activities was significant $X^2_{(1, 253)}$=14,717, p<.05. Turkish students are likely to use more RSS tools in learning activities. The relationship between participants' countries and productivity tools usage in learning activities was significant $X^2_{(1, 253)}$=11,569, p<.05. Turkish students are likely to use more productivity tools in learning activities. The relationship between participants' countries and online communication tools usage in learning activities was significant $X^2_{(1, 253)}$=7,825, p<.05. Turkish students are likely to use more online communication tools in learning activities. The relationship between participants' countries and screencast usage in learning activities was significant $X^2_{(1, 253)}$=5,235, p<.05. Turkish students are likely to use more screencast in learning activities. The relationship between participants' countries and videocast usage in learning activities was significant $X^2_{(1, 253)}$=4,405, p<.05. Turkish students are likely to use more videocast in learning activities.

			Turkey	US	Pearson Chi-Square	df	Asymp. Sig. (2-sided)
Forum	Never Use	Count	49	40	39,520	1	,000
		% within country	25,0%	70,2%			
	Use	Count	147	17			
		% within country	75,0%	29,8%			
Blog	Never Use	Count	65	35	14,733	1	,000
		% within country	33,2%	61,4%			
	Use	Count	131	22			
		% within country	66,8%	38,6%			
Wiki Tools	Never Use	Count	56	40	32,460	1	,000
		% within country	28,6%	70,2%			
	Use	Count	140	17			
		% within country	71,4%	29,8%			
Social Network Sites	Never Use	Count	17	8	1,426	1	,232
		% within country	8,7%	14,0%			
	Use	Count	179	49			
		% within country	91,3%	86,0%			

Social Bookmarking	Never Use	Count	21	35	65,831	1	,000
		% within country	10,7%	61,4%			
	Use	Count	175	22			
		% within country	89,3%	38,6%			
Podcast	Never Use	Count	89	39	9,356	1	,002
		% within country	45,4%	68,4%			
	Use	Count	107	18			
		% within country	54,6%	31,6%			
Videocast	Never Use	Count	85	36	6,766	1	,009
		% within country	43,6%	63,2%			
	Use	Count	110	21			
		% within country	56,4%	36,8%			
RSS	Never Use	Count	104	45	12,223	1	,000
		% within country	53,1%	78,9%			
	Use	Count	92	12			
		% within country	46,9%	21,1%			
Productivity Tools	Never Use	Count	52	26	7,541	1	,006
		% within country	26,5%	45,6%			
	Use	Count	144	31			
		% within country	73,5%	54,4%			
Online Communication Tools	Never Use	Count	38	17	2,827	1	,093
		% within country	19,4%	29,8%			
	Use	Count	158	40			
		% within country	80,6%	70,2%			
Screencast	Never Use	Count	108	43	7,590	1	,006
		% within country	55,1%	75,4%			
	Use	Count	88	14			
		% within country	44,9%	24,6%			
Voicethread	Never Use	Count	115	42	4,226	1	,040
		% within country	58,7%	73,7%			

	Use	Count	81	15			
		% within country	41,3%	26,3%			

Table 5 Comparison of web 2.0 tools usage in entertainment activities by participant's country

A series of chi-square test of independence was performed to examine the relation between participants' countries and each web 2.0 tools usage in entertainment activities. The relationship between participants' countries and forum usage in entertainment activities was significant $X^2_{(1, 253)}$=39,520, p<.05. Turkish students are likely to use more forum tools in entertainment activities. The relationship between participants' countries and blog usage in entertainment activities was significant $X^2_{(1, 253)}$=14,733, p<.05. Turkish students are likely to use more blog tools in entertainment activities. The relationship between participants' countries and wiki tools usage in entertainment activities was significant $X^2_{(1, 253)}$=32,460, p<.05. Turkish students are likely to use more wiki tools in entertainment activities. The relationship between participants' countries and social bookmarking usage in entertainment activities was significant $X^2_{(1, 253)}$=65,831, p<.05. Turkish students are likely to use more social bookmarking tools in entertainment activities. The relationship between participants' countries and podcast usage in entertainment activities was significant $X^2_{(1, 253)}$=9,356 p<.05. Turkish students are likely to use more podcast tools in entertainment activities. The relationship between participants' countries and videocast usage in entertainment activities was significant $X^2_{(1, 253)}$=6,766 p<.05. Turkish students are likely to use more videocast tools in entertainment activities. The relationship between participants' countries and RSS usage in entertainment activities was significant $X^2_{(1, 253)}$=12,223, p<.05. Turkish students are likely to use more RSS tools in entertainment activities. The relationship between participants' countries and productivity tools usage in entertainment activities was significant $X^2_{(1, 253)}$=7,541, p<.05. Turkish students are likely to use more productivity tools in entertainment activities. The relationship between participants' countries and screencast usage in entertainment activities was significant $X^2_{(1, 253)}$=7,590 p<.05. Turkish students are likely to use more screencast in entertainment activities. The relationship between participants' countries and videocast usage in entertainment activities was significant $X^2_{(1, 253)}$=4226, p<.05. Turkish students are likely to use more videocast in entertainment activities.

To achieve deep understanding concerning web 2.0 tools usage in learning and entertainment activities each countries participant's data were analyzed separately by various independent variables. Independent variables are gender, social network site account ownership, blog account ownership and microblog account ownership. Analysis results are held by different independent variables can be seen following tables.

		Male	Female	t	df	sig
Social bookmarking	TR	3.33 (0.76)	3.00 (1.17)	2.13	109.030	0.036
	US	1.87 (1.01)	1.76 (1.02)	0.38	55	0.704
Podcast	TR	2.02 (1.00)	1.60 (0.85)	2.96	194.000	0.003
	US	1.39 (0.72)	1.65 (0.85)	-1.18	55	0.242
Videocast	TR	2.25 (1.00)	1.70 (0.92)	3.84	194	0.000
	US	1.52 (0.90)	1.47 (0.79)	0.23	55	0.821
Screencast	TR	2.00 (1.06)	1.59 (0.76)	3.15	186.708	0.002
	US	1.22 (0.42)	1.65 (0.92)	-2.38	49.585	0.021

Table 6 Comparison of web 2.0 tools usage frequency in learning activities by participant's gender

Independent-samples t-test was conducted to compare web 2.0 tools usage frequency in learning activities by gender and results are displayed in table 6. According to results there was a significant difference in the frequency of Social bookmarking usage in learning activities by Turkish male participants (M=3.33, SD=0.76) and Turkish female participants (M=3.00, SD=1.17); $t_{(109.03)}$=2.13, p=0.036. There was a significant difference in the frequency of Podcast usage in learning activities by Turkish male participants (M=2.02, SD=1.00) and Turkish female participants (M=1.60, SD=0.85); $t_{(194)}$=2.96, p=0.003. There was a significant difference in the frequency of Videocast usage in learning activities by Turkish male participants (M=2.25, SD=1.00) and Turkish female participants (M=1.70, SD=0.92); $t_{(194)}$=3.84, p=0.000. There was a significant difference in the frequency of Screencast usage in learning activities by Turkish male participants (M=2.00, SD=1.06) and Turkish female participants (M=1.59, SD=0.76); $t_{(186.708)}$=3.15, p=0.002. There was a significant difference in the frequency of Screencast usage in learning activities by US male participants (M=1.22, SD=0.42) and US female participants (M=1.65, SD=0.92); $t_{(49.585)}$=-2.38, p=0.021.

		Yes	No	t	df	sig
Forum	TR	2.60 (0.98)	2.10 (0.99)	1.56	194	0.121
	US	1.50 (0.82)	1.00 (0.00)	4.49	53	0.000
Blog	TR	2.18 (1.01)	1.80 (0.79)	1.17	194	0.245
	US	1.70 (0.88)	1.00 (0.00)	5.86	53	0.000
Social bookmarking	TR	3.22 (0.93)	3.00 (1.15)	0.70	194	0.484
	US	1.85 (1.02)	1.00 (0.00)	6.16	53	0.000
Podcast	TR	1.89 (0.97)	1.40 (0.84)	1.56	194	0.120

	US	1.57 (0.81)	1.00 (0.00)	5.18	53	0.000
Rss tools	TR	1.84 (0.94)	1.30 (0.67)	1.81	194	0.072
	US	1.37 (0.73)	1.00 (0.00)	3.71	53	0.001
Productivity tools	TR	2.63 (0.98)	1.90 (0.74)	2.34	194	0.021
	US	2.24 (1.15)	2.00 (1.00)	0.36	53	0.724
Screencast	TR	1.86 (0.98)	1.60 (0.97)	0.82	194	0.412
	US	1.50 (0.80)	1.00 (0.00)	4.62	53	0.000
Voicethread	TR	1.72 (0.89)	1.60 (0.97)	0.40	194	0.691
	US	1.43 (0.72)	1.00 (0.00)	4.37	53	0.000

Table 7 Comparison of web 2.0 tools usage frequency in learning activities by participant's social network site account ownership

Independent-samples t-test was conducted to compare web 2.0 tools usage frequency in learning activities by social network site account ownership and results are displayed in table 7. According to results there was a significant difference in the frequency of Forum usage in learning acitivities by US participants who have a social network site(M=1.50, SD=0.82) and US participants who do not have a social network site(M=1.00, SD=0.00); $t_{(53)}$=4.49, p=0.000. There was a significant difference in the frequency of Blog usage in learning activities by US participants who have a social network site(M=1.70, SD=0.88) and US participants who do not have a social network site(M=1.00, SD=0.00); $t_{(53)}$=5.86, p=0.000. There was a significant difference in the frequency of Social bookmarking usage in learning activities by US participants who have a social network site(M=1.85, SD=1.02) and US participants who do not have a social network site(M=1.00, SD=0.00); $t_{(53)}$=6.16, p=0.000. There was a significant difference in the frequency of Podcast usage in learning activities by US participants who have a social network site(M=1.57, SD=0.81) and US participants who do not have a social network site(M=1.00, SD=0.00); $t_{(53)}$=5.18, p=0.000. There was a significant difference in the frequency of Rss tools usage in learning activities by US participants who have a social network site(M=1.37, SD=0.73) and US participants who do not have a social network site(M=1.00, SD=0.00); $t_{(53)}$=3.71, p=0.001. There was a significant difference in the frequency of Productivity tools usage in learning activities by Turkish participants who have a social network site(M=2.63, SD=0.98) and Turkish participants who do not have a social network site(M=1.90, SD=0.74); $t_{(194)}$=2.34, p=0.021. There was a significant difference in the frequency of Screencast usage in learning activities by US participants who have a social network site(M=1.50, SD=0.80) and US participants who do not have a social network site(M=1.00, SD=0.00); $t_{(53)}$=4.62, p=0. There was a significant difference in the frequency of Voicethread usage in learning activities by US participants who have a social network site(M=1.43, SD=0.72) and US participants who do not have a social network site(M=1.00, SD=0.00); $t_{(53)}$=4.37, p=0.

		yes	no	T	df	Sig
Blog	TR	2.69 (0.97)	1.96 (0.94)	4.81	194	0.000
	US	2.27 (0.94)	1.29 (0.57)	4.45	30.997	0.000
Wiki	TR	2.98 (0.88)	2.47 (1.06)	3.41	114.955	0.001
	US	1.91 (0.92)	1.89 (1.08)	0.08	55	0.933
Podcast	TR	2.09 (0.98)	1.77 (0.95)	2.08	194	0.039
	US	1.91 (0.97)	1.31 (0.58)	2.59	30.604	0.014
Rss tools	TR	2.20 (0.98)	1.67 (0.87)	3.70	194	0.000
	US	1.36 (0.66)	1.34 (0.76)	0.11	55	0.917
Productivity tools	TR	2.81 (0.83)	2.51 (1.02)	2.13	117.782	0.036
	US	2.32 (1.25)	2.17 (1.07)	0.47	55	0.639
Screencast	TR	2.26 (1.10)	1.69 (0.88)	3.41	79.839	0.001
	US	1.64 (0.79)	1.37 (0.77)	1.25	55	0.216
Voicethread	TR	1.93 (0.91)	1.63 (0.87)	2.12	194	0.035
	US	1.64 (0.73)	1.26 (0.66)	2.04	55	0.047

Table 8 Comparison of web 2.0 tools usage frequency in learning activities by participant's blog account ownership

Independent-samples t-test was conducted to compare web 2.0 tools usage frequency in learning activities by blog account ownership and results are displayed in table 8. According to results there was a significant difference in the frequency of Blog usage in learning activities by Turkish participants who have a blog account (M=2.69, SD=0.97) and Turkish participants who do not have a blog account (M=1.96, SD=0.94); $t_{(194)}$=4.81, p=0.000. There was a significant difference in the frequency of Blog usage in learning activities by US participants who have a blog account (M=2.27, SD=0.94) and US participants who do not have a blog account (M=1.29, SD=0.57); $t_{(30.997)}$=4.45, p=0.000. There was a significant difference in the frequency of Wiki usage in learning activities by Turkish participants who have a blog account (M=2.98, SD=0.88) and Turkish participants who do not have a blog account (M=2.47, SD=1.06); $t_{(114.955)}$=3.41, p=0.001. There was a significant difference in the frequency of Podcast usage in learning activities by Turkish participants who have a blog account (M=2.09, SD=0.98) and Turkish participants who do not have a blog account (M=1.77, SD=0.95); $t_{(194)}$=2.08, p=0.039. There was a significant difference in the frequency of Podcast usage in learning activities by US participants who have a blog account (M=1.91, SD=0.97) and US participants who do not have a blog account (M=1.31, SD=0.58); $t_{(30.604)}$=2.59, p=0.014. There was a significant difference in the frequency of Rss tools usage in learning activities by Turkish participants who have a blog account (M=2.20, SD=0.98) and Turkish participants who do not have a blog account (M=1.67, SD=0.87); $t_{(194)}$=3.7, p=0.000. There was a significant difference in the frequency of Productivity tools usage in learning activities by Turkish participants who have a blog account (M=2.81, SD=0.83) and Turkish participants who do not have a blog account (M=2.51, SD=1.02); $t_{(117.782)}$=2.13, p=0.036. There was a significant

difference in the frequency of Screencast usage in learning activities by Turkish participants who have a blog account (M=2.26, SD=1.10) and Turkish participants who do not have a blog account (M=1.69, SD=0.88); $t_{(79.839)}$=3.41, p=0.001. There was a significant difference in the frequency of Voicethread usage in learning activities by Turkish participants who have a blog account (M=1.93, SD=0.91) and Turkish participants who do not have a blog account (M=1.63, SD=0.87); $t_{(194)}$=2.12, p=0.035. There was a significant difference in the frequency of Voicethread usage in learning activities by US participants who have a blog account (M=1.64, SD=0.73) and US participants who do not have a blog account (M=1.26, SD=0.66); $t_{(55)}$=2.04, p=0.047.

		Yes	no	t	df	Sig
Forum	TR	2.85 (0.92)	2.36 (0.99)	3.52	194	0.001
	US	1.30 (0.48)	1.51 (0.86)	-0.75	55	0.457
Blog	TR	2.51 (1.03)	1.89 (0.89)	4.47	194	0.000
	US	1.80 (0.92)	1.64 (0.87)	0.53	55	0.599
Wiki	TR	2.80 (1.01)	2.47 (1.04)	2.24	194	0.026
	US	1.70 (0.95)	1.94 (1.03)	-0.67	55	0.508
Social networks	TR	3.65 (0.59)	3.40 (0.81)	2.50	193.561	0.013
	US	3.50 (0.97)	2.79 (1.27)	1.99	16.273	0.064
Podcast	TR	2.08 (1.05)	1.69 (0.86)	2.77	160.454	0.006
	US	1.60 (0.52)	1.53 (0.86)	0.24	55	0.810
Videocast	TR	2.20 (0.95)	1.93 (1.04)	1.88	194	0.061
	US	1.20 (0.42)	1.55 (0.88)	-1.91	28.603	0.066
Rss tools	TR	2.00 (1.00)	1.68 (0.85)	2.44	194	0.015
	US	1.30 (0.67)	1.36 (0.74)	-0.24	55	0.808
Productivity tools	TR	2.76 (1.00)	2.47 (0.95)	2.12	194	0.036
	US	1.90 (1.10)	2.30 (1.14)	-1.01	55	0.318
Screencast	TR	2.11 (1.12)	1.65 (0.79)	3.19	144.364	0.002
	US	1.30 (0.48)	1.51 (0.83)	-0.77	55	0.444
Voicethread	TR	1.88 (0.91)	1.58 (0.86)	2.41	194	0.017
	US	1.40 (0.52)	1.40 (0.74)	-0.02	55	0.986

Table 9 Comparison of web 2.0 tools usage frequency in learning activities by participant's microblog account ownership

Independent-samples t-test was conducted to compare web 2.0 tools usage frequency in learning activities by microblog account ownership and results are displayed in table 9. According to results there was a significant difference in the frequency of Forum usage in learning activities by Turkish participants who have a microblog account (M=2.85, SD=0.92) and Turkish participants who do not have a microblog account (M=2.36, SD=0.99); $t_{(194)}$=3.52, p=0.001. There was a significant difference in the frequency of Blog usage in learning activities by Turkish participants who have a microblog account (M=2.51, SD=1.03) and Turkish participants who do not have a microblog account (M=1.89, SD=0.89); $t_{(194)}$=4.47, p=0.000. There was a significant difference in the frequency of Wiki usage in learning activities by Turkish participants who have a microblog account (M=2.80, SD=1.01) and Turkish participants who do not have a microblog account (M=2.47, SD=1.04); $t_{(194)}$=2.24, p=0.026. There was a significant difference in the frequency of Social networks usage in learning activities by Turkish participants who have a microblog account (M=3.65, SD=0.59) and Turkish participants who do not have a microblog account (M=3.40, SD=0.81); $t_{(193.561)}$=2.5, p=0.013. There was a significant difference in the frequency of Podcast usage in learning activities by Turkish participants who have a microblog account (M=2.08, SD=1.05) and Turkish participants who do not have a microblog account (M=1.69, SD=0.86); $t_{(160.454)}$=2.77, p=0.006. There was a significant difference in the frequency of Rss tools usage in learning activities by Turkish participants who have a microblog account (M=2.00, SD=1.00) and Turkish participants who do not have a microblog account (M=1.68, SD=0.85); $t_{(194)}$=2.44, p=0.015. There was a significant difference in the frequency of Productivity tools usage in learning activities by Turkish participants who have a microblog account (M=2.76, SD=1.00) and Turkish participants who do not have a microblog account (M=2.47, SD=0.95); $t_{(194)}$=2.12, p=0.036. There was a significant difference in the frequency of Screencast usage in learning activities by Turkish participants who have a microblog account (M=2.11, SD=1.12) and Turkish participants who do not have a microblog account (M=1.65, SD=0.79); $t_{(144.364)}$=3.19, p=0.002. There was a significant difference in the frequency of Voicethread usage in learning activities by Turkish participants who have a microblog account (M=1.88, SD=0.91) and Turkish participants who do not have a microblog account (M=1.58, SD=0.86); $t_{(194)}$=2.41, p=0.017.

		Male	Female	t	df	sig
Wiki	TR	2.46 (1.07)	2.15 (0.97)	2.04	194	0.042
	US	1.70 (1.02)	1.44 (0.89)	1.00	55	0.324
Podcast	TR	2.09 (1.02)	1.66 (0.87)	3.03	194	0.003
	US	1.48 (0.99)	1.62 (0.92)	-0.54	55	0.590
Videocast	TR	2.15 (1.06)	1.74 (0.93)	2.73	193	0.007
	US	1.48 (0.85)	1.62 (0.85)	-0.61	55	0.546
Online communication tools	TR	2.73 (1.03)	2.68 (1.12)	0.30	194	0.767
	US	2.22 (1.24)	2.97 (1.19)	-2.30	55	0.025
Screencast	TR	1.84 (0.96)	1.53 (0.80)	2.27	194	0.024
	US	1.17 (0.39)	1.47 (0.90)	-1.71	48.252	0.094

Table 10 Comparison of web 2.0 tools usage frequency in entertainment activities by participant's gender

Independent-samples t-test was conducted to compare web 2.0 tools usage frequency in entertainment activities by gender and results are displayed in table 10. According to results there was a significant difference in the frequency of Wiki usage in entertainment activities by Turkish male participants (M=2.46, SD=1.07) and Turkish female participants (M=2.15, SD=0.97); $t_{(194)}$=2.04, p=0.042. There was a significant difference in the frequency of Podcast usage in entertainment activities by Turkish male participants (M=2.09, SD=1.02) and Turkish female participants (M=1.66, SD=0.87); $t_{(194)}$=3.03, p=0.003. There was a significant difference in the frequency of Videocast usage in entertainment activities by Turkish male participants (M=2.15, SD=1.06) and Turkish female participants (M=1.74, SD=0.93); $t_{(193)}$=2.73, p=0.007. There was a significant difference in the frequency of Online communication tools usage in entertainment activities by US male participants (M=2.22, SD=1.24) and US female participants (M=2.97, SD=1.19); $t_{(55)}$=-2.3, p=0.025. There was a significant difference in the frequency of Screencast usage in entertainment activities by Turkish male participants (M=1.84, SD=0.96) and Turkish female participants (M=1.53, SD=0.80); $t_{(194)}$=2.27, p=0.024.

		Yes	No	t	df	sig
Forum	TR	2.44 (1.01)	2.00 (0.82)	1.35	194	0.178
	US	1.50 (0.86)	1.00 (0.00)	4.26	53	0.000
Blog	TR	2.17 (0.99)	2.10 (0.88)	0.22	194	0.823
	US	1.70 (0.96)	1.00 (0.00)	5.36	53	0.000
Wiki	TR	2.33 (1.04)	2.60 (1.07)	-0.79	194	0.433
	US	1.57 (0.96)	1.00 (0.00)	4.38	53	0.000
Social networks	TR	3.27 (0.88)	2.20 (1.32)	2.55	9.437	0.030
	US	3.50 (1.02)	1.33 (0.58)	3.61	55	0.001
Social bookmarking	TR	3.03 (0.94)	2.40 (1.26)	1.54	9.547	0.155
	US	1.72 (1.04)	1.00 (0.00)	5.13	53	0.000
Podcast	TR	1.93 (0.99)	1.90 (0.88)	0.09	194	0.925
	US	1.59 (0.96)	1.00 (0.00)	4.53	53	0.000
Videocast	TR	1.97 (1.01)	2.40 (1.35)	-0.99	9.550	0.349
	US	1.59 (0.86)	1.00 (0.00)	5.07	53	0.000
Rss tools	TR	1.83 (1.01)	1.80 (0.79)	0.09	194	0.931
	US	1.26 (0.52)	1.00 (0.00)	3.66	53	0.001
Productivity tools	TR	2.45 (1.03)	1.60 (0.84)	2.55	194	0.011
	US	2.20 (1.23)	1.33 (0.58)	2.33	3.137	0.098

Table 11 Comparison of web 2.0 tools usage frequency in entertainment activities by participant's social network site account ownership

Independent-samples t-test was conducted to compare web 2.0 tools usage frequency in entertainment activities by social network site account ownership and results are displayed in table 11. According to results There was a significant difference in the frequency of Forum usage in entertainment activities by US participants who have a social network site account (M=1.50, SD=0.86) and US participants who do not have a social network site account (M=1.00, SD=0.00); $t_{(53)}$=4.26, p=0.000.

There was a significant difference in the frequency of Blog usage in entertainment activities by US participants who have a social network site account (M=1.70, SD=0.96) and US participants who do not have a social network site account (M=1.00, SD=0.00); $t_{(53)}$=5.36, p=0.000.

There was a significant difference in the frequency of Wiki usage in entertainment activities by US participants who have a social network site account (M=1.57, SD=0.96) and US participants who do not have a social network site account (M=1.00, SD=0.00); $t_{(53)}$=4.38, p=0.000.

There was a significant difference in the frequency of Social networks usage in entertainment activities by Turkish participants who have a social network site account (M=3.27, SD=0.88) and Turkish participants who do not have a social network site account (M=2.20, SD=1.32); $t_{(9.437)}$=2.55, p=0.03.

There was a significant difference in the frequency of Social networks usage in entertainment activities by US participants who have a social network site account (M=3.50, SD=1.02) and US participants who do not have a social network site account (M=1.33, SD=0.58); $t_{(55)}$=3.61, p=0.001. There was a significant difference in the frequency of Social bookmarking usage in entertainment activities by US participants who have a social network site account (M=1.72, SD=1.04) and US participants who do not have a social network site account (M=1.00, SD=0.00); $t_{(53)}$=5.13, p=0.000.

There was a significant difference in the frequency of Podcast usage in entertainment activities by US participants who have a social network site account (M=1.59, SD=0.96) and US participants who do not have a social network site account (M=1.00, SD=0.00); $t_{(53)}$=4.53, p=0.000. There was a significant difference in the frequency of Videocast usage in entertainment activities by US participants who have a social network site account (M=1.59, SD=0.86) and US participants who do not have a social network site account (M=1.00, SD=0.00); $t_{(53)}$=5.07, p=0.000. There was a significant difference in the frequency of Rss tools usage in entertainment activities by US participants who have a social network site account (M=1.26, SD=0.52) and US participants who do not have a social network site account (M=1.00, SD=0.00); $t_{(53)}$=3.66, p=0.001.

There was a significant difference in the frequency of Productivity tools usage in entertainment activities by Turkish participants who have a social network site account (M=2.45, SD=1.03) and Turkish participants who do not have a social network site account (M=1.60, SD=0.84); $t_{(194)}$=2.55, p=0.011.

		yes	no	t	df	Sig
Blog	TR	2.54 (0.91)	2.03 (0.98)	3.31	194	0.001
	US	2.36 (1.05)	1.23 (0.55)	4.69	28.286	0.000
Podcast	TR	2.17 (0.93)	1.84 (0.99)	2.11	194	0.036
	US	1.91 (1.02)	1.34 (0.84)	2.28	55	0.026
Rss tools	TR	2.15 (1.11)	1.70 (0.93)	2.83	194	0.005
	US	1.36 (0.58)	1.17 (0.45)	1.32	36.781	0.195
Productivity tools	TR	2.70 (0.90)	2.29 (1.06)	2.73	111.785	0.007
	US	2.27 (1.20)	2.09 (1.25)	0.56	55	0.578
Screencast	TR	2.07 (0.91)	1.59 (0.88)	3.39	194	0.001
	US	1.27 (0.46)	1.40 (0.88)	-0.63	55	0.534
Voicethread	TR	1.94 (0.94)	1.56 (0.84)	2.80	194	0.006
	US	1.36 (0.49)	1.31 (0.76)	0.27	55	0.787

Table 12 Comparison of web 2.0 tools usage frequency in entertainment activities by participant's blog account ownership

Independent-samples t-test was conducted to compare web 2.0 tools usage frequency in entertainment activities by blog account ownership and results are displayed in table 12. According to results there was a significant difference in the frequency of Blog usage in entertainment activities by Turkish participants who have a blog account (M=2.54, SD=0.91) and Turkish participants who do not have a blog site account (M=2.03, SD=0.98); $t_{(194)}$=3.31, p=0.001. There was a significant difference in the frequency of blog usage in entertainment activities by US participants who have a blog account (M=2.36, SD=1.05) and US participants who do not have a blog site account (M=1.23, SD=0.55); $t_{(28.286)}$=4.69, p=0.000. There was a significant difference in the frequency of Podcast usage in entertainment activities by Turkish participants who have a blog account (M=2.17, SD=0.93) and Turkish participants who do not have a blog site account (M=1.84, SD=0.99); $t_{(194)}$=2.11, p=0.036. There was a significant difference in the frequency of podcast usage in entertainment activities by US participants who have a blog account (M=1.91, SD=1.02) and US participants who do not have a blog site account (M=1.34, SD=0.84); $t_{(55)}$=2.28, p=0.026. There was a significant difference in the frequency of Rss tools usage in entertainment activities by Turkish participants who have a blog account (M=2.15, SD=1.11) and Turkish participants who do not have a blog site account (M=1.70, SD=0.93); $t_{(194)}$=2.83, p=0.005. There was a significant difference in the frequency of Productivity tools usage in entertainment activities by Turkish participants who have a blog account (M=2.70, SD=0.90) and Turkish participants who do not have a blog site account (M=2.29, SD=1.06); $t_{(111.785)}$=2.73, p=0.007. There was a significant difference in the frequency of Screencast usage in entertainment activities by Turkish participants who have a blog account (M=2.07, SD=0.91) and Turkish participants who do not have a blog site account (M=1.59, SD=0.88); $t_{(194)}$=3.39, p=0.001. There was a significant difference in the frequency of Voicethread usage in entertainment activities by Turkish participants who have a blog account (M=1.94, SD=0.94) and Turkish participants who do not have a blog site account (M=1.56, SD=0.84); $t_{(194)}$=2.8, p=0.006.

		yes	no	t	df	Sig
Forum	TR	2.65 (0.93)	2.24 (1.03)	2.83	194	0.005
	US	1.70 (1.06)	1.43 (0.80)	0.93	55	0.357
Blog	TR	2.45 (0.99)	1.95 (0.93)	3.57	194	0.000
	US	2.20 (1.03)	1.55 (0.90)	2.00	55	0.050
Wiki	TR	2.62 (1.06)	2.14 (0.99)	3.33	194	0.001
	US	2.10 (1.29)	1.43 (0.83)	1.59	10.637	0.141
Social bookmarking	TR	3.20 (0.88)	2.84 (1.00)	2.63	194	0.009
	US	2.30 (1.25)	1.55 (0.93)	2.17	55	0.034
Podcast	TR	2.15 (1.02)	1.76 (0.93)	2.84	194	0.005
	US	2.00 (0.82)	1.47 (0.95)	1.64	55	0.107
Videocast	TR	2.17 (1.02)	1.86 (1.02)	2.05	193	0.042
	US	1.70 (0.82)	1.53 (0.86)	0.57	55	0.573
Productivity tools	TR	2.62 (1.03)	2.23 (1.01)	2.65	194	0.009
	US	2.10 (1.10)	2.17 (1.26)	-0.16	55	0.871
Online communication tools	TR	2.94 (0.97)	2.54 (1.10)	2.70	190.317	0.007
	US	2.50 (1.27)	2.70 (1.27)	-0.46	55	0.649
Voicethread	TR	1.86 (0.97)	1.51 (0.78)	2.69	159.335	0.008
	US	1.40 (0.52)	1.32 (0.69)	0.35	55	0.730

Table 13 Comparison of web 2.0 tools usage frequency in entertainment activities by participant's microblog account ownership

Independent-samples t-test was conducted to compare web 2.0 tools usage frequency in entertainment activities by microblog account ownership and results are displayed in table 13. According to results there was a significant difference in the frequency of Forum usage in entertainment activities by Turkish participants who have a microblog account (M=2.65, SD=0.93) and Turkish participants who do not have a microblog site account (M=2.24, SD=1.03); t(194)=2.83, p=0.005. There was a significant difference in the frequency of Blog usage in entertainment activities by Turkish participants who have amicroblog account (M=2.45, SD=0.99) and Turkish participants who do not have a microblog site account (M=1.95, SD=0.93); $t_{(194)}$=3.57, p=0.000. There was a significant difference in the frequency of Wiki usage in entertainment activities by Turkish participants who have a microblog account (M=2.62, SD=1.06) and Turkish participants who do not have a microblog site account (M=2.14, SD=0.99); $t_{(194)}$=3.33, p=0.001. There was a significant difference in the frequency of Social bookmarking usage in entertainment activities by Turkish participants who have a microblog account (M=3.20, SD=0.88) and Turkish participants who do not have a microblog site account (M=2.84, SD=1.00); $t_{(194)}$=2.63, p=0.009. There was a significant difference in the frequency of Podcast usage in

entertainment activities by Turkish participants who have a microblog account (M=2.15, SD=1.02) and Turkish participants who do not have a microblog site account (M=1.76, SD=0.93); $t_{(194)}$=2.84, p=0.005. There was a significant difference in the frequency of Videocast usage in entertainment activities by Turkish participants who have a microblog account (M=2.17, SD=1.02 and Turkish participants who do not have a microblog site account (M=1.86, SD=1.02); $t_{(193)}$=2.05, p=0.042. There was a significant difference in the frequency of Productivity tools usage in entertainment activities by Turkish participants who have a microblog account (M=2.62, SD=1.03) and Turkish participants who do not have a microblog site account (M=2.23, SD=1.01); $t_{(194)}$=2.65, p=0.009. There was a significant difference in the frequency of Online communication tools usage in entertainment activities by Turkish participants who have a microblog account (M=2.94, SD=0.97) and Turkish participants who do not have a microblog site account (M=2.54, SD=1.10); $t_{(190.317)}$=2.7, p=0.007. There was a significant difference in the frequency of Voicethread usage in entertainment activities by Turkish participants who have a microblog account (M=1.86, SD=0.97) and Turkish participants who do not have a microblog site account (M=1.51, SD=0.78); $t_{(159.335)}$=2.69, p=0.008.

VI. Discussion

In this section results revealed from the research data presented. Research population is 253 participants and 77.5% of the participants are from Turkey and 22.5% of the participants are from US. Most of the Turkish participants prefer their home to connect internet and almost half of the US participant use their home and school connection to use internet. Almost all of both countries participants have social network site account. Just one third of the participants have blog site account for both country. While half of the Turkish participants have microblogging site account just one fifth of US participants have micro blogging account. US participants have more experience in computer and internet usage than Turkish participants. On the other hand Turkish participants daily computer and internet usage durations are higher than US participants. In their research Brown & Czerniewicz (2010) found that 52% of the participants have more than years experience using computer and their results support this study's result. Li & Ranieri (2010) found in their research 32.2% of the participants use computer and 27.1% of the participants use internet frequently. While mostly done activities by Turkish participants are: e-mail related stuff sharing photo and sharing video, mostly done activities by US participants are: e-mail related stuff, online shopping and sharing photo. Margaryan, Littlejohn & Vojt (2011) found in their research most popular computer program was music downloading program and social networking, blogging and file sharing programs were less popular applications. Turkish participants use more frequently Forum, Blog, Wiki, Social networks, Social bookmarking, Podcast, Videocast, Rss tools, Productivity tools, Screencast and Voicethread in learning activities than US participants Turkish participants use more frequently Forum, Blog, Wiki, Social bookmarking, Podcast, Videocast, Rss tools, Screencast and Voicethread in entertainment activities than US participants. Jones, Ramanau, Cross & Healing (2010) in their research concerning social network sites found that 68.3% of the participants visit social network site at least once on a daily basis, and they found participants from different universities reported different visiting pattern.

Turkish male participants use more frequently Social bookmarking, Podcast, Videocast and screencast in learning activities than Turkish female participants and US female participants more frequently Screencast in learning activities than US male participants. US participants who have a social network site account use more frequently Forum, Blog, Social bookmarking, Podcast, RSS tools, Screencast and Videocast in learning activities than US participants who do not have a social network site account. And Turkish participants who have a social network site account use more frequently Productivity Tools in learning activities than Turkish participants who do not have a

social network site account. Turkish participants who have a blog site account use more frequently Blog, Wiki, Podcast, RSS Tools, Productivity Tools, Screencast and voicethread in learning activities than Turkish participants who do not have a blog site account. And US participants who have a blog site account use more frequently Blog, Podcast and Voicethread in learning activities than US participants who do not have a social network site account. Turkish participants who have a microblog site account use more frequently Forum, Blog, Wiki, Social Networks, Podcast, RSS Tools, Productivity tools, Screencast and voicethread in learning activities than Turkish participants who do not have a microblog site account. In a research concerning pre-service teacher attitudes towards using web 2.0 technologies in learning process Baltaci-Goktalay & Ozdilek (2010) found that 62% of the participants would use Web 2.0 technoogies in their future classes. In a research concerning web 2.0 tools, Ajjan & Hartshorne (2008) found that just 13.99% of the participants use Blogs, 23.78% use Wikis, 7.69% use Social network sites and 5.60% use social bookmarking sites in their class.

Turkish male participants use more frequently Wiki, Podcast, Videocast and Screencast in entertainment activities than Turkish female participants and US female participants more frequently Online communication tools in entertainment activities than US male participants. US participants who have a social network site account use more frequently Forum, Blog, Wiki, Social Network site, Social bookmarking, Podcast, Videocast and RSS tools in entertainment activities than US participants who do not have a social network site account. And Turkish participants who have a social network site account use more frequently Social network site and Productivity Tools in entertainment activities than Turkish participants who do not have a social network site account. Turkish participants who have a blog site account use more frequently Blog, Podcast, RSS tools, Productivity tools, Screencast and Voicethread in entertainment activities than Turkish participants who do not have a blog site account. And US participants who have a blog site account use more frequently Blog and Podcast in entertainment activities than US participants who do not have a social network site account. Turkish participants who have a microblog site account use more frequently Forum, Blog, Wiki, Social Bookmarking, Podcast, Videocast, Productivity Tools, Online Communication Tools and Voicethread in entertainment activities than Turkish participants who do not have a microblog site account. Kennedy, Dalgarno, Gray, Judd, Waycott, Bennett, Maton, Krause, Bishop, Chang & Churchward (2007) state that 80% of the participants never produced a podcast and 16% of the participants use social network sites at least once a day. In a research concerning Web 2.0 tools Aharony(2009) state that 45.3% of the participant use blogs, 89.2% use Wiki sites, 18.9% use RSS tools and 37.2% use Social network sites.

Recommendations revealed from the research are:

1. To develop pre-service teacher understandings concerning Web 2.0, some activities could be designed to use various Web 2.0 tools.

2. Having a blog or microblog account affect the other tools usage so if pre-service teachers to be encouraged to use at least one of the Web 2.0 tools in their educational practices, they can explore other tools.

3. To understand pre-service teacher why and how they choose Web 2.0 tools quantitative research could be held

References

Aharony, N.(2009). The influence of LIS students' personality characteristics on their perceptions towards Web 2.0 use. *Journal of Librarianship and Information Science*, 41, 227 – 242, DOI: 10.1177/0961000609345088.

Ajjan, H. & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *Internet and Higher Education*, 11, 71–80.

Baltaci-Goktalay, S. & Ozdilek, Z. (2010). Pre-service teachers' perceptions about web 2.0 technologies. *Procedia Social and Behavioral Sciences*, 2, 4737–4741.

Bennett, S., Bishop, A., Dalgarno, B., Kennedy, G. & Waycott, J. (2012). Implementing web 2.0 technologies in higher education: A collective case study. *Computers & Education*, doi: 10.1016/j.compedu.2011.12.022

Bower, M., Hedberg, J. G. & Kuswara,A. (2010). A framework for Web 2.0 learning design. *Educational Media International*, 47(3), 177–198, DOI: 10.1080/09523987.2010.518811

Brown, C. & Czerniewicz, L. (2010). Debunking the 'digital native': beyond digital apartheid, towards digital democracy. *Journal of Computer Assisted Learning*, 26, 357–369.

Cain, J. & Fox, B. I. (2009). Web 2.0 and Pharmacy Education. *American Journal of Pharmaceutical Education*, 73 (7), 1 – 11.

Chen, S., Yen, D. C. & Hwang, M. I. (2012). Factors influencing the continuance intention to the usage of Web 2.0: An empirical study. *Computers in Human Behavior*, In Press, doi: 10.1016/j.chb.2011.12.014.

Coutinho, C. & Mota, P. (2011). Web 2.0 Technologies in Music Education in Portugal: Using Podcasts for Learning. *Computers in the Schools*, 28(1), 56-74, http://dx.doi.org/10.1080/07380569.2011.552043.

Diaz, V. (2010). Web 2.0 and Emerging Technologies in Online Learning. *New Directions For Community Colleges*, 150, 57 – 66, DOI: 10.1002/cc.405

Greenhow, C., Robelia, B. & Hughes, J. E. (2009). Learning, Teaching, and Scholarship in a Digital Age : Web 2.0 and Classroom Research: What Path Should We Take Now?. *Educational Researcher*, 38, 246-259, DOI: 10.3102/0013189X09336671.

Grosseck, G.(2009). To use or not to use web 2.0 in higher education?. *Procedia Social and Behavioral Sciences*, 1, 478–482.

Gui, M. & Argentin, G. (2011). Digital skills of internet natives: Different forms of digital literacy in a random sample of northern Italian high school students. *New Media & Society*, 13(6), 963–980.

Guo, R. X., Dobson, T. & Petrina, S. (2008). Digital natives, digital immigrants: an analysis of age and ict competency in teacher education. *Journal of educational computing research*, 38(3), 235-254

Hakkarainen, K., Ilomäki, L., Lipponen, L., Muukkonen, H., Rahikainen, M., Tuominen, T., Lakkala, M., Lehtinen, E. (2000). Students' skills and practices of using ICT: results of a national assessment in Finland. *Computers & Education*, 34, 103-117.

Jones, C., Ramanau, R., Cross, S. & Healing, G. (2010). Net generation or Digital Natives: Is there a distinct new generation entering university?. *Computers & Education*, 54, 722–732.

Kawashima, N. (2010). The rise of 'user creativity' – Web 2.0 and a new challenge for copyright law and cultural policy. *International Journal of Cultural Policy*, 16(3), 337–353, DOI: 10.1080/10286630903111613

Kayri, M. & Çakır, Ö. (2010). An Applied Study On Educational Use Of Facebook As A Web 2.0 Tool: The Sample Lesson Of Computer Networks And Communication. *International Journal Of Computer Science & Information Technology*, 2(4), 48 – 58, DOI : 10.5121/ijcsit.2010.2405.

Kennedy, G., Dalgarno, B., Gray, K., Judd, T., Waycott, J., Bennett, S., Maton, K., Krause, K., Bishop, A., Chang, R. & Churchward, A. (2007). The net generation are not big users of Web 2.0 technologies: Preliminary findings. *ASCILITE Conferences 2007 Proceeding Book*, 517 – 525.

Koçak Usluel, Y. & Mazman, S. G. (2009). Adoption of Web 2.0 tools in distance education. *Procedia Social and Behavioral Sciences*, 1, 818–823.

Kolikant, Y. B. (2010). Digital natives, better learners? Students' beliefs about how the Internet influenced their ability to learn. *Computers in Human Behavior,* 26, 1384–1391.

Lei, J. (2009). Digital Natives As Preservice Teachers: What Technology Preparation Is Needed?. *Journal of Computing in Teacher Education*, 25(3), 87 – 97.

Li, Y. & Ranieri, M. (2010). Are 'digital natives' really digitally competent?-A study on Chinese teenagers. *British Journal of Educational Technology*, 41(6), 1029-1042.

Liu, X., Liu, H., Bao, Z., Ju, B. & Wang, Z. (2010). A web-based self-testing system with some features of Web 2.0: Design and primary implementation. *Computers & Education*, 55, 265–275.

Margaryan, A., Littlejohn, A. & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education*, 56, 429–440.

Mason, R. & Rennie, F. (2007). Using Web 2.0 for learning in the community. *Internet and Higher Education*, 10, 196–203.

Prensky, M. (2001a). Digital Natives, Digital Immigrants Part 1. *On the Horizon*, 9(5), 1–6.

Prensky, M. (2001b). Digital Natives, Digital Immigrants Part 2: Do They Really Think Differently?. *On the Horizon*, 9(6), 1 – 6.

Ras, E. & Rech, J. (2009).Using Wikis to support the Net Generation in improving knowledge acquisition in capstone projects. *The Journal of Systems and Software*, 82, 553–562

Sastry, H. G. & Reddy, L. C. (2010). Significance of Web 2.0 in Digital Libraries. *International Journal on Computer Science and Engineering*, 2(6), 2209-2212.

Székely, L. & Nagy, Á. (2011). Online youth work and eYouth — A guide to the world of the digital natives. *Children and Youth Services Review*, 33, 2186–2197.

Valtonen, T., Dillon, P., Hacklin, S. & Vaisanen. P. (2010). Net generation at social software: Challenging assumptions, clarifying relationships and raising implications for learning. *International Journal of Educational Research*, 49, 210–219.

Ward, R., Moule, P. & Lockyer, L. (2009). Adoption of Web 2.0 Technologies in Education for Health Professionals in the UK: Where are we and why?. *Electronic Journal of e-Learning*, 7(2), 165 – 172.

Weber, D. M. & Kauffman, R. J. (2011). What drives global ICT adoption? Analysis and research directions. *Electronic Commercial Research Application*, In Press doi:10.1016/j.elerap.2011.01.001.

Zhou, Q., Zhao, Y., Hu, J., Liu, Y. & Xing, L. (2010). Pre-service chemistry teachers' attitude toward ICT in Xi'an. *Procedia Social and Behavioral Sciences*, 9, 1407–1414.

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