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STUDENTS' INTERNET AND WEB 2.0 USE: A CASE OF BURDUR'S MIDDLE SCHOOLS

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ABSTRACT: This study focused on students' use of Internet and web 2.0 technologies for general and educational uses in terms of gender, technologies ownership, Internet connection, Internet and computer skills levels and years of use. 350 middle school students and two IT teachers were participated to the study. Descriptive data collected through a survey that designed by the researchers and based on these results, semi-structured interviews were conducted with their teachers. The results indicated that students with high confidence on computer and Internet use preferred to use social networking, video sharing and game sites than blogs, wikis e-mail services and cloud technologies like google drive for their general Internet and computer use. They use these technologies for homework and practice the previous content than communicating with their peers and teachers and also for educational games and educational videos. The findings obtained through teachers supports the data gathered from the students.

Key words: Computer and Internet usage, web 2.0 technologies, middle school

INTRODUCTION

Technological developments providing countless opportunities for communication have allowed people to present their ideas and exchange information from different location and time zone. Both the Internet and web 2.0 technologies presents many different features for the users. Today people not only reach information from different sources but also create and share their own works, contribute others works via using blogs, forum, wikis. The growing interest on online social networks created a different platform for people to collaborate and communicate. Web 2.0 technologies provides users interactive services (Ajjan, & Hartshorne, 2008) giving user the opportunity to interact with content and other users. Wikis, blogs, instant messaging and social networking sites are widely used Web2.0 technologies to achieve those utilities. These technologies changes the way of creating using sharing and also distributing any types of documents. Users creates Wikis (What I know Is) by interacting content via adding, removing, or editing. The mostly used *Wikis* is the Wikipedia with rich sources of information in different languages. *Blogs* can be defined as the personal journals with content, and images about different content and topic open to access and interaction with the followers. Users can create their own profile and connect with other users with Social *networking* sites. Facebook, Twitter, and Instagram are the mostly known social networking sites. These sites provide users to post different kinds of documents, make organizations follow their friend.

This attractive feature of information and communication technologies (ICT) draws people attention from different ages and work areas. Education is one of these areas; and nations focus on developing literate youths in the 21 century skills. For the requirements of the information age, creativity, critical thinking, communication and collaboration, information, media and ICT literacy hold an important place (Kay, 2009). These skills are needed in order to build deep and interdisciplinary understanding of knowledge and problem related to the real world. Developing such qualifications in the early years of education where teachers and students use technology in their learning and teaching processes is so important to rise new generation to cope with the different

requirements highlighted with the information age period. The researchers discussed that the use of ICT might provide practical solutions for educational needs (Pierce, 2009). In addition, the research results reveal that the positive effects of ICT related activities while developing 21 century skills including critical thinking, problem solving (Özdemir & Kılıç, 2007) higher order thinking skills (Çavaş & Çavaş, 2005; McMahon, 2009), and information searching skills (Çalışkan & Turan, 2008; Ersoy & Türkkan, 2009; Yılmaz & Aydın, 2013).

Since the use of ICT's including computers, laptops, smart phones and Internet rate is gradually growing, it was aimed to understand the views of the students and teachers regarding the Internet and Web 2.0 technologies in their daily usage and in educational platforms. This study may contribute to the literature for not only understanding the views of the students and IT teachers but also the potential of the web 2.0 technologies for informal learning opportunities.

METHODS

In this study a mixed approach was used to explore the views of the middle school students and teachers about the use of Internet and Web 2.0 technologies for general and educational purposes. Quantitative data were collected to have an understanding about the students' views and for having in depth understanding related with teachers views' qualitative data were collected (Creswell, 2011). Descriptive statistics for quantitative data and content analysis for qualitative data were selected as analysis methods for the study. The sample of the study was selected from the middle schools in Burdur province, where information technologies and software courses are given. The participants were 350 middle school students and two IT teachers from the two middle schools. All students were enrolled to Information Technologies and software course before the data collection process. While selecting the sample, two middle schools selected out of 5 as the samples of the study by using cluster sampling method. Moreover, two Information Technologies and software course teacher from the same schools were participated to the study to have deeper information about their views on Web 2.0 technologies and usage at school.

Instruments and Data analysis

The questionnaire which was developed by the researchers consisting of 27 questions and four subsections related with the views of the participants. In the first subsection, questions related with the demographics of the students, their parents' education levels, and their access to a technological device and the Internet and their use of experience with computer and Internet were asked. Other subsections were respectively; computer and Internet usage skills; Internet usage frequency, frequency of using the ICT for educational purposes. In the questionnaire, there were nineteen five scale Likert type questions from "*never*" to "*always*". In order to have in depth understanding and detailed information regarding the views of the teacher, six semi-structured interview questions were asked to the IT teachers. The descriptive data were analyzed by using SPSS 20 and qualitative data were analyzed by using content analysis technique.

RESULTS and FINDINGS

Descriptive Statistics

The demographics of the students are depicted in Table 1. As seen from the Table 1, the participants in this study were 43.7% male and 56.3% female. The grade levels of the participants were 43.1% of them 5th grade, while 56.9% of the participants were 6th grade levels. Participants' access to the technological devices were explored and the results showed that most of the participants (%95.7) have access to the computer while 42.3% of the participants also have smart phones and 39.4% of them have a chance to use tablets at their home. Moreover, it was found that majority of the students (89.7%) have Internet access at their computers, while 34.4% of them have Internet access at their smart phones and 31.1% of them have at their tablets. Most of the participants (66.6%) declared that they were using computer more than 4 years while half of the participants (50%) expressed that they have been using Internet more than 4 years. Table 1 presents the characteristics of the students and computer and Internet experience of the students in terms of the time periods.

Table 1. Characteristic of the Students

		N	%
Gender			
	Female	197	56.3
	Male	153	43.7
Grade level			
	5th	151	43.1
	6th	199	56.9
Preschool education			
	Yes	308	88.0
	No	32	9.1
Accessing a technological device at home			
	Computer	335	95.7
	Tablet	138	39.4
	Smart phone	148	42.3
Connecting Internet via			
	Computer	314	89.7
	Tablet	109	31.1
	Smart phone	121	34.6
Years of Computer Use			
	0-1 year	10	2.9
	1-2 years	11	3.1
	2-3 years	25	7.1
	3-4 years	69	19.7
	More than 4 years	233	66.6
Years of Internet Use			
	0-1 year	23	6.6
	1-2 years	22	6.3
	2-3 years	47	13.4
	3-4 years	74	21.1
	More than 4 years	175	50.0

Additionally, the educational level of the participants' parents was also explored. The results showed that 30. 3% of the mothers were graduated from high schools, while 23.1% of them were graduated from university and 21.1% of them graduated from middle school. As for fathers, however, 37.2% of them were graduated from university and 31.5% of them were graduated from high schools. Table 2 presents the educational level of the participants' parents.

Table 2. Parent Education Level

Parent education level	Mother		Father	
	N	%	N	%
Illiterate	4	1.1	5	1.4
Literate	11	3.1	9	6.6
Primary school	50	14.3	23	6.6
Middle school	74	21.1	34	9.7
High school	106	30.3	110	31.5
University	81	23.1	130	37.2
Master	23	6.6	38	10.9

Moreover, participants' computer and Internet usage skills were examined in the study. The results showed that most of the participants (41.4%) expressed their computer usage skills as "*I know well*" while 37.1% of them responded this question as "*I know very well*". On the other hand, a reverse situation was occurred for Internet usage skills. Majority of the participants (47.1%) declared themselves for Internet usage skill as *"I know very well*" while 33.7 % of them responded this question as "*I know well*". These students' responds clarified by one of their teachers with the following quotation: "…*They [students] have a chance to use PCs at their home anymore. Moreover, they have also smartphones and tablets. That is why the utilization of the Internet is*

widespread – affecting up the computer and the Internet usage..." Table 3 represents the computer and Internet usage skills of the students.

Table 3. Computer and Internet usage skills

	I don't know		I know a little		I know		I know well		I know very well	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Computer	3	0.9	23	6.6	48	13.7	145	41.4	130	37.1
Internet	2	0.6	18	5.1	43	12.3	118	33.7	165	47.1

Participants were also asked about their frequency of their Internet usage for different applications. The results showed that participants expressed that they "*always*" use social media like "Facebook" and "Twitter" (54.6%) and "YouTube" (53.4%). On the other hand, according to their responses they "*never*" use wikis (60.9%) and blogs (58%) in their daily Internet activities. For this issue, one of the teachers highlighted the fact that students do not have knowledge about these tools because they will learn how to use wikis and blogs later. In table 4 the results obtained from the survey were presented related with the Internet usage frequency of the participants.

Table 4. Internet Usage Frequency

	Never		Rarely		Occasionally		Usually		Always		
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*M*
News portal	99	28.3	98	28.0	93	26.6	39	11.1	17	4.9	2.36
Game sites	8	2.3	30	8.6	96	27.4	112	32.0	103	29.4	3.78
Chat / friendship sites	53	15.1	43	12.3	64	18.3	88	25.1	102	29.1	3.41
E-mailing services	78	22.3	87	24.9	74	21.1	57	16.3	51	14.6	2.76
Wikis	213	60.9	51	14.6	25	7.1	23	6.6	32	9.1	1.98
Blogs	203	58.0	65	18.6	28	8.0	25	7.1	26	7.4	1.86
Google drive	79	22.6	57	16.3	65	18.6	64	18.3	80	22.9	3.03
Social media (Facebook/ Twitter)	34	9.7	20	5.7	43	12.3	61	17.4	191	54.6	4.02
YouTube	15	4.3	19	5.4	49	14.0	78	22.3	187	53.4	4.33

When participants' frequency of Internet and communication technologies use for educational purposes were examined, most of the participants expressed that they "*always*" use ICT for finding sources for finding sources to prepare homework (46.3%), doing their homework (46%) and drill & practice applications and solving problems (37.1%). They also declared that they "*always*" use ICT for preparing presentations (38.3%) and communicating with their friends for doing homework (23.7%). The following quotation from an interview with a teacher clarified this: "*...All teachers want students to prepare their homework via using computers. Students might communicate their friends to cope with these assignments...*" Table 5 represents participants' frequency of Internet and communication technologies use for educational purposes.

Table 5. Frequency Of Internet And Communication Technologies Use For Educational Purposes

	Never		Rarely		Occasionally		Usually		Always		
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*M*
Finding sources for preparing homework (visual, audio, written sources)	3	0.9	12	3.4	44	12.6	129	36.9	162	46.3	4.24
Communicating with friends for preparing homework	26	7.4	50	14.3	110	31.4	81	23.1	83	23.7	3.41
Communicating with teachers for preparing homework	93	26.6	90	25.7	74	21.1	48	13.7	41	11.7	2.57
Doing homework	1	0.3	7	2.0	48	13.7	129	36.9	161	46.0	4.27
Prepare presentation	10	2.9	26	7.4	82	23.4	97	27.7	134	38.3	3.91
Watching educational videos	39	11.1	96	27.4	72	20.6	69	19.7	74	21.1	3.12
Reading e-book	115	32.9	52	14.9	70	20.0	50	14.3	60	17.1	2.68
Playing educational games	56	16.0	68	19.4	89	25.4	65	18.6	70	20.0	3.07
Making experiments	66	18.9	90	25.7	81	23.1	61	17.4	51	14.6	2.83
Drill and practice/ solving questions	15	4.3	39	11.1	63	18.0	103	29.4	130	37.1	3.84

CONCLUSION

This study explored the views of the middle school students and teachers about the use of Internet and Web 2.0 technologies for general and educational purposes. The results showed that participants mostly preferred to use social media and YouTube instead of the other Internet sources. This finding supports the general idea that user-generated content is successful only if users are regularly attracted to the website to contribute (Rennie, & Mason, 2007). Students also expressed that they "*never*" use wikis (60.9%) and blogs (58%) in their daily Internet activities. The Global Information Technology Report (2014) investigated the uses of virtual social networks (e.g., Facebook, Twitter, LinkedIn) among countries (Osorio, Dutta, & Lanvin, 2014). According to the report, Turkey was ranked as 61st and accepted as social networks have been widely used country in the list (p.298). Moreover, Şener (2009) explored the profile of Facebook users in Turkey. She found that the usage of Facebook varied according to the gender, socio economic situation and age. The user group in Turkey consider Facebook as an environment which provides chance to communicate with their friends. According to Ellison, Steinfield and Lampe (2007), college students in the U.S. used Facebook for social interaction offline to communicate with their existing friends and strengthen their relationships with them. In addition, the reasons for not preferring to use wikis and blogs might be related with the one way interaction nature of them. In addition, this intensive interest to the Facebook and Youtube and contrary interest to wikis and blogs might be related with the cultural background of Turkey. As Şener (2009) indicated Turkish people using Facebook mostly for communicating possibilities. Moreover, the flexibility of Facebook regarding the communication possibilities might also be another reason for their high demands.

Moreover, participants' responses to the questions regarding frequency of using ICT technologies for educational purposes showed that they tended to use ICT technologies respectively, for finding sources for preparing homework, doing their homework and drill and practice applications or solving problems. The results showed that they use ICT for preparing presentations and communicate with the other friends while doing their homework. Yılmaz and Aydın (2013) in their qualitative study presented the middle school students positive predisposition towards technology due to its benefit to their course works, personal growth, information search and spending time for fun.

When the education levels of the parents were examined, there might be a relation between the education level and their socio-economic levels. The more educated and high income families have chance to provide more technological devices to their children. This might also affect the view of the children directly, the more they acquainted with the technology the more their views will be positive. This situation should also be investigated through the further studies to explore exact correlation between these variables. The results also point out that the students' computer and the Internet competencies differ slightly. The difference between the self-evaluation of the participants regarding their computer and the Internet skills might be related with the Internet usage by using smart phones. The demographics also showed that a non-negligible part of the students have Internet access in their smart phones. Therefore, we need new research studies on understanding how this discrepancy might be handled with regard to educational utilization of the computer and the Internet.

REFERENCES

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

Creswell, J.W. (2011). Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research. Sage Publications. 4th edition.

Çalışkan, H., & Turan, R.(2008). Araştırmaya dayalı öğrenme yaklaşımının sosyal bilgiler dersinde akademik başarıya ve kalıcılık düzeyine etkisi. *Türk Eğitim Bilimleri Dergisi*, 6(4), 603-627.

Çavaş, B., & Çavaş, P, H. (2005) Teknoloji tabanlı öğrenme: robotics club". Akademik Bilişim , 2-4 Şubat, 2005. (http://ab.org.tr/ab05/tammetin/59.pdf)

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits if facebook" friends": Social capital and college students' use of online social network sites. *Journal of Computer Mediated Communication*. 12(1143-1168)

Ersoy, A., &Türkkan, B. (2009). Ilköğretim öğrencilerinin resimlerinde Internet algısı. *İlköğretim Online*, 8(1), 57-73.

Kay, K. (2009, September). P21 framework definitions. *Partnership for 21st Century Skills*: Retrieved from (http://www.p21.org/storage/documents/P21_Framework_Definitions.pdf) on 18th April 2014.

McMahon, G. (2009). Critical Thinking and ICT Integration in a Western Australian Secondary School. *Educational Technology & Society*, 12 (4), 269–281.

Osorio, B.B., Dutta, S, & Lanvin, B. (2014). The Global Information Technology Report: Rewards and Risks of Big Data. Retrieved from (http://www3.weforum.org/docs/WEF_GlobalInformationTechnology_Report_2014.pdf)

Özdemir, S. & , Kılıç, E. (2007). Integrating information and communication technologies in the Turkish primary school system. *British Journal of Educational Technology*, 38 (907-916).

Pierce, T. (2009). Social anxiety and technology: Face-to-face communication versus technological communication among teens. Computers in Human Behavior, 25(1367-1372).

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

Şener, G. (2009). Türkiye'de facebook kullanımı araştırması. Inet-TR-XIV. Türkiye'de İnternet Konferansı Bildirileri. Retrieved from (http://inet-tr.org.tr/inetconf14/kitap/sener_inet09.pdf)

Yılmaz, Ş., & Aydın, F. (2013). Investigation of middle-school students' attitudes toward technology and factors affecting the attitudes. *Asian Journal of Instruction*, *1*(2), 1-17.