

Geography Teachers' Usage of The Internet For Education Purposes

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Abstract

The purpose of this study is to determine geography teachers' use of the Internet for education purposes and the extent to which Turkish Internet sites can fulfill the needs and requirements of geography teachers' Internet usage. Research is carried out using the screening method. Data were collected by means of a measurement tool that was developed by the researcher (questionnaire form) over the Internet. The study group consists of 174 teachers, who filled out and submitted the questionnaire on a volunteer basis, and all participants were members of an Internet forum, "Geography Teachers of Turkey" (Turkiye Cografya Öğretmenleri), that was created for the purpose of information sharing among geography teachers. Frequency, percentage correlation, and arithmetic mean were used, as appropriate, for the purpose of analyzing the data. Study results indicate that geography teachers use the Internet most frequently for the purpose of geography education in order to acquire documents that can be used in teaching geography. The study further indicates that geography teachers least frequently for purpose of classroom applications with direct Internet use and for assessing students' studies.

Keywords: Geography, Geography teachers, Teaching geography, Internet

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Introduction

Defined as a web or network that interconnects hundreds of thousands of computers around the world – thereby ensuring information exchange among them (Yüzer, 2006) – the Internet is technology that emerged from the people's needs of storing, sharing and easily accessing the information. Beyond this, the scope of information expands exponentially each day. Thanks to this technology, people are able to access information in many fields easily, cheaply, rapidly and safely. Today, many people looking for practical answers to geographic, social, economic, political, and environmental questions and information has made computer-aided information use, namely Internet use, an important part of our daily lives (Bevainis, 2008).

The rate of Internet usage is increasing globally and daily. According to 2008 end-of-year data, 21.1% of the world's population uses the Internet. While English is the most frequently used language on the Internet, with a 29.4% share, Chinese is second with 18.9%, and Spanish is third with 8.5%. Turkish does not rank in the top ten. With 26,500,000 users, Turkey ranks 6th in Europe's in terms of Internet users and 36.9% of Turkey's population actively uses the Internet (Internet World Stats, 2008).

As per the results of the study that was carried out by Tuik in April 2008, 35.8% of household members with age between 16-74 in Turkey use the Internet. 55.2% of Internet users use the Internet at home, 38.4% use Internet at work while 24.2% use Internet at Internet cafes. In terms of education level, highest Internet usage rate is that of collage, university graduates and graduates of higher education, with 87.2%. Among household members who used the Internet in January - March 2008, 76% used the Internet for reading newspapers and magazines, 74% used the Internet for sending and receiving e-mails, 69.7% used the Internet for instant messaging, and 65.2% used the Internet for downloading or listening to music.

In studies that were carried out for the purpose of determining the Internet behavior or Internet usage patterns of students of various academic levels and those of teachers of various disciplines, research and learning on the Internet has been among the most frequent behaviors and patterns (Oral, 2004; Atıcı & Dikici, 2003; Orhan & Akkoyunlu, 2004; Açıklın & Duru, 2005; Rüzgar, 2005; Balcı & Ayhan, 2007; Toprakçı, 2007; Tokcan, 2009). Teachers' use of the Internet for the purposes of learning and teaching process is also on increase constantly since 2002 (Erdem, 2008). Nonetheless, there are also findings to the effect that teachers have been incompetent in terms of integrating Information Technologies into their learning and teaching processes (Demiraslan & Usluel, 2005).

In Turkey, the Ministry of National Education makes considerable investments to ensure that teachers are able to make more efficient use of information technologies. While 2802 ICT classes were conducted in 1999 and 3000 in 2005, campaigns were organized to ensure that teachers are able to buy computers, as well (Gülbahar, 2008).

The Internet provides a mechanism for communicating with millions on the computer and many services – such electronic mail, forums, usenet news groups, online chat, audio-video conferencing, file transfer protocol (FTP), telnet, and

websites (World Wide Web) – are offered over the Internet (Kalbag, 2000). Among all services provided over the Internet, websites are the most popular part of the Internet. Websites provide information in any field in interesting ways via the use of words, pictures, illustrations, voices, and images. In addition, information is offered to an unlimited number of users over the Internet at fairly low costs in virtual platforms, making the web an unrivalled form of entertainment and consumption (Lateh & Raman, 2005).

Internet sites constitute the largest library of the world (Becker, 1998), and compared to conventional libraries, they have advantages such as the ability to provide up-to-date information at all times, serving multiple students simultaneously, and the ability of providing several references for any subject (Pitman, Gosper & Rich, 1999)

There has been growth in Internet use in the last ten years, as well as in its potential as a platform for purposes of learning and teaching (Chalmers & Keown, 2009; Açıklan & Duru, 2005). Internet-based communication technologies such as www, video conferencing and e-mail allow cooperation and collaboration among the teachers and students who are geographically apart and far away from one another. At the same time, the complementing role of Internet-based learning environments to structural learning and teaching strategies should not be underestimated (Hurley, Proctor & Ford, 1999). On the other hand, many new opinions are pointed out and the Internet's and computers' place in future education systems is discussed in order to further qualify this service (Tuncer, 2007).

Internet use in schools helps teachers and students to mutually share information, to discuss the opinions of other users, and to communicate with people from different locales in common interest areas. At the same time, with Internet use, students acquire the skills needed for searching and researching themselves, or without guided instruction. Given that appropriate techniques were applied, acquired skills can be later transformed into behavior of using information more efficiently (Akbaba, Altun & Altun 2000).

One of the important contributions of the Internet to the learning and teaching process is the Internet's lending itself well to implementation of student-centered approaches, because students are able to access many references they need to resolve the problems they were assigned by themselves comfortably on the Internet (Motschnig-Pitrik, 2001).

Understandably, the importance of Internet use for purpose of geography teaching in elementary and secondary education is growing (Houtsonen, Kankaanrinta & Rehunen, 2004). The Internet has become an important reference for convenient access to rapidly changing information, planning learning and teaching activities, and the use of new information and documents for the purposes of these activities. With the atmosphere that it provides for presenting and spreading geographical data, the Internet has rapidly become an important component of geography learning and teaching processes in secondary education (Lateh & Raman, 2005).

Geography education requires constantly up-to-date data, and information, documents, and photographs pertaining to geographical forms and processes around

the world. In this sense, the Internet makes considerable contribution to geography teachers for access to climate and meteorological images and geographical data, and carrying our research (Bishop, Hubbard, Ward, Binkley & Moore, 1993).

One of the components of the elementary school and secondary school education program that was reformed and implemented in Turkey in 2005 was declared to be more efficient and productive use of the information technologies. It is pointed out that the program's purpose was not to ensure mere use of information technologies but to use information technologies efficiently and productively for achieving a greater purpose (Ministry of National Education, 2005).

Likewise, when reviewed, the geography class education program includes recommendations to the effect that in-classroom and out-of-classroom activities should include Internet research in order to secure achievements that would be determined as appropriate for each class level, and use of many data or documents from the Internet (such as population, climate, agriculture, and industrial data, satellite pictures). Nonetheless, it is not safe to say that geography teachers are able to use the Internet efficiently for purposes of learning and teaching geography in schools (Artvinli, 2007; 97).

In this study, the purpose is to determine geography teachers' use of the Internet for education purposes and the extent to which Turkish Internet sites can fulfill the needs and requirements of geography teachers' Internet usage. In this context, answers to following questions were sought:

1. What the locations and languages do geography teachers participating in the study use to access the Internet?
2. What Internet sites do they use for purposes of geography education?
3. What is the frequency of their using the Internet for geography education purposes?
4. To what extent do Turkish Internet sites fulfill teaching and research needs of geography teachers participating in the study?

Method

A figurative method based on the screening model that aims to represent the current conditions accurately has been used in this study, which aims to determine geography teachers' use of the Internet for geography education purposes.

Research Participants

The research participants consist of 174 teachers, who participated in this study and filled out and submitted the questionnaire on a volunteer basis. All participants were members of the Internet forum ,“Geography Teachers Union of Turkey” (Türkiye Coğrafya Öğretmenleri Birliği), which was created for the purpose of sharing information among geography teachers. Information pertaining to the personal and vocational details of the study group is given in Table 1.

Table 1. *Personal and Vocational Information of Teachers Constituting Study Group*

		f	%
Gender	Women	53	30.
	Men	121	69.
Education Level	Graduate	112	64.
	Post Graduate (with Dissertation)	37	21.
	Post Graduate (without)	25	14.
Experience	0-5	24	13.
	6-10	48	27.
	11-15	45	25.
	16-20	29	16.
	21+	28	16.
School Served	Common High school	60	34.
	Anatolian High school	46	26.
	Anatolian Teachers' High school	11	6.3
	Science/Social Science High school	13	7.4
	Vocational/Anatolian Voc. High	26	14.
	Multi-Curriculum High school	18	10.
	Total	174	100

69.5% of the study group consists of men, with 30.5% women. In review of education level correlation, graduates is the largest group (64.4%), post graduates without dissertation is the second largest (21.2%) and post graduates with dissertation is third largest (14.4%). In terms of experience correlation, the largest group has 6 to 10 years experience (27.6%). The second largest group has 11 to 15 year experience (25.9%). The third group is those with 16 to 20 years experience (16.7%), while those with 21+ years experience is the fourth (16.1%). Those who have 0 to 5 years experience are in the last group (13.8%). In review of correlation of schools served by geography teachers, those who serve in common high schools are in the largest group (34.5%). The rest serve in (in decreasing order): Anatolian high schools (26.4%); vocational / Anatolian vocational high schools (14.9%); multi-curriculum high schools (10.3%); Anatolian Teachers' High Schools (6.3%); Science High Schools (6.3%); and finally, in Social Science High Schools (1.1%).

Data Collection

Data have been collected over the Internet by means of the questionnaire that was developed by the researcher. The questionnaire consists of three sections. The 1st section consists of questions aiming to determine personal and vocational information of the teachers participating in the study, their locations of Internet access and language. The 2nd section aims to determine Internet sites used by geography teachers for the purpose of geography education. In this section, Internet sites are listed and grouped in eight groups.

The 3rd Section aims to measure geography teachers' patterns and frequency of using the Internet for geography education purposes and the extent to which Turkish Internet sites can fulfill their needs and requirements. In this section, there are 11 items on a 5-level Likert scale that describe geography teachers' Internet usage for purpose of geography education. For creating the questionnaire, 25 geography teachers in the study group were asked about their purpose for using the Internet for geography education. The questionnaire was finalized upon receipt of expert opinion.

Cronbach Alpha reliability coefficient of the the questionnaire was calculated to be Alpha=0.88. The 11 items included in the questionnaire are as follows:

- I-1. Acquiring documents (planning, PowerPoint presentations/animations, activities, measuring and assessment tools, etc.) that can be used in geography teaching
- I-2. Sharing documents (planning, PowerPoint presentations/animations, activities, measuring and assessment tools, etc.) that I prepared with my colleagues
- I-3. Accessing scientific information that can be used in geography teaching
- I-4. Accessing scientific information on teaching strategies, methods, and techniques that can be used in geography teaching
- I-5. Accessing up-to-date information (economic, cultural, political, etc. developments) that can be used in geography teaching
- I-6. Accessing figures and numeric data that is updated periodically (population, agriculture, industry, climate, etc.)
- I-7. Making in-classroom activities by direct use of the Internet
- I-8. Guiding students for out-of-classroom activities and ensuring that they acquire information from different primary information sources
- I-9. Assessing students' studies
- I-10. Becoming acquainted with legal arrangements that concern my vocation
- I-11. Opinion exchange with my colleagues

Analysis of the Data:

Data collected in the study were analyzed using the SPSS 13 statistics program. For analyzing the data, frequency, percentage correlation and standard deviation were examined as appropriate for the purpose of the study.

In comparison of the arithmetic mean of questionnaire:

Interval width = (Series Width) / (Number of Groups to be made) formula was used and point intervals were calculated as $4/5 = 0.80$ (Tekin,1996). Accordingly, scale intervals were determined as follows: never (1.00-1.79), rarely (1.80-2.59), sometimes (2.60-3.39), often (3.40-4.19) and always (4.20-5.00).

Findings

Findings for the First Question

Findings on location and language used by geography teachers to access the information on the Internet are given in Table 2, below.

Table 2. *Location and Language used by geography teachers participating in the study to access the Internet*

		f	%			f	%
Point of Access	Home Only	20	11.5	Access Language	Turkish	119	68.4
	School Only	8	4.6		Turkish and other languages	55	31.6
	School and Home	146	83.9		Total	174	100
	Total	174	100				

83.9% of geography teachers participating in the study are able to access the Internet both at home and in the school. 11.5% can access the Internet only at their home while 4.6% of geography teachers are able to access the Internet at school only. 68.4% of geography teachers participating in the study stated that they were able to access Turkish language Internet sites only, while the remaining 31.6% have mentioned that they are able to access both Turkish and other language Internet sites.

Findings for the Second Question

Findings on the Internet sites used by geography teachers for geography teaching are given in Table 3 below.

Table 3. *Turkish language Internet sites used by geography teachers participating in study for geography teaching*

Internet sites	Do you use these?			
	Yes		No	
	f	%	f	%
Ministry/Directorate of National Education website	152	87.4	22	12.6
Governor's Office website	82	47.1	91	52.9
Websites of other government institutions	158	90.8	16	9.2
Municipality websites	97	55.7	76	43.7
Private companies' websites	147	84.5	27	15.5
Civil organizations' websites	104	59.8	70	40.2
Teachers' websites published by individuals/groups	171	98.3	3	1.7
Forum websites for sharing information	167	96	7	4

98.3% of teachers participating in the study use teachers' websites published by individuals/groups for purposes of geography education. Forum websites for sharing information are used by 96% of teachers participating in this study, while websites of other government institutions are used by 90.8%. These are followed by websites of the Ministry/Directorate of National Education (87.4%), private companies' websites (84.5%), and civil organizations' websites (59.8%), in respective order. Municipality websites (55.7%) and governor's office websites (47.1%) are least popular.

Findings for the Third Question

Findings on frequency of use of geography teachers participating in this study for purposes of geography teaching are given in Table 4 below.

Table 4. *Frequency of use the Internet by geography teachers participating in the study for purpose of geography education*

	Always		Often		Sometimes		Rarely		Never		Total		\bar{X}	Ss
	f	%	f	%	f	%	F	%	f	%	f	%		
I-1	104	59.8	53	30.5	14	8	1	.6	2	1.1	174	100	4.74	.76
I-2	45	25.9	42	24.1	47	27	30	17.2	10	5.7	174	100	3.47	1.21
I-3	90	51.7	51	29.3	25	14.4	8	4.6	-	-	174	100	4.28	.87
I-4	69	39.7	50	28.7	36	20.7	18	10.3	1	.6	174	100	3.96	1.03
I-5	84	48.3	70	40.2	14	8	5	2.9	1	.6	174	100	4.32	.79
I-6	75	43.1	55	31.6	30	17.2	12	6.9	2	1.1	174	100	4.08	.99
I-7	20	11.5	13	7.5	47	27.0	55	31.6	39	22.4	174	100	2.54	1.24
I-8	35	20.1	58	33.3	53	30.5	22	12.6	6	3.4	174	100	3.54	1.05
I-9	10	5.7	18	10.3	53	30.5	52	29.9	41	23.6	174	100	2.44	1.13
I-10	66	37.9	49	28.2	31	17.8	22	12.6	6	3.4	174	100	3.84	1.16
I-11	80	46	65	37.4	17	9.8	11	6.3	1	.6	174	100	4.21	.90

It is seen that frequency of Internet use of geography teachers participating in this study can be discussed in three groups (always, often, rarely). Respectively acquiring documents that can be used in geography teaching, accessing up-to-date information, accessing scientific information in the field of geography, and opinion exchange with colleagues are included at the “always” interval while in the “often” interval, there are accessing figures and numeric data that are updated periodically, accessing scientific information on teaching strategies, methods and techniques, becoming acquainted with legal arrangements that concern my vocation, ensuring that students acquire information from primary sources of information, and sharing documents that I prepare. On the other hand, frequency of participating geography teachers’ use of Internet for in-classroom applications by means of direct Internet use and assessing students’ studies are observed to be “rare”.

Findings for the Fourth Question

Findings on the extent to which Turkish Internet sites are able to fulfill the needs and requirements of geography teachers for purpose of teaching geography are given in Table 5, below.

Table 5: *Extent to which Turkish Internet sites are able to fulfill the needs and requirements of geography teachers for the purpose of teaching geography*

	Highly Sufficient		Sufficient		Somewhat Sufficient		Insufficient		Highly Insufficient		Total		\bar{X}	Ss
	f	%	f	%	f	%	f	%	f	%	f	%		
I-1	49	28.2	69	39.7	50	28.7	5	2.9	1	.6	174	100	3.91	.85
I-2	37	21.3	80	46	41	23.6	13	7.5	3	1.7	174	100	3.77	.92
I-3	20	11.5	51	29.3	86	49.4	16	9.2	1	.6	174	100	3.41	.83
I-4	31	17.8	53	30.5	67	38.5	20	11.5	3	1.7	174	100	3.51	.97
I-5	42	24.1	41	23.6	72	41.4	17	9.8	2	1.1	174	100	3.59	.99
I-6	40	23	60	34.5	55	31.6	18	10.3	1	.6	174	100	3.68	.95
I-7	8	4.6	11	6.3	59	33.9	68	39.1	28	16.1	174	100	2.44	.98
I-8	18	10.3	35	20.1	70	40.2	35	20.1	16	9.2	174	100	3.02	1.09
I-9	8	4.6	22	12.6	49	28.2	53	30.5	42	24.1	174	100	2.43	1.12
I-10	44	25.3	78	44.8	37	21.3	12	6.9	3	1.7	174	100	3.85	.93
I-11	66	37.9	74	42.5	28	16.1	4	2.3	2	1.1	174	100	4.13	.84

Geography teachers who participated in this study find Turkish language Internet sites somewhat sufficient for purpose of geography teaching when the Internet is used for ensuring that students make use of primary sources of information. They find Turkish

language Internet sites insufficient for use in terms of in-classroom applications involving direct use of the Internet and of accessing students' studies. They find Turkish language websites sufficient in the remaining eight categories.

Conclusion and Discussion

The following conclusions can be drawn from the findings of this study, which aims to reveal geography teachers' use of the Internet for purposes of geography education and teaching. 83.9% of geography teachers participating in the study have access to the Internet, both at home and in the school. The remaining 16.1% lacking Internet access either at home or in the school can be interpreted as a restricting situation in terms of education and learning. Because a low percentage of ability in geography teachers' access to the Internet while using languages other than Turkish would considerably limit access to geography education and teaching of other countries, Turkish language Internet sites are of great importance in this context.

Most popular Internet sites used by geography teachers participating in this study are websites published by teachers (98.3%). It is noteworthy that governors' office and municipality websites are least popular among the teachers for use in geography teaching and education because these websites, owned or published by the highest local administrative units and authorities in regions, usually feature a separate section that introduces geographical specifications of settlement(s). Nonetheless, low popularity of these websites among geography teachers for purposes of geography teaching may be because the content of these websites are insufficient. Studies carried out in this regard point out that governors' office websites have many omissions and misleading geographic information (Arıbaş & İnel, 2008; Yürüdü, 2008; Sezer, 2009).

While acquiring document(s) that can be used for purposes of geography teaching is the leading purpose of use for geography teachers participating in this study, it is also noteworthy that sharing document(s) prepared by one ranks ninth in the list. This situation can be interpreted as teachers prefer to use documents created and shared by other teachers instead of creating their own documents, or as they don't have the tendency of sharing documents they created.

High popularity of Internet use for purpose of accessing up-to-date information can be interpreted as geography teachers are eager to make use of up-to-date information in geography teaching. Accessing scientific information ranks third in the list in terms of frequency of Internet use and this means geography teachers participating in the study are eager to follow scientific advances in their field over the Internet. Nevertheless, it is noteworthy that Internet use for purpose of encouraging students to make use of primary sources of information is not in "always" but in "often". In other words, while teachers use the Internet as a source of reference for accessing information in their field, themselves, they do not consider the Internet to be a primary source of information for their students. In fact, geography teachers find Turkish language Internet sites to be somewhat sufficient for purpose of access to primary sources of information by their students. On the other hand, they find Turkish language Internet sites to be sufficient for accessing primary sources of information.

In the constructivist approach, it is important that students have access to information from primary sources and later construct the learning experience themselves (Şimşek, 2004; Turoğlu, 2006). While the Internet is considered as an important source of information for access to primary sources, geography teachers find that Turkish language websites are insufficient; this is an important finding.

Another important finding is that geography teachers' Internet use for the purpose of sharing information and opinions with their colleagues ranks fourth in the list in terms of frequency of use. This can be interpreted as teachers serving in different locations in the country who are able to become acquainted with different practices and endeavor to create solutions for the problems they encounter in the vocation and during geography teaching from different perspectives.

Accessing statistical figures and numeric data that are updated at certain intervals and using such updated data in classes are especially important in the fields of social and economic geography. Today, accessing many data of this type over the Internet is possible. Accessing statistical figures and numeric data that are updated at certain intervals is fifth in frequency of geography teachers participating in this study is an important and positive finding in this sense. According to geography teachers, Turkish language Internet sites are sufficient to fulfill this purpose.

Teachers participating in this study also use the Internet for the purpose of accessing scientific information on teaching strategies, methods and techniques to be used in geography teaching. This can be interpreted as geography teachers may have preferred the most important communication tool of our age for purposes of learning new teaching approaches introduced by the reformed geography teaching program and following up with ever-changing information in the field of learning and teaching.

Most are aware that legal requirements are constantly amended, changed and updated in the field of teaching and education, as in many other disciplines. The Ministry of National Education publishes and announces laws and regulations that concern teaching as a vocation, education programs, teaching and learning processes, etc. at their website. It is essential that teachers effectively use the Internet in order to become acquainted with legal arrangements described in the foregoing. It is noteworthy that geography teachers participating in this study use the Internet for this purpose "often".

Frequency of Internet use for the purpose of in-classroom applications having found partially, which is almost rarely, can be interpreted as a negative situation. However, it must be noted that lack of Internet access in many schools within our country is another reason for such low prevalence. In a study carried out by Demirci (2008) on 14 students, 3 of the teachers said that they used the Internet in geography lessons once a month, 2 of teachers said that they used the Internet once a semester, while 9 teachers said that they never used the Internet. Geography teachers participating in the study find the Internet insufficient in terms of this purpose.

The purpose with the lowest Internet usage frequency among the teachers participating in this study is assessing students' studies. Likewise, geography teachers find Turkish language Internet sites insufficient for purpose of this type of use. However, one of the most important competences that needs to be provided to the

students, as per the education program of 2005, is effective use of information technologies. At the same time, teachers and students are expected to submit and receive their homework over the Internet and teachers are expected to provide guidance to students in homework preparation and delivery (Ministry of National Education, 2005). Geography teachers may use e-mail for the purpose of submitting performance and project works to the teachers and teachers' sending corrections and comments back to the students.

Findings in relation to in-classroom applications making direct use of the Internet and assessing students' studies can be interpreted as a deficiency among the geography teachers in use of the Internet for teaching-education process.

The following recommendations can be made in the light of conclusions above:

The Internet is vital technology in the teaching-learning process. For teachers to be able to make efficient use of this technology, it is essential that they are provided proper in-service training.

Although access to the Internet is not costly, there are still teachers who are unable to access to Internet either at their home or in the school. In order to eliminate this negative situation, the Ministry of National Education must take relevant measures.

Today, references on the Internet are of great importance. However, it is essential that these references are reliable. In terms of contribution to learning and the teaching process, government institutions must especially observe and ensure that all information in their websites is reliable.

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