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Social Studies Teacher Candidates' Use of Technology and Digital Citizenship Practices

Sule EGUZ
Inonu University

Abstract: Today, with the rapid spread of the internet, people have become more interested in digital media. For this reason, the concept of citizenship has taken its place in the technology environment and has started to gain different meanings. The aim of this study is to determine the level of technology use of social studies teacher candidates, their perception of digital citizenship elements focusing on online behavior, and their practices in this regard. The participants of the study consisted of 84 social studies teacher candidates at the level of four grades studying in Malatya Inonu University. The data of the research were applied to the participants who voluntarily participated online in December 2020 through the Google form created as closed and open-ended. The data of the study were applied to the participants who voluntarily participated online in December 2020 through the Google form created with closed and open-ended questions. In this context, first of all, the participants were asked to answer various demographic information such as gender, grade level. Then questions about technology usage habits; device usage, internet access, activities they do at home were evaluated. Then, after determining the perceptions of digital commerce, digital access, digital ethics, digital law, digital health, digital security, digital communication, digital literacy, digital rights and responsibility concepts, which are sub-dimensions of the concept of digital citizenship, the life practices of the participants on this subject were revealed.

Keywords: Digital citizenship, Technology, Social studies, Teacher candidates

Introduction

Technology, with its modern connotation, is more perceived as products containing high quality scientific knowledge and techniques. Although in the daily language, in the written and visual press, the technology is an area of all social and economic events and organizations that envisage technical knowledge of technology. When viewed with an optimistic identification, technology is implemented to solve the problems of scientific principles and innovations. In other words, technology is an application of science (Goetsch, 1984). In the developing information society, the task of teachers is not only to transfer the existing information, and to transfer the current and accurate information to the students by interpreting the innovations, development of continuously and the data they collected. In this direction, teachers should use technology effectively in education, as well as be individuals who constantly renew themselves by using technology in their own development processes. Therefore, the task of educational institutions that train teachers should be to train teacher candidates who can understand the importance of technology in life, its necessity in the educational process, and have the ability and self-confidence to use technology effectively in the educational process (Erdemir et al., 2009). Within the framework of new instructional programs, teachers using information and communication technologies, and prepare appropriate learning environments for students who have different features and abilities in this subject are expected to have proficiency. In Turkey, various initiatives have been made to enable teachers to use computers and other information technologies in lessons. In many projects in 1985, in the scope of many projects, the teachers are intended to be grown in computer and computer-assisted instruction through in-service training (Uşun, 2009).

Information and communication technologies are developing as the day are developing and the means of use of these technologies are common. In parallel with these developments, these tools can be reached from anywhere and each individual can communicate with the citizen of the country in a different geography of the world. The concept of digital citizenship has emerged as a result of these developments (Mossberger et al., 2007). Digital citizenship is expected from a person to demonstrate the technological tools that he uses in his daily life in a digital environment within the framework of the rights and responsibilities that he has as a citizen. Apart from being a method that teaches how to use the mass media tools and how it is preparing the digital citizenship individual to the changing and developing digital platform (Görmez, 2017). The aim of this study is to determine the perceptions of social studies teacher candidates on technology use of digital citizenship, focusing on online behavior and practices on this issue. In accordance with this general purpose, the answer to the following questions is searched:

- How are the technology usage habits of social studies teacher candidates?
- What are the perceptions of concepts containing the sub-dimensions (digital commerce, digital access, digital ethics, digital law, digital health, digital security, digital communications, digital literacy, digital rights, and responsibilities) of the concept of digital citizenship?
- What are the life practices of social studies teacher candidates for digital citizenship?

Method

The Research Model

In this descriptive study, the descriptive screening model was preferred as a research model, as it determined the levels of technology use of social studies teacher candidates, their perception of digital citizenship elements focused on online behavior, and their practice on this issue. In such research, researchers are interested in the distribution between individuals that make up the sample of the views and properties (Fraenkel & Wallen, 2006).

The Study Group

Criteria sampling from purposeful sampling methods was used in the study. The characteristic of this sample is that the sample is composed of persons, events, objects or situations that have qualifications in the problem (Büyüköztürk et al., 2017). The criterion for this research is that participants are digital technology users. In this direction, the study was conducted with a total of 84 social studies teacher candidates at four grade levels who continued the social studies teaching program at the Faculty of Education of Malatya Inonu University in the fall semester of the 2020-2021 academic year. Descriptive information about the participants of the study is included in Table 1.

Table 1. Descriptive information of participants

Participants	Frequency *(f)*	Demographic feature	Frequency *(f)*	Percentage (%)	Grade	Frequency *(f)*	Percentage (%)
Students	84	Female	45	54	1st grade	21	25
					2nd grade	18	21
		Male	39	46	3rd grade	25	30
					4th grade	20	24

A total of 84 teacher candidates, 45 (54%) girls and 39 (46%) boys, participated in the study when Table 1 was examined. Teacher candidates were distributed by grade level; 21 (25%) were freshmen, 18 (21%) were sophomores, 25 (30%) were third graders, and 20 (24%) were fourth graders. In the framework of the research ethics, the names of the participants were not used in the study. For this reason, for the participatory teacher candidates, the 1st grade A1 ... A21, 2nd grade B1 ... B18, 3rd grade C1 ... C25, D1 ... D20 were used for participants in the 4th grade.

Data Collection and Analysis

The data of the research has been applied to participants who participate in December 2020 online through Google Form, which is created with closed and open-ended questions. Before the interview form was prepared,

interview questions that can be included in the form were created by scanning the literature and the questions prepared to determine the validity of the scope of the form were presented to the opinion of experts. According to feedback from experts, questions are organized, and the form is given in its final form. In determining the activities of the participants, the form developed by Martin et al (2020) was used. Descriptive analysis technique was used in the analysis of research data and the analysis was carried out in 4 stages. These are creating a thematic framework for analysis, processing data according to the created framework, defining the findings and finally interpreting the findings. The purpose of descriptive analysis is to bring raw data into a format that the reader can understand and use. The data obtained in descriptive analysis are summarized and interpreted within predetermined themes (Yıldırım & Şimşek, 2017).

Findings

The findings of the study are presented under the headings 'technology usage habits of participants', 'perceptions for sub-dimensions of digital citizenship concept' and 'life practices of participants towards digital citizenship'.

Technology Usage Habits of Participants

The technology usage habits of the participants were evaluated in terms of electronic device use, internet access, and their activities (purposes of using technology). The technologies used by all participants determined to have cellular and local network connections are included in Table 2.

Table 2. Electronic devices used

Electronic devices	Frequency *(f)*	Percentage *(%)*
Smartphone	34	40
TV	25	30
Laptop	13	15
Desktop	4	5
Tablet	3	4
Game console	3	4
Smart watch	1	1
MP3 player	1	1
Total	84	100

In table 2, it was determined that the most commonly used electronic devices at home by the participants were the smartphone (40%), followed by the television (30%) and the laptop (15%). Desktop computer (5%), tablet (4%), game console (4%), smartwatch (1%) and MP3 player (1%) were found to be used by more limited participants. The use of these devices at home is 100% due to the effects of pandemic conditions. Before the pandemic, it was determined that this level was distributed in the home, school, social environment, and outdoor places. Especially in the pre-pandemic period, 33 (75%) of female students stated that they used these technologies more at home; 36 (92%) of male students stated that they used them more in places outside the home. It was found that participants who stated that they used the technologies used most for distance learning used the second place to communicate with social media channels and the third place to follow the agenda. Distribution of responses to class levels is included in Table 3.

Table 3. Purposes of use of technologies (activities)

Categories	1st grade (f=21)	2nd grade (f=18)	3rd grade (f=25)	4th grade (f=20)
Distance Education	21	18	25	20
Communication	17	10	21	12
Agenda tracking	10	8	11	7
Entertainment	8	3	4	3
Sharing	6	2	3	3
Shopping	1	-	1	2

In this category that each participant can specify more than one usage purpose, participants are used to use technologies for at least for shopping purposes. When examined as class distributions, it was determined that the

use of technology at all class levels was the most for educational purposes and the least for shopping purposes. While using the technology to communicate and agenda monitoring, there was a class for the 1st grade entertainment and sharing purposes, while using a maximum of 1 and 3 grades.

Perceptions for Sub-Dimensions of Digital Citizenship Concept

In this section, the perceptions of digital trade, digital access, digital ethics, digital law, digital health, digital security, digital laws, digital health, digital security, digital communication, digital literacy, digital rights and responsibility. In line with this, digital citizenship, most e-government: the use of digital commerce, shopping over the internet; digital access, accessing data sources through the internet; digital ethics, moral behavior in a virtual environment showing follow the rules; digital law, as the set of rules that must be followed on the internet, digital communication, digital tools through e-mail, communicating via apps like whatsapp, and anyone who uses digital rights and responsibilities digital media has been defined as facilities that they have. Digital health, digital security and digital literacy were the dimensions where participants showed the most ambivalence and had difficulty reflecting their thoughts.

Life Practices of Participants towards Digital Citizenship

The life practices of digital citizenship, in which participants are evaluated in the dimensions of digital habits, cyberbullying, digital netiquette, digital footprint, digital privacy and digital identity, are included in Table 4.

Table 3. Life practices for digital citizenship

Life Practices	Yes (%)	No (%)	Not Sure (%)
Digital Habits			
Are you taught digital citizenship at school?	17	80	3
Do you have access to the internet at home?	61	39	0
Cyberbullying			
Have you ever been in cyberbullying behavior?	21	67	12
Do you know anybody that has been cyberbullied?	54	33	13
Do you know how to collect proof if you suspect cyberbullying has occurred?	31	48	21
Digital Netiquette			
Do you usually follow digital etiquette when communicating/sharing online?	61	15	24
Have you ever made an online post that might be considered hurtful and unfair to a different gender or race?	2	82	16
Would you be careful to use respectful language?	73	13	14
Do you answer e-mails as soon as you read them?	30	67	3
Have you ever posted a photo or picture online without the person's permission?	41	48	11
Have you ever liked or shared a mean comment or post?	8	65	27
Digital Footprint			
Have you ever re-shared someone else's post?	56	28	16
Has someone ever re-shared one of your posts?	36	21	43
Digital Privacy			
Do you make sure your passwords for your online accounts are safe?	84	7	9
Do you edit your security settings for your online accounts?	65	28	7
Have you ever shared your password with a friend?	23	73	4
Do you share information with people online that you may not know?	11	86	3
Have you ever added a friend or allowed someone to follow you that you did not know?	61	29	10
Have you ever friended or followed someone you didn't know?	41	52	7
Digital Identity			
Do you think a person's online identity can be different from their face-to-face identity?	88	5	7

In this section, where digital habits were first revealed, a significant proportion of participants (80%) stated that digital citizenship was not taught in educational institutions. It was found that 61% of those who were online while at home were at home. Cyberbullying, digital netiquette, digital footprint, digital privacy and digital identity are elements of digital citizenship studied in this study. These five elements focused specifically on participants ' online behavior.

Cyberbullying

When the table 4 is examined, 67% of the participants have never been in cyber bullying behavior and 21% were determined. An important part of the participants (54%) recognizes a cyber-bullying person; in case of doubt, it has occurred that there are not enough information about the evidence to collect evidence.

Digital Netiquette

A large proportion of respondents said that they usually follow digital etiquette when communicating/sharing online (61%); they do not share online (82%), which can be considered hurtful and unfair to a different gender or race. Participants (73%) who stated that they were usually careful to use respectful language; they were also careful and did not share bad comments or posts (65%). It was found that the proportion of those who answered yes (41%) and no (48%) in sending a photo or image online without the person's permission was close to each other. Incoming e-mails were found to have a low response rate (30%) as soon as they were read.

Digital Footprint

It found that 56% of teacher candidates re-shared someone else's post, while 28% refrained from sharing it. In addition, 36% of respondents said that their own publications were shared by others, while 21% said that their own publications were never shared by others. A significant proportion (43%) said they did not have clear information that their own publications were shared by others.

Digital Privacy

They noted that participants often practiced secure online privacy behaviors. 84% of the respondents stated that they created secure passwords, 65% said that they edited the security settings of their accounts, 73% said that they did not share passwords with any friends, 86% said that they did not share information with strangers. However, it has been found that 41% of the participants have not recognized as friends as 61% allowed them to follow them.

Digital Identity

88% of respondents said they thought a person's online identity might be different from their original identity. Very small proportion (5%) respondents suggested that online identities were the same as actual identities.

Results and Discussion

It was determined that the most commonly used electronic devices at home by the participants were the smartphone, followed by the television and laptop. Desktop computers, tablets, game consoles, smartwatches and MP3 players have been found to be used by more limited participants. The use of these devices at home is 100% due to the effects of pandemic conditions. As a matter of fact, the need to increase the internet to the Internet, technology, technology and digital vehicles according to normal conditions, it has become a digital citizen of people to fulfill the digital citizenship criteria according to the normal conditions (Aldemir & Avşar, 2020). Before the pandemic, it was determined that this level was distributed in the home, school, social environment and outdoor places. In particular, 33 of the female students in the pre-pandemic period (75%) of these technologies are more at home; 36 (92%) of male students stated that they used in places other than home. It was found that participants who stated that they used the technologies used most for distance learning used the second place to communicate with social media channels and the third place to follow the agenda. When

examined as class distributions, it was determined that the use of technology at all class levels was the most for educational purposes and the least for shopping purposes. While using the technology to communicate and agenda monitoring, there was a class for the 1st grade entertainment and sharing purposes, while using a maximum of 1 and 3 grades.

Participants who express digital citizenship with the most use of e-government perceive their perception of the lower dimensions of digital citizenship: digital commerce, shopping over the internet; digital access, accessing data sources through the internet; digital ethics, moral behavior in a virtual environment showing follow the rules; digital law, as the set of rules that must be followed on the internet, digital communication, digital tools through e-mail, communicating via apps like whatsapp, and anyone who uses digital rights and responsibilities digital media has been defined as facilities that they have. These opinions of the teacher candidates overlap the one with the results of the study conducted by Özerbaş (2019). Digital health, digital security and digital literacy were the dimensions where participants showed the most ambivalence in expressing their perceptions and had difficulty reflecting their thoughts. Similarly, in the study of Görmez (2016), teacher candidates have received their views on digital citizenship and determined that teacher candidates have no views on concepts such as digital citizenship, digital communication, digital literacy, digital ethics, digital rights and responsibilities.

Prensky (2005) pointed out that today's students are very different from teachers in the classroom environment, and that teachers acting with the educational understanding of the twentieth century cannot guide students expressed as digital natives of the twenty-first century. As a matter of fact, at the point of digital habit, a significant part of the participants (80%) stated that digital citizenship is not taught in educational institutions. This result supports the idea that the digital citizens claimed in the studies of Gleason and Von Gillern (2018) are not widely taught in public schools. The study found that 61% of those who went online while at home. Participants' life practices for digital naturalization are evaluated within the scope of digital citizenship elements and focused on their online behavior. Accordingly, 67% of the participants have never been in cyberbullying behavior and 21% were determined to be in this behavior. A significant proportion of respondents (54%) said they knew someone who had been cyberbullied; in case of doubt, they did not know enough about gathering evidence. Martin and his colleagues, who conducted this study at the secondary school level, concluded that, in contrast to this result, secondary school students are more knowledgeable about collecting evidence. In the secondary school, Martin and et al (2020), contrary to this result, they concluded that secondary school students are more informed on evidence. As part of digital netiquette, a large proportion of respondents said that they usually follow digital netiquette when communicating/sharing online (61%); they do not share online (82%), which can be considered hurtful and unfair to a different gender or race. Participants (73%) who stated that they were usually careful to use respectful language; they were also careful and did not share bad comments or posts (65%). It was found that the proportion of those who answered yes (41%) and no (48%) in sending a photo or image online without the person's permission was close to each other. Incoming e-mails were found to be low (30%) of the readers read-free response rate. It is seen that Martin and et al (2020) are higher in the study with secondary school students (62.9).

In the context of the digital footprint, it was found that 56% of teacher candidates re-shared someone else's post, while 28% refrained from sharing it. In addition, 36% of respondents said that their own publications were shared by others, while 21% said that their own publications were never shared by others. A significant proportion (43%) said they did not have clear information that their own publications were shared by others. They noted that as digital privacy, participants often practice secure online privacy behaviors. 84% of the participants of the research stated that they have created secure passwords, 65% accounts that they organize security settings, 73% are not in password sharing with any friends, and 86% did not share information with strangers. However, it has been found that 41% of the participants have not recognized as friends as 61% allowed them to follow them. As for digital identity, 88% of respondents said they thought a person's online identity might be different from their original identity. Very small proportion (5%) respondents suggested that online identities were the same as actual identities. This result also parallels the study of Martin et al (2020). The results of this study show that social studies teacher candidates have a high use of technology, but that life practices for digital citizenship are not sufficient.

Scientific Ethics Declaration

The author declares that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the author.

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Author Information

Sule EGUZ
Inonu University
Education Faculty, Department of Social Studies Education,
Turkey
Contact e-mail: suleeguz*@gmail.com*

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