



Digital Citizenship and Education in Turkey: Experiences, the Present and the Future

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Abstract

Since the late twentieth century, the use of technology has become widespread, affecting social life in different parts of the world, especially in countries with developed economies. As an economically developing country, the use of computers and the Internet in Turkey has increased rapidly since the 2000s. In this context, individual and social life is going through a process of digitalization. This process of technology-based change and transformation has added several new meanings of the concept and practice of citizenship. Today, which has been called an age of information-communication technologies, one of the new forms of citizenship is digital citizenship. This form of citizenship, which includes the use of Internet-based technologies in an effective, safe, and ethical manner, has begun to occupy an important place in Turkey's education system. The process of developing the technological competences of citizens and equipping them with the knowledge, skills, and values they need to use this technology correctly, namely, digital citizenship education, consists of two dimensions: the technical

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and effective. The technical dimension aims to teach computer and Internet-based technology knowledge to the students during the education process from primary school until university. The effective dimension includes focuses on students' ability to use technological tools, primarily the computer and the Internet, in a safe and ethical manner within the scope of social studies, the main aim of which to deliver an effective and democratic citizenship education. In examining the field, this chapter argues that both dimensions are important and should be provided to students within their digital citizenship education.

Keywords

Technology · Digitalization · Digital · Citizenship · Citizenship education · Social studies education

Introduction

Technology is a primary influence upon social and individual life and experiences and has been among the key factors that have impacted on change, transformation, and orientation over the last century (Selwyn 2013). The effects of technology on human life are increasing and are becoming more evident, leading the twenty-first century to be named as the age of information and communication technologies (Oladimeji et al. 2011; Büyükbaykal 2015). Due to advancements in technology, distances have been eliminated which has made it possible to know the unknown with a single click. Furthermore, processes of globalization have gained momentum, and, as McLuhan (1989) suggests, the speed of the world's transformation into a global village has increased.

Different standards have been set in order to define social strata within the context of Internet-based change and transformation processes. Prensky (2001) defines two main generations in terms of access to technology, adaptation, and use: digital natives and digital immigrants. Digital native describes people born after 1980 which are adapted easily to technological developments and who tend to use these innovations in their daily life (Burdick and Willis 2011). Digital immigrants are those born before 1980 and who tend to have a relatively reluctant attitude toward changes and transformations based on information and communication technologies and who have the potential to experience various problems in adaptation to technological developments (Arabacı and Polat 2013; Eşgi 2013).

As the usage and visibility of technology in daily life have increased, how these devices are used has become incredibly important, including for how citizenship is experienced and enacted. Considering today's developments, it is possible to say that the effect of technology in our lives will continue to exist, probably increasingly, in the medium and long term. This reality has brought about a new concept to the related literature: digital citizenship.

Following this introduction, the next section details a theoretical framework for understanding digital citizenship, which is argued as emerging as a result of the reflection/consequence of computer- and Internet-based technological

developments. In the remaining sections, important developments related specifically to digital citizenship in Turkey will be evaluated within the context of citizenship and citizenship education policies.

Digital Citizenship

In the last 20–30 years, digital citizenship has emerged as a new way of identifying individuals who can use technology effectively within the framework of Internet-based technological developments (Ribble 2009; Hui and Campbell 2018; Emejulu and McGregor 2019). One of the main topics of discussion has been whether the digital adjective that expresses technological competence can characterize citizenship or not. In other words, scholars ask whether it is correct to describe the concept of citizenship, which serves as a political/legal definition tool, within the framework of technological competences (Bearden 2016). In discussions of how to define digital citizenship, the concept is generally described through categorizing its different dimensions. In *Digital Citizenship in Schools*, one of the most important works in the related field, Ribble (2015, pp. 23–60) examines digital citizenship as comprising nine dimensions.

1. **Digital access:** The key concern of digital access is that all individuals and groups that make up the society should have adequate opportunity to access technology. Various disadvantaged groups in the society may not be able to have this opportunity. However, it is important to make access possible for digital citizenship and education (Ribble and Bailey 2004; Jones and Mitchell 2015).
2. **Digital trading:** One of the important properties that a digital citizen should possess is the ability to perform conscious and safe online shopping (John 2008). A digital citizen of the twenty-first century should, therefore, be equipped with the capacities to be able to conduct online shopping in a safe and conscious manner.
3. **Digital communication:** New forms of communication have emerged in the digital environment, with applications and the use of e-mails increasing significantly (Noonan and Piatt 2014; Poushter et al. 2018). Research from a variety of contexts has evidenced that the use of mobile phones and tablets starts from early age (Park and Park 2014; Aral and Keskin 2017; Yalçın and Duran 2017). Therefore, individuals' ability to use information and *communication* technology products properly and effectively in the context of digital citizenship education is understood as vital for digital citizenship.
4. **Digital literacy:** An efficient digital citizen should be equipped with the basic knowledge and skills regarding the technological means at hand. Here the criterion may be that each citizen should be aware of the information and communication technologies that can be used in their daily life and be able to use them effectively when needed (Meyers et al. 2013). Research conducted on the tools used in education have suggested that teachers who are unable to follow

technological developments have difficulty in carrying some of the properties needed for effective education to their classes (Çelikkaya 2013; Kubat 2018).

5. **Digital ethics:** The development and diversification of communication technologies has not been unproblematic. Issues such as the malicious use of technologies and improper use of social media are frequently observed. These issues have an ethical dimension, reminding us that users of technology may exhibit many unethical behaviors in digital environments, sometimes consciously in bad faith and sometimes unconsciously due to a lack of sufficient information (Budinger and Budinger 2006).
6. **Digital law:** Freedom in the digital world is not unlimited. As with standard definitions of citizenship, so too digital citizenship is shaped and governed by the existence (or otherwise) of various legal frameworks. For this reason, the twenty-first century digital citizen should be aware of legal frameworks when using communication technologies.
7. **Digital rights and responsibilities:** Connected with digital law, and again similarly to citizenship in general, digital citizenship involves rights and responsibilities. It is important to note that violations of rights in the digital world may stem from citizen interaction but may also involve cases such as the obstruction of Internet access without justified reason or the use of the wrong information through Internet sites to create public opinion.
8. **Digital health:** The use of computers and the Internet in violation of human anatomy and mental health may also have a negative impact on human health (Mustafaoğlu et al. 2018). Research suggests that children and young people may be particularly vulnerable from this impact (Ulusoy and Bostancı 2014; Erdal 2015; Kuyucu 2017). Other evidence suggests that people who spend a long time in front of the computer show increased risk of various health problems (Fowler and Noyes 2017).
9. **Digital security:** With the development and spread of Internet-based technologies, the risks faced by people have also increased, including those associated with certain fraud methods (Nkotagu 2011; Button et al. 2014; Atkins and Huang 2013). A core part of digital citizenship, therefore, is the possession of sufficient knowledge and skills to use the technologies securely (Jwaifell 2018).

As these nine dimensions suggest, the concept of digital citizenship is multifaceted and subject to competing theories aimed at understanding its evolving role. It is important, therefore, that education systems – which will be formed in an attempt to raise individuals and citizens who have the required qualifications and capacities for the twenty-first century information and communication age – should be cognizant of this multifaceted structure. As one of the countries where computer and Internet-based technological developments have led to significant impacts, especially in the last 30 years, the remainder of this chapter focuses on the context of Turkey. In this context, firstly the process of computer-Internet-based digitalization in Turkey will be discussed, and developments in computer and Internet usage rates will be analyzed. Then, activities central to e-government as a reflection of the digitalization

of state-citizen relations are examined. Finally, digital citizenship as an aspect of citizenship education in Turkey will be evaluated.

Digitalization and Digital Citizenship Education in Turkey

Digitalization in Turkey

In Turkey, the first computer was used in 1960 (Engin et al. 2010). The *IBM-650 Data Processing Machine*, used by the General Directorate of Highways for various calculations in road construction works, had the capacity to make 78,000 addition-subtraction and 5000 multiplication per minute (<http://www.kgm.gov.tr/Sayfalar/KGM/SiteTr/Galeri/IlkBilgisayar.aspx>). Use of computers in Turkey, which started with the first computer used in public in 1960, increased rapidly during the second half of the 1990s.

Digitalization-based technological developments in Turkey are closely related with computer use. Although technology is not merely comprised of computers, the use of computers is highly important in terms of digitalizing work and transactions. Therefore, the history of digitalization in Turkey is parallel to the history of computer use. The first Internet connection in Turkey was installed in 1993 by the Middle East Technical University (METU) and then spread to other universities. In Turkey, the Internet primarily gained prevalence among universities for academic purposes (Demirdöğmez et al. 2018). However, the rapid spread of the Internet at almost all levels of society in Turkey took place after 2000s. In a study conducted by the Institute of Information Technology, while the rate of computer ownership in urban households in Turkey was only 6.5% in 1997, it was observed that this ratio increased to 12.3% in 2000 (Turan and Polat 2009) and has increased since. The implications of this for citizenship, and digital citizenship, are discussed below.

Table 1 shows information technology usage statistics in Turkey prepared by the Turkish Statistical Institute (TURKSTAT) between the years 2004 and 2018. As can be seen from the data in the table, the rate of computer use, which was only around 10% at the beginning of 2000s, increased significantly to 2018.

With advances in computer technology, the emergence of laptops and tablets as an alternative to desktop computers has led to a significant increase in the rate and number of portable computers. In addition, another important data about digitalization in Turkey is the figures of mobile phone usage. The ratio, which was around 50% in 2004, has now reached almost 99%. It can be stated that Internet technology has a significant contribution to this important increase in mobile phone usage; such that when Table 2, which shows the Internet usage rates in the same period, is analyzed, the parallels between the two is notable.

According to Table 2 which shows the computer and Internet usage rates in Turkey, it is seen that the rate of Internet usage, which was 18.8% in 2004, reached around 72% at the end of 14 years. The rate of non-Internet users is now around 27.1. Another data showing the increase in Internet usage is the number of Internet subscribers. The number of subscribers, which was around 300 thousand in 1998,

Table 1 Availability of devices in households, 2004–2018

	%																
	Year																
	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
Desktop computer	10.0	11.6	24.0	28.1	30.7	33.8	34.3	31.8	30.5	27.6	25.2	22.9	20.3	19.2			
Portable computer (laptop, tablet PC)	0.9	1.1	5.6	9.1	11.2	16.8	22.6	27.1	–	–	–	–	–	–			
Portable computer (laptop, netbook, tablet)	–	–	–	–	–	–	–	–	–	40.1	43.2	–	–	–			
Portable computer (laptop, netbook)	–	–	–	–	–	–	–	–	31.4	–	–	36.4	36.7	37.9			
Tablet computer	–	–	–	–	–	–	–	–	6.2	–	–	29.6	29.7	28.4			
Mobile phone (incl. smart phone)	53.7	72.6	87.4	88.1	87.6	90.5	91.9	93.2	93.7	96.1	96.8	96.9	97.8	98.7			
Smart TV	–	–	–	–	–	–	–	–	7.3	12.4	20.9	24.6	28.5	32.1			

TurkStat, survey on Information and Communication Technology (ICT) usage survey in households and by individuals, 2004–2018

– Denotes magnitude null

Table 2 Percentages of computer and Internet usage by latest usage and sex, 2004–2018

	Year	%					
		Computer			Internet		
		Total	Male	Female	Total	Male	Female
Computer and Internet users	2004	23,6	31,1	16,2	18,8	25,7	12,1
	2005	22,9	30,0	15,9	17,6	24,0	11,1
	2007	33,4	42,7	23,7	30,1	39,2	20,7
	2008	38,0	47,8	28,5	35,9	45,4	26,6
	2009	40,1	50,5	30,0	38,1	48,6	28,0
	2010	43,2	53,4	33,2	41,6	51,8	31,7
	2011	46,4	56,1	36,9	45,0	54,9	35,3
	2012	48,7	59,0	38,5	47,4	58,1	37,0
	2013	49,9	60,2	39,8	48,9	59,3	38,7
	2014	53,5	62,7	44,3	53,8	63,5	44,1
	2015	54,8	64,0	45,6	55,9	65,8	46,1
	2016	54,9	64,1	45,9	61,2	70,5	51,9
	2017	56,6	65,7	47,7	66,8	75,1	58,7
2018	59,6	68,6	50,6	72,9	80,4	65,5	
Never used it	2004	76,4	68,9	83,8	81,2	74,3	87,9
	2005	77,1	70,0	84,1	82,4	76,0	88,9
	2007	66,6	57,3	76,3	69,9	60,8	79,3
	2008	62,0	52,2	71,5	64,1	54,6	73,4
	2009	59,9	49,5	70,0	61,9	51,4	72,0
	2010	56,8	46,6	66,8	58,4	48,2	68,3
	2011	53,6	43,9	63,1	55,0	45,1	64,7
	2012	51,3	41,0	61,5	52,6	41,9	63,0
	2013	50,1	39,8	60,2	51,1	40,7	61,3
	2014	46,5	37,3	55,7	46,2	36,5	55,9
	2015	45,2	36,0	54,4	44,1	34,2	53,9
	2016	45,1	35,9	54,1	38,8	29,5	48,1
	2017	43,4	34,3	52,3	33,2	24,9	41,3
2018	40,4	31,4	49,4	27,1	19,6	34,5	

TurkStat, survey on Information and Communication Technology (ICT) usage survey in households and by individuals, 2004–2018

has reached around 71 million in 2018. There are 71 million Internet subscriptions in a country with a population of 80 million (TURKSTAT).

It is seen that the use of computers, Internet, and Internet-supported technological products in Turkey increased significantly during the last 15–20 years. However, it is also a fact that usage is not equitable across the population and that certain groups within Turkish society still cannot benefit from these technologies to the extent available to others. This pattern of usage both shapes and has important implications for digital citizenship, as will be explained in the next section.

Table 3 Computer and Internet usage of individuals by occupation and sex, 2013–2018

	%													
	Computer users							Internet users						
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018		
ISCO-08	91,2	93,1	93,7	94,1	95,9	94,5	90,5	93,6	94,0	96,0	97,8	96,7		
Managers	94,7	96,9	97,3	95,1	98,4	99,2	94,5	96,8	97,7	96,5	99,3	99,8		
Professionals	92,9	94,8	97,4	95,3	97,0	96,5	92,9	95,0	97,4	97,7	98,9	99,7		
Technicians and associate professionals	92,5	93,4	94,6	92,8	94,6	95,4	91,6	93,7	94,7	94,4	97,6	98,2		
Clerical support workers	74,5	75,8	78,6	77,0	78,6	81,1	73,4	76,8	80,3	83,9	88,1	92,4		
Service and sales workers	20,4	21,8	33,1	26,2	27,3	29,1	19,0	22,7	34,5	34,4	38,6	47,9		
Skilled agricultural, forestry and fishery workers	72,1	68,0	75,1	73,7	74,0	76,0	70,9	69,8	78,9	84,5	86,0	91,2		
Craft and related trades workers	73,2	74,9	79,9	74,5	77,9	80,1	72,9	76,5	79,3	85,0	90,6	95,0		
Plant and machine operators and assemblers	49,4	53,2	52,0	53,2	50,8	56,5	48,7	54,4	55,7	64,2	69,0	75,8		
Elementary occupations														

TurkStat, survey on Information and Communication Technology (ICT) usage survey in households and by individuals, 2013–2018

The individuals expression in the table heading refers to the individuals in the 16–74 age group

Resulting from research conducted by TURKSTAT, the data in Table 3 shows that the occupational group that uses these technologies the least is composed of people working in agriculture, forestry, and aquaculture sectors. A recent project has been developed for agricultural sector employees, as one of the disadvantaged groups in terms of computer and Internet usage. Within the scope of the project, warning messages on weather-based meteorological forecasts and possible extreme weather events (such as hail and storm) will be sent to farmers' mobile phones on a daily basis (<https://www.tarimorman.gov.tr/Haber/1656/Tarim-Ve-Orman-Bakani-Bekir-Pakdemirli-Ciftcimiz-Sabah-Kalktiginda-Bizi-Yaninda-Gorecek>). In this context, it is hoped that farmers will have a more productive period benefiting from technological opportunities in their agricultural activities. Within the scope of the project, warning messages on weather-based meteorological forecasts and possible extreme weather events (such as hail and storm) will be sent to farmers' mobile phones on a daily basis. In this context, it is aimed that farmers will have a more productive period benefiting from technological opportunities in their agricultural activities (<https://www.tarimorman.gov.tr/Haber/1656/Tarim-Ve-Orman-Bakani-Bekir-Pakdemirli-Ciftcimiz-Sabah-Kalktiginda-Bizi-Yaninda-Gorecek>). Such projects for the transfer of digital technologies to daily life practices can also help to improve the competence of individuals in digital citizenship dimensions. If a farmer is able to follow the expectations of the weather on his mobile phone and be aware of possible risk situations, he will make progress in digital access and digital communication dimensions; moreover, he will have a gain on the digital trade (economy) dimension because they can achieve a more secure and profitable agricultural activity through digital literacy.

One of the examples of the impact of Information and Communication Technologies on social life and citizenship in Turkey is experienced in the banking sector. In Turkey, which introduced the automatic cash machine (ATM) in 1987, the first Internet banking service was started in 1997 (Armağan and Temel 2016). According to the data of the Banks Association of Turkey, as of 2017, there have been 51 million customers registered in the Internet banking system.

Another dimension for Turkish citizens effected by the information and communication technologies – one clearly relevant to digital citizenship and digital citizenship education – is the holding of public opinion and electioneering. Politicians and political parties, who try to reach and sway public opinion, also use the latest developments in information and communication technologies as an important tool in this regard. In Turkey, Internet environments are being used at an increasing rate especially in the elections after the 2000s. Within the scope of electioneering by the Justice and Development Party, which is the ruling party, Internet-based social media tools have been used increasingly. The fact that political parties have begun to prefer Internet-based technological channels to communicate with citizens emphasizes the importance of digital citizenship competence for citizens. An individual who is not adequately equipped in the dimensions of digital literacy and digital communication may not be able to engage fully. Therefore, in the rapidly changing and developing era of twenty-first century information and communication technologies, digital

citizenship education constitutes one of the most basic dimensions of educating citizens who can guide the future.

E-Government as an Area of Digitalization of State-Citizen Relations in Turkey

In many countries of the world, the process of conducting government services over the Internet is spreading rapidly in direct proportion to the access and usage rate of that country's information technologies (Rocheleau 2007; Machova and Lnenicka 2016; Chipeta 2018). In this new state form, which has been called e-government, relations between the state and citizens as well as the relations between the state and institutions and organizations are carried into the electronic environment. In the same way, systems are developed in order to execute internal works and transactions through Internet-based electronic systems.

E-government studies in Turkey started mainly after the 2000s. The spread of the e-government system reveals many advantages. In addition to citizens' being able to complete their transactions with the public institutions and organizations in a faster and more practical way, it can also be said that this utilization of digitalization-based technology is a very effective tool in terms of transparency, accountability, and savings (Erdal 2004; Kuran 2005). Moreover, communication in the traditional state-citizen relationship is often unilateral; the state can convey the messages it wants to give to the citizens through its various instruments. However, thanks to the e-government applications in the digitalized world, citizens can now convey certain requests, suggestions, and complaints to the relevant units of the state. In Turkey, BIMER (Prime Ministry Communication Center) and then CIMER (Presidential Communication Center) were created and operated as a digital platform where citizens can communicate their messages at the highest levels of the central administration. In addition to the central administration, many local units (municipalities and governorates) have developed systems in which citizens can communicate and trace their wishes and complaints in a digital environment.

The development of the e-government system through moving works and transactions of public administration to the electronic environment has also accelerated and facilitated processes within the state itself. Within this framework, the information needed by the judicial, administrative, and security units can be accessed more readily through Internet-based systems created on behalf of the institution. This possibility, on the one hand, carries the internal functioning of the state to a more systematic and auditable form, and on the other hand, has a positive effect on the citizen-state relationship. Many examples can be given in this regard. Problems with data access have been resolved with the new judicial system, with judges and prosecutors having the possibility to access the information they need faster than before. Although there are deficiencies with several dimensions and fields that need to be improved (Güngör 2014), Turkey has carried out significant studies regarding improvements and developments on e-state applications, especially in the last 10 years (Ekinci 2018).

However, in spite of digitalization and the increase in the usage level of computer/Internet-based technologies in the relations between citizen-state, some issues remain. A study by Kara and Yanık (2016) draws attention to variations in levels of computer and Internet usage based on educational background and sexuality. Groups trying to accomplish their official dealings on the e-state system may encounter various problems based on a lack of knowledge of technology usage (digital literacy) or issues with equal access (digital access). In order to get rid of such problems, technology integration trainings which include wide segments of the society should be provided (Yılmaz 2017). Besides, establishing the necessary infrastructure support is vital for the adoption and usage of e-state applications. Studies carried out by Daştan and Efiloğlu Kurt (2016) which focus on the determination of factors that are effective for adaptations to the e-state system reinforce the importance of infrastructure support, and it is stated that citizens adopt negative attitudes toward e-state applications which do not have sufficient infrastructure and which do not work with the desired productivity. Within the scope of infrastructural works, local governments have important duties as well. It is important that local government units, which are the first addressees of the citizen in many aspects of their engagement, update their activities in accordance with technology and perform certain works or studies to increase the awareness and usage level of citizens (digital literacy) in this transformation process. In studies that examine the current situation of mobile apps of metropolitan municipalities in Turkey providing services for their citizens, Gürses and Engin (2016) state that the current mobile applications fail to satisfy and need to be improved.

Consequently, it can be stated that e-state systems need to adapt and develop themselves continuously. In parallel with these development activities toward technological infrastructure, additional activities to increase the level of awareness of citizens toward e-state applications are also important. A great majority of citizens using the current e-state applications express that they are satisfied with these applications (Ekinci 2018). It is important to reflect this satisfaction to other segments of society, including those groups who have low levels of accessing computer-Internet-based technological applications.

Digital Citizenship Education in Turkey

In Turkey, citizenship education is basically taught through a social sciences course. Social studies, which emerged in the United States at the beginning of the twentieth century, also began to take part in Turkey's curriculum in the late 1960s. Social studies, which is formed by bringing together social and human sciences in a multidisciplinary or interdisciplinary structure at the student level, has to be closely related to many other courses in order to achieve the aim of educating citizens with the characteristics of the twenty-first-century age of information and communication technologies.

It can be stated that digital citizenship education in Turkey is designed in two dimensions: technical and effective. The *technical dimension* includes teaching the

basic technical knowledge of information and communication technologies to students. The rate of computer and Internet usage in Turkey increased significantly after 2000s and nowadays especially that the Internet usage has reached high levels. Various changes, transformations, and improvements have been made in the curriculum of information technologies course in line with this development. In this context, the computer course, which was added to the curriculum as an elective course at the primary education level in the late 1990s, was found inadequate as a result of the differentiation in social dynamics and the increase in the provision of technology in daily life over time, and the curriculum has been subsequently updated (Yeşiltepe and Erdoğan 2013). In 2013, with a new regulation in the curriculums made by the Ministry of National Education, the Information Technology and Software course took place in the curriculum for 2 h per week as a compulsory course in fifth and sixth grades and as an elective course in the seventh and eighth grades of the secondary school (Uzgur and Aykaç 2016). The change has not only involved the transition of the course as a compulsory lesson by taking it out of the elective pool, but also current technical developments have been tried to be reflected in terms of content and teaching method techniques.

In addition to making the information technologies course compulsory at some levels of education, the FATİH project was initiated by the Ministry of National Education and brought to a certain point as a larger project for the use of computers and Internet in schools. The scope of the FATİH project aims to provide Internet access to all schools and classes and equip classrooms with interactive boards (Kavak et al. 2016). With the completion of these technical infrastructure requirements, it is also made possible for teachers and students to benefit from information and communication technologies in the classroom outside the information technologies course. This ease and prevalence of technological access aimed by the FATİH project can also be expressed as an important step in terms of digital citizenship education. Ribble, in his dimensioning for digital citizenship, puts digital access as the first item. Therefore, one of the first steps of digital citizenship education is that students have access to technology. It is relatively difficult for students in disadvantaged areas to access this opportunity in social life. Within this framework, this project initiated by the Ministry of National Education aims to provide all students with possibilities close to each other, although not exactly the same, under the roof of school. The ability of students to have access to technology is key to the transition to other stages of digital citizenship education; therefore, within the scope of the same project, it has been aimed that the classrooms will be equipped with digital infrastructure, while on the other hand, that teachers get training to integrate information technologies into their courses (Alkan et al. 2011), and various courses and seminars have been organized in this framework (Sarıtepeci et al. 2016; Tatlı and Kılıç 2013). Various online portals have been created simultaneously with the training process for the services that teachers need to adapt their information technologies in their lessons and the necessary infrastructure created to enable teachers to share the materials they produced with their colleagues. The fact that students and teachers have access to digital access and communication forms the basis of the necessary infrastructure work for progress in other dimensions of digital citizenship education.

Another reflection of the digitalization process in education was put into operation with the e-school system. With this system, the Ministry of National Education has taken an important step for transferring its internal works and transactions to the electronic environment and thus transition to a more rapid and transparent management while establishing an alternative environment for teacher-student and teacher-parent communication (Demirli et al. 2011). The system has enabled parents to follow the status of their children's success and follow up the notes of teachers and administrators about their children; thus, parent-school cooperation has been facilitated.

The second dimension of digital citizenship education is effective. The effective dimension includes how students, who learn how to use Internet-based technological tools technically in a basic sense in courses such as computer, information technologies, and coding, can use these tools in a proper, secure, and ethical way. In this framework, the first issue to be considered is Turkey Qualification Framework (TQF). The TQF, which contains information on what skills the students are intended to be equipped with by considering the education process as a whole, also serves as a guide for the curricular programs. In the context of TQF, eight competence areas have been determined, and one of these areas is digital competence. Regarding the digital competence area, the following information is included in the 2017 elementary and secondary school social studies curriculum (p. 5):

It includes the safe and critical use of information and communication technologies for work, daily life and communication. Such competence is supported by basic skills such as access to information and the use of computers for the evaluation, storage, production, presentation and exchange of information, as well as participation in and communication with the common networks via Internet.

In the light of the explanations given in the program related to digital competences, in addition to the ability to use computer- and Internet-based technological tools safely and properly, it can be stated that carrying these technologies into daily life and being able to use them actively in social participation issues are highlighted within the scope of the aim to develop the digital competences of the students.

Some of the specific objectives of the social studies course, whose main objective is to educate active, democratic, and participatory citizens, have been determined by also taking into account the competences set out in the TQF. One of the special objectives of the social studies course is to raise digital citizens. In the 2017 secondary school social studies curriculum, this objective has been clearly defined, and the following statements have been included in the 11th article of the course objectives (p. 8): "To use information and communication technologies consciously by understanding the development process of science and technology and their impacts on social life." To be compatible with this objective, one of the skills that are intended to be taught to students in the social studies course is determined as *digital literacy*.

In order to achieve these basic objectives in the social studies curriculum, some explanations were made for teachers in the implementation of the program. Among

these explanations, there are also sections that draw attention to the issue of digital citizenship (p. 10):

In recent years, new situations related to citizenship rights and responsibilities (digital citizenship, e-government, virtual commerce, social media, etc.) and a number of problems (digital division, identity theft, privacy of personal information, cyber fraud, cyber bullying etc.) have emerged due to developments in digital technology. In order to improve students' digital citizenship competences, the course should include in-class and extracurricular activities.

This explanation for the implementation of the social studies curriculum of primary and secondary schools can be understood as an indicator of the importance of digital citizenship in the social studies course. Teachers are asked to organize in-class and extracurricular activities to enable students to have the necessary equipment to use information and communication technologies properly, securely, and ethically.

In Turkey, social studies course is offered to the students starting from the fourth grade in primary school until the end of seventh grade in secondary school. When the 2017 elementary and secondary school curricula are analyzed in terms of digital citizenship, it is seen that there are many benefits aimed at helping students to be equipped with the knowledge, skills, and values required by the twenty-first century age of information and communication technologies (Table 4).

When the achievements and explanations given in Table 1 are examined, it can be stated that the social studies course, which is aimed at students becoming digital citizens, includes key concerns of digital citizenship today, including social relations, ethics, and security dimensions.

Summary

Internet and computer-based technological developments have had serious effects on individual and social life forms, especially in the last 30 years. In Turkey, as one of the countries experiencing the process of technological change and transformation, increased digitalization has a number of dimensions meaning the digital citizenship is both complex and varied. The use of smartphones, Internet, and Internet-based technological tools has increased rapidly, especially after 2000, and the increased use of technological products is reflected in the relations between the citizens and the state. In this context, the process of digitalizing the works and transactions of the public sector has been initiated. The process of transferring the state services into digital environment, which is called e-government, is continuing rapidly in Turkey which has implications for how Turkish citizens are educated and how they come to understand themselves as digital citizens.

In Turkey, and as a response to the rapid change and transformation toward digitalization, one of the main objectives of the education system is to raise citizens with the qualifications required by the twenty-first century age of information and

Table 4 Digital citizenship in 2017 social studies curriculum achievements

School year	Learning area	Achievement	Remarks
5	Science, technology, and society	Pays attention to the principles of academic honesty by recognizing that scientific works are protected by law	
5	Science, technology, and society	Discusses the effects of technology use on socialization and social relations	<i>While teaching this learning area, it should be ensured that the students acquire the values such as honesty, diligence and ethics of science, as well as skills such as self-checking and digital literacy</i>
		Questions the accuracy and reliability of the information reached in the virtual environment	<i>Topics such as distance shopping, secure Internet use, and identity theft are discussed</i>
		Obeys the security rules when using virtual environment	<i>The importance of giving references to the sources utilized and protecting the authenticity of the sources is emphasized</i>
		Acts in accordance with scientific ethics in his/her work	
5	Active citizenship		<i>Within the scope of the achievement, the e-government portal and the services provided through this portal are mentioned</i>
7	Individual and society	Discusses the role of media in social change and interaction	<i>A selected communication channel (TV, Internet, smartphones, etc.) is discussed as to how it changes the communication between individuals and also the culture in social sense</i>
7	Production, distribution, and consumption	Uses his/her rights and fulfills his/her responsibilities while utilizing communication tools	<i>The relationship between the right to privacy, freedom of expression and right to information, and the freedom of mass communication is discussed</i>
7	Production, distribution, and consumption	Analyzes the changes of digital technologies in the production, distribution, and consumption network	<i>E-commerce (computer games virtual/digital products as much as real products) is emphasized</i>

communication technologies. In this context, educational studies that are conceptualized as digital citizenship education and that enable students to use information and communication technologies in a conscious, secure, and ethical way are of essence.

Under the upper umbrella of digital citizenship education, there are two main dimensions: technical and affective. Within the technical dimension, the aim is to provide the students with the technical knowledge to use computer- and Internet-based technological products during their formal education, while the affective dimension includes knowledge, skills, and values for using these technologies in a secure and especially ethical way. That the ideal digital citizens of the future have the necessary qualifications in both of these basic dimensions can be stated as an indispensable necessity.

Cross-References

- [Discourses of Global Citizenship Education: The Influence of the Global Middle Classes](#)

References

- Alkan, T., Bilici, A., Akdur, T. E., Temizhan, O., & Çiçek, H. (2011). Fırsatları artırma teknolojiyi iyileştirme hareketi (FATİH) projesi (increasing opportunities improving technology movement (FATİH) Project). 5th International Computer & Instructional Technologies Symposium, Fırat University, Elazığ.
- Arabacı, İ. B., & Polat, M. (2013). Digital natives, digital immigrants and classroom management. *Electronic Journal of Social Sciences*, 12(47), 11–20.
- Aral, N., & Doğan Keskin, A. (2017). Examining 0–6 year olds’ use of technological devices from parents’ points of view. *Addicta: The Turkish Journal on Addictions*, 5(7), 317–348.
- Armağan, E., & Temel, E. (2016). Türkiye’de internet bankacılığı kullanımında demografik faktörlerin tüketici algısına etkisi üzerine ampirik bir çalışma (An empirical study upon the effect of demographic factors on consumer perceptions concerning the use of internet banking in Turkey). *Celal Bayar Üniversitesi Sosyal Bilimler Dergisi*, 14(2), 411–436.
- Atkins, B., & Huang, W. (2013). A study of social engineering in online frauds. *Open Journal of Social Sciences*, 1(3), 23–32.
- Bearden, S. M. (2016). *Digital citizenship*. Thousand Oaks: Corwin.
- Budinger, T. F., & Budinger, M. D. (2006). *Ethics of emerging technologies*. Hoboken: Wiley.
- Burdick, A., & Willis, H. (2011). Digital learning, digital scholarship and design thinking. *Design Studies*, 32, 546–556.
- Button, M., Nicholls, C. M., Kerr, J., & Owen, R. (2014). Online frauds: Learning from victims why they fall for these scams. *Australian & New Zealand Journal of Criminology*, 47(3), 391–408.
- Büyükbaykal, C. I. (2015). Communication technologies and education in the information age. *Procedia – Social and Behavioral Sciences*, 174, 636–640.
- Çelikkaya, T. (2013). Sosyal bilgiler öğretmenlerinin öğretim araç gereç ve materyallerini kullanma düzeyleri (The application levels of instructional tools and materials by social studies teachers). *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi*, 32(1), 73–105.
- Chipeta, J. (2018). A review of e-government development in Africa: A case of Zambia. *Journal of e-Government Studies and Best Practices*, 2018, 1–13.
- Daştan, İ., & Efiloğlu Kurt, Ö. (2016). An empirical research about determining the factors effecting e-government adoption: Evidence from Yalova. *Ege Academic Review*, 16(1), 95–107.
- Demirdöğmez, M., Gültekin, N., & Taş, H. Y. (2018). Türkiye’de e-ticaret sektörünün yıllara göre gelişimi (Development of e-commerce sector in Turkey by years). *International Journal of Society Researches*, 8(8), 2216–2237.

- Demirli, C., Demirkol, M., & Varol, F. (2011). E-Okul veli bilgilendirme sistemine ilişkin veli görüşleri (Parents' views towards the E-Okul parent information system). 6th International Advanced Technologies Symposium (IATS'11), Elazığ, pp. 38–41.
- Ekinci, T. A. (2018). Türkiye'nin e-devlet görünümüne uluslararası göstergelerden bir bakış (A looking at Turkey's e-government profile by international indicators). *Pamukkale University Journal of Social Sciences Institute*, 32, 333–351.
- Emejulu, A., & McGregor, C. (2019). Towards a radical digital citizenship in digital education. *Critical Studies in Education*, 60(1), 131–147.
- Engin, A. O., Tösten, R., & Kaya, M. D. (2010). Bilgisayar destekli eğitim (Computer based instruction). *Journal of the Institute of Social Sciences*, 5, 69–80.
- Erdal, M. (2004). *Elektronik devlet, E-Türkiye ve kurumsal dönüşüm*. İstanbul: Filiz Kitabevi.
- Erdal, K. (2015). The use of computer and internet in children's book. *The Journal of International Social Research*, 8(38), 711–719.
- Eşgi, N. (2013). Comparison of digital native children's and their digital immigrant parents' perceptions related to internet addiction. *Hacettepe University Journal of Education*, 28(3), 181–194.
- Fowler, J., & Noyes, J. (2017). A study of the health implications of mobile phone use in 8–14s. *DYNA*, 84(200), 228–233.
- Güngör, S. (2014). E-democracy: Opportunities and risks. *İletişim Kuram ve Araştırma Dergisi*, 39, 68–89.
- Gürses, F., & Engin, M. (2016). Mobile government applications in local governments in Turkey: An empirical study on metropolitan municipalities. *Suleyman Demirel University The Journal of Faculty of Economics and Administrative Sciences*, 21(1), 223–234.
- Hui, B., & Campbell, R. (2018). Discrepancy between learning and practicing digital citizenship. *Journal of Academic Ethics*, 16, 117–131.
- John, K. (2008). The benefits of society online: Economic opportunity. In K. Mossberger, C. J. Tolbert, & R. Mc Neal (Eds.), *Digital citizenship* (pp. 21–47). Cambridge, MA: MIT Press.
- Jones, L. M., & Mitchell, K. J. (2015). Defining and measuring youth digital citizenship. *New Media & Society*, 18(9), 2063–2079.
- Jwaifell, M. (2018). The proper use of technologies as a digital citizenship indicator: Undergraduate English language students at Al-Hussein Bin Talal University. *World Journal of Education*, 8(3), 86–94.
- Kara, M., & Yanık, C. (2016). State-citizen interaction in Turkey with respect to societal dimension of communication. *Çankırı Karatekin University Journal of The Faculty of Economics and Administrative Sciences*, 6(2), 149–176.
- Kavak, Y., Arık, G., Çakır, M., & Arslan, S. (2016). FATİH projesinin ulusal ve uluslararası eğitim teknoloji politikaları bağlamında değerlendirilmesi (Evaluation of the FATİH project in the context of national and international education technology policies). *Journal of Research in Education and Teaching*, 5(2), 308–321.
- Kubat, U. (2018). Fen bilgisi öğretmenlerinin kullandıkları araç gereçler ve kazanımlara uygunluğu (The tools used by science teachers and their relevance to objectives). *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 43, 63–76.
- Kuran, N. H. (2005). *Türkiye için e-devlet*. İstanbul: İstanbul Bilgi Üniversitesi Yayınları.
- Kuyucu, M. (2017). Gençlerde akıllı telefon kullanımı ve akıllı telefon bağımlılığı sorunsalı: "akıllı telefon(kolik)" üniversite gençliği (Use of smart phone and problematic of smart phone addiction in young people: "Smart phone (colic)" University Youth). *Global Media Journal TR Edition*, 7(14), 328–359.
- Machova, R., & Lnenicka, R. (2016). Modelling e-government development through the years using cluster analysis. *JEDEM*, 8(1), 62–83.
- McLuhan, M. (1989). *The global village*. New York: Oxford University Press.
- Meyers, E. M., Erickson, I., & Small, R. V. (2013). Digital literacy and informal learning environments: An introduction. *Learning, Media and Technology*, 38(4), 355–367.

- Mustafaoğlu, R., Zirek, E., Yasacı, Z., & Razak Özdiñçler, A. (2018). The negative effects of digital technology usage on children's development and health. *Addicta: The Turkish Journal on Addictions*. Advance online publication. <https://doi.org/10.15805/addicta.2018.5.2.0051>.
- Nkotagu, G. H. (2011). Internet fraud: Information for teachers and students. *Journal of International Students*, 1(2), 72–75.
- Noonan, C. F., & Piatt, N. (2014). *Global social media directory a resource guide*. Richland: Pacific Northwest National Laboratory. Prepared for the U.S. Department of Energy under Contract DE-AC05-76RL01830.
- Oladimeji, Y. L., Folorunso, O., & Taofeek, A. (2011). Computer in the information age. *International Journal of Research and Reviews in Computer Science*, 2(2), 492–496.
- Park, C., & Park, Y. R. (2014). The conceptual model on smart phone addiction among early childhood. *International Journal of Social Science and Humanity*, 4(2), 147–150.
- Poushter, J., Bishop, C., & Chwe, H. (2018). *Social media use continues to rise in developing countries but plateaus across developed ones*. Washington, DC: Pew Research Center.
- Prensky, M. (2001). *Digital game based learning*. New York: McGraw-Hill.
- Ribble, M. (2009). *Raising a digital child. A digital handbook for parents*. Washington, DC: ISTE.
- Ribble, M. (2015). *Digital citizenship in schools*. International Society for Technology in Education, Washington DC.
- Ribble, M. S., & Bailey, G. D. (2004). Digital citizenship focus questions for implementation. *Learning & Leading with Technology*, 32(2), 12–115.
- Rocheleau, B. (2007). *Case studies on digital government*. Hershey: Idea Group Publishing.
- Santepeci, M., Durak, H., & Seferoğlu, S. (2016). Öğretmenlerin öğretim teknolojileri alanında hizmet-içi eğitim gereksinimlerinin FATİH projesi kapsamında incelenmesi (Examination of teachers' in-service training needs in the field of instructional technology: An evaluation in light of applications implemented at FATİH project). *Turkish Journal of Computer and Mathematics Education*, 7(3), 603–620.
- Selwyn, N. (2013). *Education in a digital world*. London: Routledge.
- Tatlı, C., & Kılıç, E. (2013). Etkileşimli tahtaların kullanımına ilişkin alınan hizmetçi eğitimin öğretmen görüşleri doğrultusunda değerlendirilmesi (Evaluation of in-service training related to usage of interactive white boards based on teachers' perception). *Educational Sciences and Practice*, 12(24), 137–158.
- Turan, M., & Polat, F. (2009). E-ticaret programcılığı ve e-ticaretin Türkiye'deki uygulamaları (e-trade programming and e-trade applications in Turkey). *Çukurova Üniversitesi İİBF Dergisi*, 13(2), 55–71.
- Ulusoy, A., & Bostancı, M. (2014). Children's social media use and the role of parents. *International Journal of Social Sciences*, 28, 559–572.
- Uzgun, B. Ç., & Aykaç, N. (2016). Bilişim teknolojileri ve yazılım dersi öğretim programının öğretmen görüşlerine göre değerlendirilmesi ege bölgesi örneği (The evaluation of information technologies and software course's curriculum according to the teacher's ideas). *Mustafa Kemal University Journal of Social Sciences Institute*, 13(34), 273–297.
- Yalçın, H., & Duran, Z. (2017). Children's communication vehicles and the use of the internet and family-child internet addiction levels. *Turkish Studies*, 12(23), 219–236.
- Yeşiltepe, G. M., & Erdoğan, M. (2013). İlköğretim bilişim teknolojileri öğretmenlerinin mesleğe yönelik sorunları, bu sorunların nedenleri ve çözüm önerileri (The problems of information technology teachers in primary schools, reasons and solutions of these problems). *GÜJGEF*, 33(3), 495–530.
- Yılmaz, M. (2017). E-government and e-democracy applications in the scope of new public administration in Turkey. *The Journal of International Scientific Researches*, 2(8), 54–61. <https://www.tarimorman.gov.tr/Haber/1656/Tarim-Ve-Orman-Bakani-Bekir-Pakdemirli-Ciftimiz-Sabah-Kalktiginda-Bizi-Yaninda-Gorecek>.