DIGITALEDUCATIONREVIEW

Citizens' reflections on an open, distance intergenerational program for online risk prevention

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ABSTRACT

Online risks are a concern for citizens in the digital society. Many sectors of the population lack training to face, prevent and solve problematic situations arising from Internet use. University researchers and innovation agents in small towns in southern Spain are carrying out an educational programme of 13 intergenerational workshops to strengthen digital competence and citizenship involving 239 participants. The main objective of this article is to describe and interpret shared reflections on various problematic situations related to the use of the Internet and technology. A content analysis of 864 reflections and experiences contained in seven dimensions and 31 categories is carried out. The results show that the participating citizens are characterised by a high awareness of online risks, they tend to seek help and concrete solutions on issues related to data security, excessive use of mobile phones and online scams and frauds. We propose the need for training to develop a fully digital, responsible and tech-savvy citizenship and an integrated digital model of education focused on protecting the well-being and online rights of citizens.

KEYWORDS: Digital citizenship-Digital education; safe and responsible use of Internet; intergenerational program; open education

1 INTRODUCTION

Full exercise of digital citizenship currently demands sufficient, appropriate digital competences, which not only bring numerous benefits and services to citizens but also lead to safe use of technology. As Internet users, citizens in the digital society must assume a critical, responsible, sustainable attitude when using this technology.

The public health emergency and lockdown experienced by the global population has marked a clear before and after in the role technology plays in all areas of people's everyday lives: education, work, leisure, socialization, shopping, healthcare services, and culture (European Commission, 2021; Levin & Mamlok, 2021). Many habits have changed, and dependence on technology has increased. Additional risks and problems associated with Internet have also increased and require educators' attention, in both the formal and informal sphere.

This reality poses new challenges to education policies. It requires design and application of methodologies and actions to bring training to orient people to the potential that Internet offers in the digital society and prevent personal risks to the health and security of those exposed to everyday Internet use.

To address the challenge presented, this article describes and analyzes the reflections of citizens in an open, online intergenerational program conducted within the framework of the project Development and Optimization of Intergenerational Education Actions to Promote Responsible Internet Use (EduACD).

2 CONCEPTUAL FRAMING

2.1 Digital citizenship

Digital competences for the development of a competent digital citizenry strengthen resilience in digital environments. Acquiring competences requires knowledge, skills, and attitudes that enable critical analysis of the content accessed through Internet (Reynolds & Parker, 2018). Jenkins (2009) defined digital citizenship as the set of practices performed through digital networks that enrich democracy in the 21st century. Mossberger (2010) and Mossberger et al. (2012) define digital citizenship, cyber-citizenship, or e-citizenship as the citizen's ability to live a life integrated into and participating in online society when using Internet frequently. To be considered a digital citizen, one must have access to Internet, know how to handle the tools and devices, and recognize the Internet's utility. Digital citizenship thus implies using technology as a means to obtain trustworthy, ethical, socially relevant information. It also implies possessing knowledge and skills related to the digital world, and exercising effective appropriate practices for use and ethical standards for socially acceptable online behavior to help avoid risks through safe, responsible, informed practices (Ribble et al., 2004; Gallego-Arrufat et al., 2019).

Digital ethics, information and media literacy, participation and commitment, and a critical attitude (among other skills) are comprehensive, interconnected categories in the construction of digital citizenship (Choi, 2016). They are acquired in processes of lifelong self-learning and training. Yet the data reveal a situation we cannot ignore. Due to the increase in Internet use during the pandemic, a high percentage of citizens—independently of their age, location, or social condition—lack sufficient digital competences. At the beginning of 2019, 40% of Europeans perceived themselves as having an insufficient level of digital skills, and 22% had none, indicating great vulnerability to online risks. In addition, the European Eurostat report (2021) showed that 89% of the European Union's citizens ages 16-74 used Internet, and 92% of households had access to it. These data show, however, that

having an Internet connection and spending many hours surfing the Internet do not guarantee better digital literacy to face and solve problems related to the security of devices and the risks of improper use. Rather, this situation contributes to expanding the digital generation gap or polarization when technology penetrates everyday life and becomes essential (Leek & Rojek, 2023), generating risks of social exclusion.

It is thus a social imperative for citizens to have the necessary competences to use Internet safely and responsibly. To achieve this goal, we must recognize—as Morris and Brading (2007) indicate—that mere physical access to Internet is insufficient unless access is linked to digital education programs. Training programs that will be important to navigate online in a comfortable way and that respond to the changes and dynamics that today's society poses to citizens who use the Internet (Ascencio et al., 2019).

2.2 Intergenerational Programs

Intergenerational practices are any activity or action that fosters cooperation, interaction, and exchange among persons of different generations that enable mutual support by sharing their talents and resources to benefit both each individual and the group. Such practices promote positive interactions among users of different ages, providing networks for support and learning (Moral, 2017). They offer an experience that improves and enables learning from shared experience while simultaneously connecting to the community (Breck et al., 2018; Gamliel, 2017; Teater, 2016). An intergenerational program for social sustainability requires cooperation and collaboration, not only from individuals but also from institutions within a specific context (Oropilla & Ødegaard, 2021).

Sharing education in intergenerational groups involves development of socio-communication-related, emotional, and axiological competences that ground the theoretical model of citizens' literacy in the new digital culture. Various cultures have a tradition of literature on educational actions through technology-mediated intergenerational contact (Arpino et al., 2020; Gamliel, 2017; Gilligan et al., 2020; Leek & Rojek, 2023; Murayama et al., 2019). Such literature also informs us of the importance of education, information, and awareness raising to foster digital citizenship (Pozas et al., 2018) based on the theory of ecological systems (Brown & Strommen, 2018) or practical initiatives that attend problems associated with cyberbullying, sexting, and excessive technology use in places such as households, classes, or communities where people connect their digital identities to their existence (Lewis, 2016).

2.3 Safe, responsible Internet use

Safe, responsible everyday Internet access and use are an important indicator for achieving the sustainable development goals that focus on inclusion. While their role in the protection of well-being and digital rights is related to dependence on the use of Internet and technology, this indicator also exposes the social and generational digital gap, deterioration of social relationships, emergence of health problems, and negative impact on protection of the environment.

For education, it is important to analyze Internet use in questions associated with responsible use and safety, due to the emergence of countless risks (Smahel et al., 2012). These risks range from questions that affect the personal sphere (Internet addiction, fraud, etc.) to risks that become problems affecting users' family, school, and social spheres, such as cyberbullying, sharenting, sextorsion, and false advertising. According to Valencia-Ortiz et al. (2021), this problem associated with the inappropriate use of mobile phones and the Internet should not only be addressed from a frontal point of view by the school, but in a holistic manner, it can consider holding workshops for parents and children on the use of social networks and the problems and risks that this entails.

It is normal that with the pace at which technology is advancing, problems related to the use of the Internet are also increasing. To address these problems, policies, initiatives, and programs are designed for education and prevention (Bağatarhan & Müge, 2017). That is why the educational approach for safe and responsible use is relevant and necessary for citizenship in today's society.

Ribble et al. (2004) propose that cyber citizenship must include information about risks and how to prevent them. Training people to be knowledgeable about the limits of their rights relative to others and their own obligations involves paying attention to what occurs with people and their attitudes, not only avoiding risks to users but also developing citizens' competences. These issues require responsible technology use.

To determine what is done in this field, studies of digital education enable researchers to recognize problem situations experienced by individuals or groups. It is essential to involve families and the community as a whole to achieve effective digital education (Sánchez-Valle et al., 2017) and education that produces critical citizens. Raising awareness and education are priorities (Torres-Hernández et al., 2019), key elements for collaboration and responsibility in technology use. The study by Steinfeld (2021) demonstrates conclusively the close relationship between families and teachers in mediation for education about digital security.

In the current environment's special pandemic situation, this study addresses the following question: What reflections about online risk shared by citizens during the open workshops in the intergenerational program orient people and serve as the basis for a model of digital education of citizens?

3 METHODOLOGY

3.1 Case study: workshops in an open, online intergenerational pandemic environment

This qualitative study is an exploratory case study that seeks to investigate the issue underlying the topic it analyzes. Its goal is to analyze citizens' reflections (stories, comments, opinions, questions) about experiences associated with risks and problems due to use of technology and Internet. The study was conducted within the framework of the R&D&I project EduACD and is based on collaboration between the academic and municipal sectors to promote safe, responsible Internet use. University researchers and local agents for innovation participated in design and development of the workshops, whose content focused on safe, responsible Internet use. The workshops lasted 60 minutes each.

Each workshop was planned in three stages: recruitment of evaluation of the workshop. Each workshop focused on one of the following topics: Internet addiction, digital safety, protection of data on social networks, and consumer protection on Internet, although

other related topics sometimes arose because the citizens shared reflections openly. Figure 1 presents the sequence of activities conducted in the workshops, which serve to collect information on the citizens' reflections studied in this article.

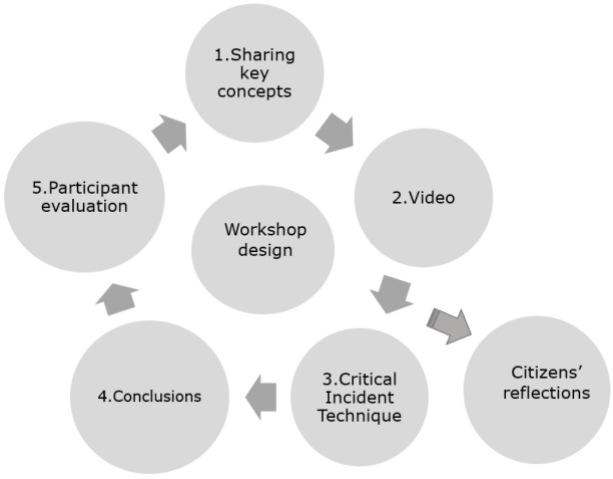

Figure 1. Research Procedure

The first activity is an introduction that explains basic concepts to orient the participants to and raise awareness of the topic. Second, participants view an educational video on the risk analyzed. The third activity elicited attendees' moderated participation through critical incident technique (Flanagan, 1954) to facilitate their contribution of reflections, questions, and experiences based on the material presented in the first part, the content of the video, and their own experiences, as well as their sharing of advice and recommendations. The reflections analyzed in this study are interventions about participants' own perception or experience, narrated spontaneously as prompted by critical incident technique. The workshop concludes with useful advice for preventing risks and problems associated with Internet use.

During five months of the Covid-19 pandemic in 2020, a total of 13 online workshops were conducted, in which 239 participants in 35 localities generated narrative reflections, which this article analyzes. In each workshop, participants of different ages mingled in the workshop's synchronous online environment. They had varied sociodemographic characteristics (Andalusian; from rural and urban municipalities; adults; and users of centers for digital competences, open innovation, and Internet access, termed Guadalinfo centers).

The workshops used critical incidents technique (Figure 1), with open questions geared toward inducing reflection appropriate to the topic of each workshop (addiction, safety, data protection, consumption). For example, What problems are tackled in the video? Is there really only one problem posed in this case? What type of feelings are revealed in each of the participants in the story? How do the different people act? Could they act differently? What would you propose? What recommendations would be useful? Are there more alternatives? How important is it to take measures when facing situations like those proposed in the video? Why? We analyzed the transcriptions of the oral interventions of the participants in each workshop, which ranged from 11-21 citizens, distributed as follows: 102 participants (5 workshops on addiction), 60 participants (4 workshops on safety), 54 participants (2 workshops on data protection), and 13 participants (1 workshop on online consumption).

4 III. FINDINGS

4.1 Integrating reflections on online risk prevention

The process conducted to construct dimensions involved participation of the project researchers through content analysis (Bardin, 1986). First, the researchers read six transcripts, duly anonymized and chosen as a sample to obtain an initial approximation. In this initial stage, each researcher analyzed the transcripts independently. The main dimensions for analysis were then identified through an inductive procedure. The second stage tackled definition of the emerging dimensions and categories in two cross-referencing and validation sessions. This stage established by consensus the system of dimensions and categories to be used in the third stage of topical content analysis (Table 1). The analysis incorporated open coding, axial coding, and specification and modification of codes (Strauss, 1987; Gamliel, 2017).

Seven dimensions were defined: experiences, questions/doubts, advice, problems associated with Internet use, risks (indicators), technology (devices, applications, and Internet content), and networking exchange with others. As a whole, we classified 31 categories or subdimensions.

The dimensions (experiences, questions, doubts, and advice) were defined using the inductive method based on the participants' reflections, opinions, and comments on the topic of each workshop (addiction, safety, data protection, and online consumption). The participants considered the contributions to understand and document people's experiences and transform them through testimonies into reflective and critical thinking processes (Souza & Rodrigues, 2022) and continuous reconstruction of practical, intellectual, and affective questions that arose when participants listened to others and raised doubts and questions, or gave advice (Roth, 2014). The theoretical grounding for the dimensions of problems associated with Internet use and risks, technology use, and networks for socializing was based on studies by Byrne et al. (2016), Buxarrais (2016), Cáceres et al. (2017), Gulligan et al. (2020), Martínez et al. (2013), Livingstone et al. (2021), Qian et al. (2022), Schomakers et al. (2019), and Torres-Hernández et al. (2022).

Dimensions	Code	Subdimensions	Code
Experiences	EXP	Reflections	REF
		Stories	STO
		Emotional reactions	REA
Questions/Doubts	QD	Questions/Doubts	QD
Advice	ADV	Preventing incidents	PIN
		Increasing confidence and responsible awareness	ICR
Problems associated with Internet use	PRO	Cyber-crime	CYB
		Duplicating SIM cards	DUP
		Online fraud	OFR

		Phishing	PHI
		Theft of data	ROB
		Spam	SPA
		Excessive use	EXU
		Safety	SAF
Risks. Indicators	RSK	Decisions that pose a safety risk	DEC
		Data sharing	DSH
		Permission to use applications	PER
		Microphone	MIC
		Camera	CAM
		Use of cookies	COO
		Public WiFi	WIF
Technology	TEC	Cell phone	CPH
		Computer	CMP
		Other devices (Smart watch, tablet)	OTH
		Applications/Programs	APP
		Web pages	WEB
		Email	EML
		Other digital content	ODC
Networking exchange	NET	Family	FAM
		Education network	EDU
		Community network	CMN

Table 1. System for analyzing citizens' reflections on online risk

The content of the interventions was analyzed qualitatively (Hsieh & Shannon, 2005) based on the system of categories created in the program MAXQDA 2022©. All records were identified by a composite code whose first data item was the number of the workshop (TX), followed by the number of the participant intervening (PX). The third element of the code was composed of the respective dimension (EXP, QD, etc.) and category (REF, STO, etc.).

Taking the study goal and research question into account, we present the results for each dimension. The participants contributed a total of 334 interventions in the form of reflections and experiences, sharing problems they faced in their everyday Internet use. They also posed questions related to cyber security and advice for safe, responsible Internet use. We recorded 864 codes, distributed across the seven dimensions, as shown in Figure 2.

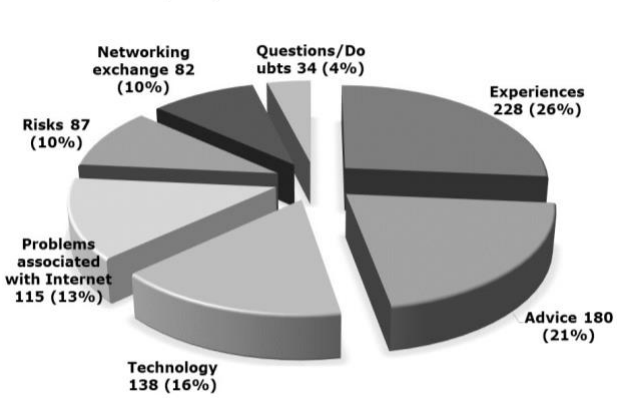

Figure 2. Results

The dimensions with most records were those referring to experiences and advice (26% and 21%, respectively), which together constituted approximately half of the records. These dimensions were followed by technology, which included issues concerning devices, applications, and digital content (16%). Problems associated with Internet and risk indicators made up 13% and 10%, respectively, a percentage similar to that of networking exchange (10%), whereas doubts and questions made up barely 4% of the total records. We now analyze the results this order.

4.1.1. Experiences

Excessive time spent using various devices emerges as one of the fundamental themes in the analysis. Participants definitely realize that they make intensive use of their cell phones for work, leisure, and other functions. In association with this use, they reflect on the balance between the risks and benefits involved in using technology: "*The cell phone has many applications and benefits, which also have their drawbacks. We must be able to assume the risk, although it has benefits and also some secondary effects" [T10AIL_EXP_REF].*

Concern about privacy and how to protect personal data properly is another common topic of reflection, as is use of cookies. The citizens participating expressed the disadvantages of constantly having to configure cookies: "*You reject everything just fine, and when you go back to that page they ask you to again, almost every time you do, and finally everyone accepts, just for convenience" [T10AIL_EXP_REF].*

Experience with minors using technology—especially the cell phone—leads participants to comment on issues related to the changes in habits due to the Covid-19 pandemic, which participants perceive as having contributed to a more sedentary form of leisure. Since the pandemic, they use Internet much more for leisure,

games, and watching series and movies. The example adults provide is important: "*We parents have to be aware of our role as models" [T3P2_EXP_REF].*

Participants recount various experiences and incidents related to cybersecurity and agree that they are increasingly frequent: "*Even if we have not experienced cyberattacks directly, most of us know of cases close to us in which people have been victims of a cyberattack" [T9DIN_EXP_STO].*

The records show emotions and feelings that reflect concerns, feelings of impotence, or guilt for not knowing whether one has managed technology properly, especially when minors are involved: "*I've given up because they don't listen to you. This creates terrible tension, and you realize it's impossible" [T10P1_EXP_REA].*

4.1.2. Advice

The participants share advice and suggestions based on their own experience on how to use devices more safely against possible threats. For example: 2*It's important to have an anti-virus on your phone because it also protects against unauthorized access from other webpages that can access confidential information" [T2P7_ADV_PIN].*

Participants also share recommendations on how to control applications that are running in the background (an action not generally known to the participants) and on the permission many applications request to access devices' camera, microphone, or geolocation. Citizens are motivated to search for information and education on this topic in order to avoid risks:

> *It's true that we don't have enough education or information [T6DIN_ADV_ICR]. We have to be careful of what we are really allowing so that the developers of these applications cannot access this information, because we don't know what they are going to do with it [T7DIN_ADV_PIN].*

Concern about minors' cell phone use is also a recurring topic. Participants speak of the awareness one must have when giving information to groups of peers or other groups. They agree that parental mediation must always be accompanied by other measures: "*There is a need to give children leisure alternatives that do not involve using electronic devices" [T3P2_ADV_ICR].*

They provide advice to prevent incidents, referring specifically to configuration of cookies:

> *When you accept a cookie, you are accepting that your data will be subject to treatment and analysis to manage advertising, create profiles, and sell the data to third-party companies—that is, you are accepting all of this. This is why it's important to read the information [T5DIN1_ADV_PIN].*

Participants with experience support the guidance they give on configuration of privacy and security on devices: "*Trying to have very secure passwords, which combine capital and lowercase letters with a comma or period or a dash somewhere. Making sure the password does not include any personal data that relates us to it" [T11DIN_ADV_ICR].*

They affirm the importance of searching for information and improving handling of technology through trial and error. Making tests and learning from mistakes is one way of gaining confidence in handling technology, and such actions can also prevent incidents: "*Digital education doesn't happen by itself; you have to work at it" [T1P6_ADV_ICR].*

4.1.3. Technology

On this dimension, participants consider that the increasingly frequent use of technology in all areas of life must have some limits. They reflect on the general use of applications as it relates to safety with downloads and options for configuring them. The participants say that they mainly use their cell phones, as well as the application WhatsApp©. The older adults indicate that before the pandemic they used the cell phone for basic communication but that the lockdown forced them to use this WhatsApp© more. With the support of their close circle of friends and relations, they learned basic use of WhatsApp© for videoconferences. The user level that permits receiving (not making) calls on the cell phone limits their knowledge of questions of security and netiquette: "*We have no clear idea of how little security we are working with when we start to use the cell phone" [T6P2_TEC_CPH].*

Participants mention using social media and platforms that provide streaming and online videogame services in relation to management of time spent using them: "*It happens to me a lot (…) Sometimes my break from Internet ends up being the time I study for an exam" [T1P5_TEC_WEB].*

As to the essential strategy for mediating technology use, participants advocate spending more time with minors when they are on Internet: "*How you use the tool you have is based on the possible uses you know about. So when they are under age, they need you to be with them" [T1P6_TEC_APP].*

4.1.4. Problems associated with Internet use

Analysis of this dimension allows us to observe the problems the participants identify most frequently: cybercrime, duplication of SIM cards, online fraud, phishing, data theft, spam, excessive technology use, and failure of security. That these problems occur is clear from the experiences participants have had and share—problems due to use of cell phone and data after accepting cookies when surfing the Internet. They identify problems when they become aware of them:

> *The first time I consulted use time on an application, (...) I asked myself if I really wanted to devote so much time to the app and how it was possible that I could spend so much time on it and not do other things I liked to do [T10DIN_PRO_EXU].*

They describe other associated problems that result from excessive use, problems that affect their health and interpersonal relationships:

> *I had a problem with tendinitis in my right hand because of all the time I was using the cell phone, (…) and I have friends I stopped seeing because they don't pay any attention to you and are always on their phones [T10P2_PRO_EXU].*

The citizens' repeat the same problems in their reflections on the problem of cybercrime, more specifically in topics such as identity theft, data theft, and online fraud: *It has happened to a lot of people in our town. "They received messages telling them that they have*

to pay a small amount of money so that they can receive a package. Many fell for the scheme and opened the link" [T5AIL1_PRO_CIB].

4.1.5. Risk indicators

In this dimension, participants enter into exchanges in which they become aware of observable risk indicators when they authorize permission for applications to access the contacts, camera, images, or microphone on their devices. After sharing personal data through applications or using open public WiFi, they decide—despite knowledge of the definite risks—to keep using an application, surf the Internet, or accept privacy policies without reading them first:

> *The problem is the convenience and rapid access to any web page [T10AIL_RSK_DEC]. A lot of people accept them without taking time to read what data they are sharing and with whom. And once they have information about you—this is one of the problems that creates the most worries, doubts, concerns, and inconveniences. These files are managing or gathering personal information that you have provided when you are using Internet [T11DIN_RSK_COO].*

The citizens also reflect on online risk due to the permissions granted to applications to use one's microphone, camera, or geolocation or to access personal information such as the contacts on one's personal calendar:

> *You already know that if you are searching for something on Internet, right away you get ads for that thing. But this doesn't only happen when you are searching. It also happens when you have only talked about it! Since we accept the cookies, often without paying attention, we give the microphone and camera access, and because of this we are being watched all the time [T5P12_RSK_MIC].*

Participants warn of the risk of using public WiFi and sharing data that can compromise our safety and damage our image, leaving a mark on our digital fingerprint:

> *When we connect to public networks or public WiFi, many WiFi networks are deceptive and are always open to cybercriminals [T11DIN_RSK_WIF]. It is very risky to share personal photos on Twitter© or any social network, especially if you have a public profile [T11DIN_RSK_PER].*

4.1.6. Networking exchange

The experiences and reflections shared by the participants recognized that networks involving close exchange among users are an important support scaffold for help and collaboration in digital education. They do not describe reflections as isolated experiences, but as the result of this networking exchange with friends, family, and peers:

> *If you don't know how to do it, you have to ask an adult or someone you know, or our agents at the centers, who are excellent computer scientists and excellent people willing to have us to approach them and ask them [T11DIN_NET_EDU].*

These networking exchanges sometimes require observation and imitation of what others do:

> *Young people and children are guided more by what they see than by what they hear [T4DIN_NET_FAM]. If children see their family on the cell phone, they will use it too. It is important, therefore, that the rules are established by the families who come to the primary and secondary schools, but also to us, to 21st-century society as a whole [T6AIL1_NET_FAM].*

Participants also speak of interesting two-way intergenerational learning in which the youngest generation teaches and advises adults on how to use applications and devices: "*There are also many things I can't use, and my children sometimes explain them to me and I learn, because I am 69 and it's not the same as when I was 20" [T6P1_NET_FAM].*

The role of parental mediation is also a challenge: "*We play a very important role as mediators of the use our children make of the Internet. This is challenging because we are mediators but did not grow up immersed in a technological society as they did" [T4DIN_NET_FAM].*

4.1.7. Questions/doubts

Constituting only 4% of the records, this dimension involved questions posed to confirm or obtain new knowledge and skills for handling technology or clarifying doubts about some topic discussed that the participants had not understood fully. In addition to the dimensions described above, we find questions about IMEI code, guidelines for how to act if one's identity is stolen, and recommendations on programs (anti-virus and parental control, among others): "*When you have managed the cookies on a web page and return to that page, do you have to manage the cookies again—that is, do you have to manage the cookies every time you visit the page?" [T5P4_QD]*

5 CONCLUSION AND DISCUSSION: AN EDUCATIONAL MODEL FOR CITIZENSHIP

Digital citizenship requires developing digital competences that enable safe responsible, sustainable, healthy Internet use, while taking maximum advantage of the opportunities this technology provides and minimizing the risks associated with its use. The intergenerational education program on online risk provided workshops in the form of proposals for training designed to be adapted to the circumstances imposed by the Covid-19 pandemic (Gilligan et al., 2020; Arpino et al., 2021; Qin et al, 2022).

This study's descriptive, interpretive focus enabled us to provide a general overview of the reflections, experiences, opinions, concerns, questions, and advice we sought to analyze. The interactions among the participants during the open online workshops provided a great quantity of interesting, varied qualitative information. The stories emerged naturally and fluidly, with a total of 864 coded interventions.

The participating citizens who mingled in the synchronous online environment of the workshops were generally diverse in age, place of origin, and characteristics, although there were more adults than young people and minors, in line with the study by Chonody and Wang (2013). All participants were interested in improving their confidence and learning about responsible Internet use, as proposed by Gamliel (2017) and Breck et al (2018), among others.

Internet use provides multiple benefits to digital citizens, but, as the participants in this program describe, it is also associated with multiple risks to health, safety, and the use of devices that are (among other issues) identified in product records of the participants' interactions, results that agree with those of Smahel et al. (2012). The problem of how much time is spent using Internet concerns many participants, and this time increased significantly during the pandemic (Lobe et al, 2021). The participants were especially concerned about the personal data that are gathered through cookies and the common practice of accepting cookies without first reading about their consequences, due to the difficulty of understanding all the information about them. Tackling the problem of understanding cookie policies, Graßl et al. (2021) and Kretschmer et al. (2021) agree that the process of configuring cookies is not easy to understand, leading the user to take uninformed decisions about it.

The results obtained in the analysis show the need for education to improve digital competences to develop full, responsible digital citizenship. This demand arises from practice and is promoted by supranational entities. The OECD (2019) describes how key characteristics such as development of digital skills can have a positive influence on our lives and the world around us. The Council of Europe's Digital Citizenship Education (DCE) program adopts a conceptual framework that classifies digital domains into being online, well-being online, and rights online (Council of Europe, 2019).

The conclusion that we lack knowledge about the risk associated with certain practices shows the need to bid for education to create a competent digital citizenry. Our study responds to this need by proposing a model for digital education generated by open online training and oriented to protecting citizens' well-being and rights online (Figure 3).

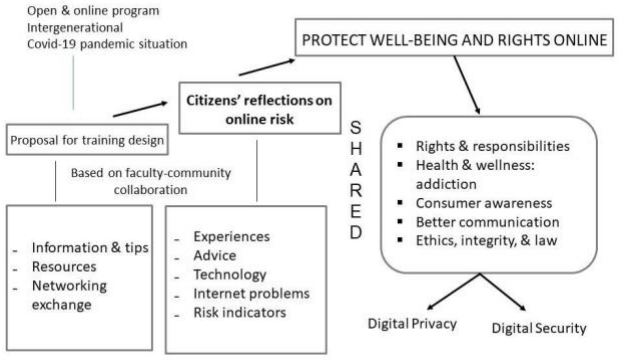

Figure 3. Model of Digital Education for Citizenship

This study starts from an open, online intergenerational program implemented in the context of the Covid-19 pandemic. The central area of the model shows the reflections shared in the educational proposals made, which are grouped into the dimensions generated in the thematic analysis. The main issues the workshop participants evaluated were experiences and advice, as well as issues involving technology, problems associated with Internet, and risk indicators. They reflected on these issues as agents of change that can contribute to promoting safer, more responsible use of Internet through shared reflections.

This model directed to protecting citizens' digital well-being and rights proposes education about online risks through inclusive, intergenerational design based on collaboration among universities and open municipal community centers for digital education and advice. The citizens' reflections focus above all on the domains of well-being online and rights online (rights and responsibilities, health and well-being, consumer awareness, and better communication, among others) within the European framework. Digital privacy and digital security—two different but interrelated concepts—are by far the most prominent. In this model of digital education, it is crucial to construct the shared structure, on the one hand, from information contrasted by experts, resources, and networking exchanges to improve knowledge and skills so that citizens know how to act in situations of risk online; and, on the other, from the citizens' own reflections about online risks. The workshop provides a common space for generation of knowledge about themes that are both being studied by the scientific community and form part of the concerns of the citizens who need digital education.

Ultimately, the model of open workshops about online risks provides a space for reflection on experiences, risks, and problems with Internet and technology use, and a way to present one's questions and concerns. It is a model for knowledge transfer to promote open, free, effective citizenship for digital education that benefits research, citizens, and digital society as a whole.

Acknowledgments

This research was funded by Operational Program FEDER 2014-2020/Andalusian Regional Government/Regional Ministry of Economic Transformation, Knowledge and Universities of Andalusia/Project B-SEJ-102-UGR18.

Support was also received from the Spanish Ministry of Education and Vocational Training (FPU17/05164 and FPU19/00505).

REFERENCES

Ascencio, P., Glasserman, L., & Quintana, J. (2019). Digital competences: Reality of Students Starting University Life. *Digital Education Review*, 39, 68-84. https://doi.org/10.1344/der.2019.36.68-84

Arpino, B., Pasqualini, M., & Bordone, V. (2021). Physically Distant but Socially Close? Changes in Intergenerational Non-Physical Contacts During the Covid-19 Pandemic among Older People in France, Italy and Spain. *European Journal of Ageing, 18*(2), 185-194. https://doi.org/10.1007/s10s433-021-00621-x

Bağatarhan, T., & Müge. D. (2017). Programs for Preventing Internet Addiction during Adolescence: A Systematic Review. Addicta: *The Turkish Journal on Addictions, 4*(2), 243-265. http://dx.doi.org/10.15805/addicta.2017.4.2.0015

Bardin, L. (1986). Análisis de contenido. Akal.

Breck, B., Dennis, C., & Leedahl, S. (2018). Implementing reverse mentoring to address social isolation among older adults. *Journal of Gerontological Social Work, 61*(5), 513-525. https://doi.org/10.1080/01634372.2018.1448030

Brown, L., & Strommen, J. (2018). Training Younger Volunteers to Promote Technology Use Among Older Adults. *Family and Consumer Sciences Research Journal, 46*(3), 297-313. https://doi.org/10.1111/fcsr.12254

Byrne, Z.S., Dvorak, K.J., Peters, J.M., Ray, I., Howe, A., & Sanchez, D. (2016). From the User's Perspective: Perceptions of Risk Relative to Benefit Associated with Using the Internet. *Computers in Human Behavior*, 59, 456-468. https://doi.org/10.1080/23738871.2017.1291698

Cáceres, D., Brändle, G., & Ruiz, J. (2017). Sociabilidad virtual: La interacción social en el ecosistema digital. *Historia y Comunicación Social, 22*(1), 233-247. https://doi.org/10.5209/HICS.55910

Choi, M. (2016). A Concept Analysis of Digital Citizenship for Democratic Citizenship Education in the Internet Age. *Theory & Research in Social Education, 44*(4), 565-607. https://doi.org/10.1080/00933104.2016.1210549

Chonody, J., & Wang, D. (2013). Connecting Older Adults to the Community Through Multimedia: An Intergenerational Reminiscence Program. *Activities, Adaptation & Aging, 37*(1), 79-93. https://doi.org/10.1080/01924788.2012.760140

Council of Europe (2019). Digital Citizenship Education Handbook. https://rm.coe.int/168093586f

European Commission (2021). 2030 Digital Compass: The European way for the Digital Decade. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52021DC0118

Eurostat (2021). Digital Economy and Society Statistics - Households and Individuals. Eurostat Statistic Explained. http://sl.ugr.es/0cAe

Flanagan, J. C. (1954). The Critical Incident Technique. *Psychological Bulletin, 51*(4), 327-358. https://doi.org/10.1037/h0061470

Gallego-Arrufat, M., Torres-Hernández, N., & Pessoa, T. (2019). Competence of future teachers in the digital security area.*Comunicar*, 61, 57-67. https://doi.org/10.3916/C61-2019-05

Gamliel, T. (2017). Education in Civic Participation: Children, Seniors and the Challenges of an Intergenerational Information and Communications Technology Program. New Media & Society, 19(9), 1388-1405. https://doi.org/10.1177/1461444816639971

Gilligan, M., Suitor, J. Rurka, M., & Silverstein, M. (2020). Multigenerational Social Support in the Face of the Covid-19 Pandemic. *Journal and Family Theory of Review, 12*(4), 431-447. https://doi.org/10.1111/jftr.12397

Graßl, P., Schraffenberger, H., Zuiderveen Borgesius, F., & Buijzen, M. (2021). Dark and Bright Patterns in Cookie Consent Requests. *Journal of Digital Social Research 3*(1). https://doi.org/10.33621/jdsr.v3i1.54

Hsieh, H., & Shannon, S. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research, 15*(9), 1277-1288. https://doi.org/10.1177/1049732305276687

Jenkins, H. (2009). Confronting the Challenges of Participatory Culture: Media Education for the 21st Century. The MIT Press. https://doi.org/10.7551/mitpress/8435.001.0001

Kretschmer, M., Pennekamp, J., & Wehrle, K. (2021). Cookie Banners and Privacy Policies: Measuring the Impact of the GDPR on the Web. ACM Transactions on the Web, 15(4). https://doi.org/10.1145/3466722

Leek, J., & Rojek, M. (2023). ICT Tools in Breaking Down Social Polarization and Supporting Intergenerational Learning: Cases of Youth and Senior Citizens. Interactive Learning Environments, 31(6), 3682-3697. https://doi.org/10.1080/10494820.2021.1940214

Levin, I., & Mamlok, D. (2021). Culture and Society in the Digital Age. Information, 12, 68. https://doi.org/10.3390/info12020068

Lewis, T. (2016). Artifacts as Stories: Understanding Families, Digital Literacies, and Storied Lives. Journal of Adolescent & Adult Literacy, 59(5), 511-513. https://doi.org/10.1002/jaal.506

Lobe, B., Velicu, A., Staksrud, E., Chaudron, S. & Di Gioia, R. (2021). How Children (10-18) Experienced Online Risks during the Covid-19 Lockdown - Spring 2020. Publications Office of the European Union. https://doi.org/10.2760/066196

Livingstone, S., & Stoilova, M. (2021). The 4Cs: Classifying Online Risk to Children. https://doi.org/10.21241/ssoar.71817

Martínez, E., García, A., & Sendín, J. (2013). Perception of Risk in the Network by Adolescents in Spain: Problematic Uses and Ways of Control. *Anal*, 48, 111–130. https://doi.org/10.7238/a.v0iM.1969

Moral, M. V. (2017). Intergenerational Programs and Social Participation: The Integration of Spanish and Latin-American Seniors in the Community. *Universitas Psychologica, 16*(1), 157-175. http://dx.doi.org/10.11144/Javeriana.upsy16-1.pips

Morris, A., & Branding, H. (2007). E-literacy and the Grey Digital Divide: A Review with Recommendations. *Journal of Information Literacy, 1*(3), 13-28. https://doi.org/10.11645/1.3.14

Mossberger, K. (2010). Toward Digital Citizenship. In P. N. Howard (Ed.). Routledge Handbook of Internet Politics (pp.173-185). Taylor and Francis.

Mossberger, K., Tolbert, C., & Hamilton, A. (2012). Measuring Digital Citizenship: Mobile Access and Broadband. *International Journal of Communication*, 6, 2492-2528. http://ijoc.org/index.php/ijoc/article/view/1777/808

Murayamama, Y., Murayama, H., Hasebe, M., Yamaguchi, J., & Fujiwara, Y. (2019). The Impact of Intergenerational Programs on Social Capital in Japan: A Randomized Population-based Cross-sectional Study. BMC Public Health, 19. Article 156. https://doi.org/10.1186/s12889-019-6480-3

OECD (2019). Future of Education and Skills 2030. OECD Publishing.

Qian, B., Huang, M., Xu, M., & Hong, Y. (2022). Internet Use and Quality of Life: The Multiple Mediating Effects of Risk Perception and Internet Addiction. *International Journal of the Environmental Research and Public Health,* 19, 1795 10.3390/ijerph19031795

Oropilla, C., & Ødegaard, E. (2021). Strengthening the Call for Intentional Intergenerational Programmes towards Sustainable Futures for Children and Families. *Sustainability*, 13, 1-23. https://doi.org/10.3390/su13105564

Qin, X., Yang, F., Jiang, Z., & Zhong, B. (2022). Empathy Not Quarantined: Social Support via Social Media Helps Maintain Empathy During the COVID-19 Pandemic. *Social Media+Society, 8*(1), https://doi.org/10.1177/20563051221086234

Reynolds, L., & Parker, L. (2018). Digital Resilience: Stronger Citizens Online. Institute for Strategic Dialogue. http://sl.ugr.es/0cGT

Ribble, M., Bailey, G., & Ross, T. (2004). Digital Citizenship: Addressing Appropriate Technology Behavior. *Learning & Leading with Technology, 32*(1). https://files.eric.ed.gov/fulltext/EJ695788.pdf

Roth, Wolff-Michael, & Jornet A. (2014). Towards a theory of experience. *Science Education*, 98, 106-126. https://doi.org/10.1002/sce.21085

Sánchez-Valle, M., de-Frutos-Torres, B., & Vázquez-Barrio, T. (2017). Parent's Influence on Acquiring Critical Internet Skills. *Comunicar*, 53, 103-111. https://doi.org/10.3916/C53-2017-10

Schomakers, E., Lidynia, C., Müllmann, D., & Ziefle, M. (2019). Internet users' perceptions of information sensitivity–insights from Germany. *International Journal of Information Management*, 46, 142–150. https://doi.org/10.1016/j.ijinfomgt.2018.11.018

Smahel, D., Helsper, E., Green, L., Kalmus, V., Blinka, L., & Ólafsson, K. (2012). Excessive Internet Use among European Children. EU Kids Online, LSE. http://eprints.lse.ac.uk/47344/

Steinfeld, N. (2021). Parental Mediation of Adolescent Internet Use: Combining Strategies to Promote Awareness, Autonomy and Self-regulation in Preparing Youth for Life on the Web. *Education and Information Technologies, 26*(2), 1897-1920. https://doi.org/10.1007/s10639-020-10342-w

Souza, V., & Rodrigues, A. (2022). Pesquisa e Inovação Responsáveis e narrativas digitais: promovedo. *Reflexões sobre Igualdade de Gênero. Journal of Education, 10*(3) 206-224. https://doi.org/10.25749/sis.26174

Strauss, A. L. (1987). Qualitative Analysis for Social Scientists. Cambridge University Press. https://doi.org/10.1017/CBO9780511557842

Torres-Hernández, N., Pessoa, T., & Gallego-Arrufat, M.J, (2019). Intervention and e-assessment with technologies of the competencein digital securityDigital *Education Review*, 25, 11-129. https://doi.org/10.1344/der.2019.35.111-129

Torres-Hernández, N., García-Martínez I., & Gallego-Arrufat M.J. (2022). Internet Risk Perception: Development and Validation of a Scale for Adults. *European Journal of Investigation in Health, Psychology and Education*, 12(11):1581-1593. https://doi.org/10.3390/ejihpe12110111

Teater, B. (2016). Intergenerational Programs to Promote Active Aging: The Experiences and Perspectives of Older Adults. *Activities, Adaptation & Aging, 40*(1). https://doi.org/10.1080/01924788.2016.1127041

Valencia-Ortiz, R., Cabero-Almenara, J., & Garay, U. (2021). Perception of trainers and students on the measures to be taken to solve the addiction of young people to social networks. *Digital Education Review*, 39. https://doi.org/10.1344/der.2021.39.141-158

REFLEXIONS DE LA CIUTADANIA EN UN PROGRAMA OBERT, ONLINE I INTERGENERACIONAL PER A LA PREVENCIÓ DE RISCOS ONLINE

Els riscos en línia són una preocupació per als ciutadans a la societat digital. Molts sectors de la població no tenen formació per afrontar, prevenir i resoldre situacions problemàtiques derivades de l'ús d'Internet. Investigadors universitaris i agents d'innovació de petites poblacions del sud d'Espanya fan un programa educatiu de 13 tallers intergeneracionals per enfortir la competència i la ciutadania digital en què participen 239 persones. Aquest article té com a objectiu descriure i interpretar reflexions compartides sobre diverses situacions problemàtiques relacionades amb l'ús d'Internet i la tecnologia. Es fa una anàlisi de contingut de 864 reflexions i experiències contingudes en set dimensions i 31 categories. Els resultats mostren que la ciutadania participant es caracteritza per tenir una alta consciència dels riscos en línia, solen buscar ajuda i solucions concretes en temes relacionats amb la seguretat de les dades, l'ús excessiu dels telèfons mòbils i les estafes i els fraus a línia. Proposem la necessitat de formació per desenvolupar una ciutadania plenament digital, responsable i coneixedora de la tecnologia i un model digital integrat deducació centrat en la protecció del benestar i els drets en línia per als ciutadans.

PARAULES CLAU: ciutadania digital; educación digital; ús segur i responsable d'internet; programa intergeneracional; educación oberta

REFLEXIONES DE LA CIUDADANÍA EN UN PROGRAMA ABIERTO, ONLINE E INTERGENERACIONAL PARA LA PREVENCIÓN DE RIESGOS ONLINE

Los riesgos en línea son una preocupación para los ciudadanos en la sociedad digital. Muchos sectores de la población carecen de formación para afrontar, prevenir y resolver situaciones problemáticas derivadas del uso de Internet. Investigadores universitarios y agentes de innovación de pequeñas poblaciones del sur de España llevan a cabo un programa educativo de 13 talleres intergeneracionales para fortalecer la competencia y la ciudadanía digital en el que participan 239 personas. El objetivo de este artículo es describir e interpretar reflexiones compartidas sobre diversas situaciones problemáticas relacionadas con el uso de Internet y la tecnología. Se realiza un análisis de contenido de 864 reflexiones y experiencias contenidas en siete dimensiones y 31 categorías. Los resultados muestran que la ciudadanía participante se caracteriza por tener una alta consciencia de los riesgos en línea, suelen buscar ayuda y soluciones concretas en temas relacionadas con la seguridad de los datos, el uso excesivo de los teléfonos móviles y las estafas y los fraudes en línea. Proponemos la necesidad de formación para desarrollar una ciudadanía plenamente digital, responsable y conocedora de la tecnología y un modelo digital integrado de educación centrado en la protección del bienestar y los derechos en línea para los ciudadanos

PALABRAS CLAVE: ciudadanía digital; educación digital; uso seguro y responsable de Internet; programa intergeneracional; educación abierta