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Investigating University Students' Conception and Perception of 'Digital Citizenship': ENSC Pre-service Teachers as a Case Study

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ABSTRACT:

We live in an era where the Internet occupies a major part in our lives. It is common knowledge nowadays that the world has turned to a small village and we are indeed its digital citizens. Similar to any society, net citizens exchange information, share responsibilities, and engage in different forms of interaction guided by certain social, cultural, and religious norms. Algerian university students, like all other students, use the internet for study and leisure activities. The aim of this paper is to investigate Algerian university students, more specifically Ecole Normale Supérieure of Constantine (ENSC) pre-service teachers' understanding of the concept 'Digital Citizenship' as well as their perceptions, practices, and the degree of their awareness of their rights and duties as digital citizens. Qualitative and quantitative data were collected through an online questionnaire administered to students of the English department at l'ENSC and answered by 102 students representing different grade levels. Results of the survey indicate that all participants in the study have easy access to digital tools primarily smart phones and personal computers. These two devices are respectively used for entertainment and study purposes. Though the majority of students indicated that the term 'Digital Citizenship' is new for them, they have shown an acceptable degree of awareness about appropriate and inappropriate behaviors in relation to internet and technology use. The study recommends that universities have to assume more responsibility of providing explicit instruction and training in technology use in order to increase students' digital literacy and at the same time raise their awareness about positive and negative consequences of such use.

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Introduction

No two persons would disagree about the importance of technology in the 21st century society. At home, schools, workplaces, and everywhere technology is accompanying us, providing unlimited services, and most importantly ensuring instant and easy access to information and social interaction. Despite the negative side effects that may arise out of ignorance or irresponsible use especially by youngsters, the advantages of technology and the Internet make them more than necessary in our lives, and call for more efforts to raise students' awareness about proper and effective practices. In this sense, Grizzle (2014) argued that it may be foolish to think that 'media and technologies give rise to more challenges than opportunities when clearly the benefits outweigh the drawbacks' (p. 17).Therefore, gaining knowledge and understanding of 'digital citizenship' is very important and should be given due attention by teachers and parents. Ribble and Bailey (2007) explained that digital citizenship is a 'way of life' which requires an understanding and appropriate use of digital technology. Likewise, the UNESCO Global Citizenship Education (as cited in Orsini-Jones & Lee, 2018, p. 8) gave a clear statement of the aims and attributes of the organization which intend to 'empower learners to engage and assume active roles, both locally and globally, to face and resolve global challenges and ultimately to become proactive contributors to a more just, peaceful, tolerant, inclusive, secure and sustainable world'.

Digital citizens can be of different age categories. Prensky (2001) differentiated between digital 'natives'; younger generation which is born and grown up with technology; and digital 'emigrants'; older generation, like parents and teachers who are trying to keep up with the quick advancement in technology and digital use. Recently, competences related to technology use are known as 'life skills' and have become 'both a requirement and a right' (Ferrari et al. 2012, p. 80). New technology has, throughout history, been responsible for many changes at different levels be it social, cultural or political (Berge, 2000).

Investigating students' digital citizenship has gained increasing importance worldwide; however, very few studies were conducted in the Algerian higher education context. This study, then, aims to shed light on the beliefs, attitudes, and practices relating to the concept of digital citizenship among ENSC pre-service teachers, therefore, bringing a small contribution to the understanding of this concept from the university students' perspective.

I. Review of the Literature

1. Definition of Key Concepts

Digital citizenship is defined by Zook (2019, online) as 'the responsible use of technology by anyone who uses computers, the Internet, and digital devices to engage with society on any level'. The key word in Zook's definition is 'responsibility' which entails knowing limits for one's actions and behaviors while interacting with others on the net. The same idea is shared by Ribble and Bailey (2007) who described digital citizenship as 'the norms of appropriate, responsible behavior with regard to technology use' (p. 10). In addition, being responsible means knowing one's rights and duties towards other members of the digital society. Digital rights are claimed by Kaye and Reventlow (2017) to be legal and human rights involving freedom of information and expression. Net users have the right of getting easy access to the Internet and information resources which can help them advance and change their lives for the better. At the same time, 'netizens' as described by Gatheji (2014), have the duty of showing respect to the others and protecting their security, privacy, and dignity.

In addition, the Digital Technologies Hub (DTH 2021, online) linked digital citizenship with the 'confident and positive engagement with digital technologies' and further defined a digital citizen as 'a person who has the knowledge and skills to effectively use digital technologies to communicate with others, participate in society and create and consume digital content'. Knowledge and skills, as pointed by DTH (2021), are pre-requisites to effective and positive digital citizenship. This set of skills is better coined as 'digital literacy' or 'digital competence' which are essential elements in digital citizenship.

Digital competence, according to Ferrari et al. (2012) is linked to many other types of literacy such as: Information and Communication Technology (ICT) literacy, Internet literacy, media literacy, and information literacy (p. 81). It further involves 'the confident and critical use of Information Society Technology (IST) for work, leisure and communication' (Ferrari et at al., 2012, p. 84).On the light of Ferrari's definition, being digitally competent means showing good command of all related elements such as the Internet, information and communication resources, and technological devices. Good knowledge will result in an appropriate and responsible use of technology for work and study activities or for entertainment and leisure purposes.

Considering the latter aspect, using technology for leisure and entertainment is very common among digital citizens. Social media, in particular, are attracting the attention of different age groups, though their impact seems to be less

intensive on 'emigrants' than on 'natives'. An important concept to be considered, therefore, is 'social media literacy'. The latter is defined by Gatheji (2014) as 'the ability to appreciate the risks posed by social media and to make calculated decisions when dealing with such social media in order to make a careful balance between the needs for sharing, privacy, and legal compliance' (p. 102). Gatheji (2014) argued that social media are based on 'sharing', but this sharing sometimes turns to 'oversharing' especially by young citizens, which can be harmful for them and for their intimate and private lives. Therefore, it is important to increase their social media literacy in order to help them make a balance between the need for sharing and at the same time the responsibility of protecting their privacy and that of the people around them.

2. Elements of Digital Citizenship

Ribble and Bailey (2007) identified nine elements of digital citizenship including: digital access, digital commerce, digital communication, digital literacy, digital etiquette, digital law, digital rights and responsibilities, digital health and wellness, and digital security.

a. *Digital Access*: being a digital citizen implies getting full and easy access to such electronic tools as computers, smart phones, tablets, and of course the Internet. The latter is described by Zook (2019, online) as 'an incredible network of interconnected servers and computers that direct web browser requests through a network of wired and wireless connections'. The Internet plays a major role in the digital society permitting its users to instantly interact and share information and ideas (Ammanni & Aparanjani, 2016).

b. *Digital Commerce* : similar to the traditional form of society, citizens engage in commercial exchange which ensures for them their daily living needs. Digital commerce has facilitated such exchange in that we are now able to buy goods and products or even receive services while sitting in front of our computers. Though this new form of commerce may engender risks of counterfeit and fraud, it is becoming very common among digital citizens for the easy and quick purchasing services.

c. *Digital Communication*: Grizzle (2014) identified digital communications as 'new tools for cultural expression as they enable citizens to participate more to shape new forms of cultural ties' (p. 18). Nowadays, technology has facilitated communication to a large extent. The Internet has contributed in connecting people from different cultures and languages through social and academic networks. In addition, 'computers and telecommunication systems have changed the social order of the industrial era to the communication era' (Berge, 2000, p.

3). It is safe to say today that digital communication is by far exceeding face to face communication. This can be considered a double-edged sword; technology has reduced distances but at the same time separated people from each other in that they now spend more time in front of their mobiles or computers than having time to meet and communicate face to face.

d. *Digital literacy*: In order to take full advantage of technology and gear it towards achieving their own benefits, users have to work on increasing their digital literacy. Chu et al. (2017) identified three components of digital literacy: Information Literacy (IL), Information and Communication Technology (ICT) skills, and Media Literacy (ML), each of the three components is defined and exemplified in the following table:

Table n° 01. Operational definition of the components of digital literacy

Component	Definition	Example
Information Literacy (IL)	Ability to recognize when information is needed, and ability to locate, evaluate and use the information effectively and ethically.	Searching for information via the internet or other sources (egs, books, newspapers, television, youTube)
Information and Communication Technology (ICT) skills	Ability to use digital technology, communication tools and/or networks, to access, manage, integrate, evaluate, and create information.	Using MS Excel to produce charts or histograms from a set of data.
Media Literacy (ML)	Ability to decode, evaluate, analyse, and produceprint and electronic media.	Recording and editing a music file.

Source : Chu et al. (2017, p. 21).

Furthermore, Vrana (2014) emphasized the importance of digital literacy which according to the subjects of his study 'influences their lives, education, research, communication with friends considerably' (p. 168). Furthermore, the results of his study indicate a connection between the use of ICT and academic performance of the students. These findings confirm the positive effects of technology and the importance of digital literacy in improving different aspects of our lives mainly in the educational domain.

e. *Digital Etiquette* : it is defined by Ribble and Bailey (2007, p. 12) as 'the standards of conduct' that are shown by digital citizens. These are norms which guide relationships between users of technology and should be grounded on mutual respect and acceptable behavior. For example, net users have to employ respectful language and avoid creating harm or problematic issues for other users.

Cyber bullying is a good example representing absence of digital etiquette. Cyber bullying is defined by Erasmus-plus (2017, online) as 'a form of bullying or harassment using electronic means [which can include] harmful bullying behavior like posting rumors, threats, a victims' personal information, or pejorative labels (i.e., hate speech)'. Erasmus-plus further distinguished between cyber bullying and traditional bullying arguing that victims in cyber bullying cannot know the identity of the bully or even the reason for such an agressive behavior. In this respect, cyber bullying tends to be more dangerous than traditional one and may engender serious mental and psychological consequences.

f. *Digital Law*: These are 'legal rights and restrictions governing technology use' (Ribble & Bailey, 2007, p. 12). In other words, digital citizens have certain rights which are protected by law, but at the same time they have limits which they should not go beyond. Erasmus plus (2017, online) defined digital law as 'the electronic responsibility for actions, deeds which is either ethical or unethical'. Ethical or legal technology use, according to Erasmus plus, implies aligning with the laws of digital society such as understanding and distinguishing between downloadable and copyrighted materials, whereas unethical use can take the forms of cheating, theft, and/or crime like identity theft, software piracy, computer hacking, and plagiarism.

g. *Digital Rights and Responsibilities*: This element is tightly related to the previous one. By setting digital law, rights are preserved and responsibilities are set clear. Digital rights, according to Reventlow (2017, as cited in Pangrazio & Sefton-Green, 2021) are 'human and legal rights that allow individuals to access, use, create and publish digital content on devices such as computers and mobile phones, as well as in virtual spaces and communities' (p. 19). This implies that digital citizens have the right of accessing and using digital content both in online and offline contexts. At the same time, technology users have some responsibilities. Advenica (1993, online) identified digital responsibility as the 'need to do good' with technology and digital devices. Digital responsibility, according to Advenica consists of three main elements: digital functionality, digital privacy, and digital sustainability. Digital functionality implies the need for increased opportunities of measuring, collecting and processing information, while digital privacy is related to security and involves six main objectives; confidentiality, integrity, availability, unlinkability, transparency, and influence. Digital sustainability on the other hand, requires extended responsibility not only for the present but even for 'potential future uses or misuses' (Advenica 1993, online)

h. *Digital Health and Wellness*: These are mainly related to the 'physical and psychological well-being related to digital technology use' (Ribble & Bailey, 2007, p. 13). In other words, the use of technology should not expose its users' health to risks. It is known today that extensive use of computers and phones creates sight problems or even sleeping disorder. Therefore, technology users have to be aware of the dangers that might be associated with random or non-careful use of electronic devices which would have negative consequences on their health and well being.

i. *Digital Security*: This element is related to the safety of technology users and the protection of their personal information. Digital security, according to EC-Council University (2023) is 'the practice of protecting digital information from unauthorized access, use, disclosure, disruption, modification, or destruction' (para. 1). In the same vein, Ravichandran (2023) identified and exemplified digital security as 'a set of best practices and tools used to safeguard your personal data and online identity. Password managers, parental controls, and antivirus software are examples of such tools' (para. 1). Similar to precious physical or concrete belongings which we protect from stealing by placing them in safe and secured places, our digital identity and personal information need also to be safeguarded using specific tools such as antivirus software and password managers.

II. Methods

1. Aims and Research Questions

The present study aims at investigating ENSC pre-service teachers' understanding and attitudes towards the concept of 'digital citizenship'. Moreover, it attempts to measure these students' digital literacy by shedding light on their practices and experiences with technology. Finally, the study seeks to measure students' awareness of ethical and unethical behaviors which would contribute to their well being as global citizens.

On the basis of the aforementioned aims, three research questions are raised:

RQ1 : What are ENSC students' attitudes, beliefs and experiences with the digital tools?

RQ2: What is the extent of these students' digital literacy?

RQ3: To what extent are ENSC students aware of appropriate and inappropriate behaviors of digital citizens?

2. Participants

The study sample consists of 102 students from the English department at L'ENSC, Algeria. Over 90% of students are females aged between 18-23. The

respondents represent all grade levels and come from different regions of the East of Algeria. These students are in fact pre-service teachers who after their graduation will be teaching at middle or secondary schools. Most subjects are taught in English and the system of study follows a hybrid mode of learning combining both online and face to face instruction. This means that students, especially in the post COVID 19 pandemic era, are more exposed to digital tools and tend to spend more time on the net for study and academic purposes.

3. Procedure

The present study follows an exploratory design aiming at shedding light on Algerian students' practices and experiences as well as their awareness about their digital citizenship. Data is collected through a questionnaire administered online via google forms to students of the English department at l'ENSC, Algeria. The questionnaire is a valuable tool for collecting data from a large population in timely and cheap manner (Mcleod, 2023).

The questionnaire in this study consists of 26 questions divided into three sections. Most questions are of multiple choice or yes/no format. Few questions are 'open' calling for respondents' opinion or further explanation about their answers.

- Section One : Background information
- Section Two : Students' digital literacy
- Section Three : Students' conception and practices of digital citizenship

Section one gathers demographic information about the respondents namely their grade level (Q 1), gender (Q2), and native region (Q3).

Section two titled 'Students' Digital Literacy' collects information about students' level in using digital technology (Q. 4), previous training in technology use (Qs. 5, 6), whether or not they have mobile phones (Q.7) and personal computers (Q. 9), the uses of both (Qs. 8, 10), and ownership of other digital tools (Q. 11).

Section Three, about 'Students Digital Citizenship', elicits information about access to the Internet and whether students can easily get connected (Qs. 12, 13), the average daily time they spend on the net (Q. 14), the most common uses of the Internet (Q. 15), whether or not they have heard about 'digital citizenship' before (Q. 16), whether or not they use their real names when interacting on the net (Qs.. 17, 18), the kind of digital communities they belong to (Q. 19), the benefits they get from such communities (Q. 20), disadvantages of technology and internet (Q. 21), online commercial exchange (Qs. 22, 23), characteristics of good digital citizens (Q. 24), negative digital behaviors (Q. 25),

and finally advice for better and more beneficial use of technology and Internet (Q. 26).

4. Results and Analysis

4.1. Students' Digital Literacy

The section about students' digital literacy consists of eight questions (Qs 4 - 11) and aims at gathering information about students' interaction and degree of command of technology. Results of this section are presented in the following table:

Table n° 02: Students' Digital Literacy

Command of technology		**Ownership & uses of digital tools**		
Good	54%	Smart phones	100%	Communication, entertainment & study
Average	45%	computers	76%	Study
Training in digital use		**Other digital tools**		
yes	5%	Tablets, IPAD, PS4, XBOX, camera, printer, scanner, smart watch		
No	95%			

As indicated in table 2, 100% of the students in the study have smart phones which they respectively use for communication, entertainment, and with a lesser degree for study. Moreover, 76% of students possess personal computers which they use primarily for study purposes. In addition to smart phones and computers, students mentioned other digital tools which they frequently use such as tablets, Ipads, printers, cameras, smart watches, Xbox, and PS4. These results clearly indicate that ENSC students are constantly surrounded by technology which is present in their daily life, accompanying them wherever they go; at home, at campus, and outside like phones and smart watches. These students can then be safely called digital natives because they are living with technology and using it for their daily living needs and purposes. What confirms our conclusion about these students as digital natives is that almost all of them are able to use technological devices without explicit training. As indicated in table above, 95% of the students indicated that they did not receive any training on how to use technology which may imply that they use it spontaneously and without effort as if it is an inborn ability for them.

When asked about the degree of their command of technology, all students answered 'good' (54%) or 'average' (45%); none of them opted for 'low' or 'weak' command. This result can have two possible interpretations. First, it confirms our conclusion about the students being digital natives since they have

no problem in manipulating technology. On the other hand, we may say that students' use of technology is random and almost not organized. In other words, students are not well instructed about the uses of technology, advantages, disadvantages, and even about the concept of digital or global citizenship. This, in turn, will affect their level of digital literacy. This is why almost half students in the population of the study evaluated their competence in technology use as being 'average'.

All in all, results of this section indicate that university students are well equipped with digital tools, since they are living with technology and able to interact with it without effort. However, they need to be formally instructed not only about the use of technology, but also about correct usage, benefits and ethical issues about technology to get full advantage of it and at the same time be alerted about negative consequences, inconveniences, and even dangers associated with it.

4.2. Students' Digital Citizenship

Digital citizenship as demonstrated in the review of literature section consists of key elements which must all, or at least most of them, be present so that it can be true for technology users. This section aims at investigating some of these elements such as digital access, commerce, communication, etiquette, rights and responsibilities. Results are illustrated in tables 3, 4, 5 below.

Table n° 03: Students' Conception and Experiences as Digital Citizens

Internet accessibility		**Concept of digital citizenship/digital indentity**			
Easy access	85%	familiar	21%	Real names	84%
Difficult acces	15%	unfamiliar	79%	Pseudo names	16%
Time Spent on the Internet		**Uses / Internet communities**			
Lessthan 2 hours	8%	Entertainment	78%	Social media	98%
2-5 hours	57%				
More than 5hours	35%	Study	65%	Academic groups	40%

Digital citizenship requires easy access to Internet and technological devices. According to table 3 above, 85% of students in the sample population have easy access to the Internet while a small portion of 15% tends to face some connection problems. Added to the previous results where 100% of students confirmed their ownership of smart phones, we can admit that almost all participants in this study are in fact digital citizens because they have easy access to technology and communication tools. When asked about the time they spend on the Internet, 57% opted for two to five hours per day, 35% answered more than five hours, while only 8% answered that they spend less than two hours on the net per day. These

results further confirm that nowadays students are strongly attached to technological devices and Internet which make of them true digital citizens. Paradoxically, the majority of students (79%) are not familiar with the concept of 'digital citizenship' which means they practice their roles as digital citizens almost unconsciously. This result aligns with the previous findings in the first section where half the population of the study indicated that they did not receive any formal instruction on digital literacy. The consequence is clear in this section since the majority confirmed they never heard about the concept of digital citizenship before.

When asked about the digital communities they belong to, students opted for both social media and academic groups with a clear advantage in favor of the former type; i.e., social media. A subsequent answer about the activities they perform in these communities, students mentioned 'entertainment' (78%) and 'study' (65%). Again, these results match positively with results in this section about their preferred type of digital communities and with previous results about the uses of mobile phones and computers.

Another important issue is related to students' identity as digital citizens. 84% of students confirmed that they keep their real names; while a small portion of 16% answered that they use pseudonyms instead. This result indicates that students are aware of the importance of having a clear digital identity which does not contradict with their real one. In addition, digital communities are built to connect citizens with each other, know each other, establish new relationships which will improve their social and intercultural competencies and all these benefits cannot be achieved with 'fake' or unreal identities.

To sum up, participants in the study show to possess key elements of digital citizenship mainly easy digital access, membership in different digital communities which in turn contributes to fostering their intercultural communication. The results have shown that students belong to two types of communities which correspond to their profile as university students which are social media and academic groups. Though their answers indicate that they are not familiar with the concept of digital citizenship, they tend to be aware of the importance of having a clear and true digital identity which allows them to safely perform their roles and interact with other citizens belonging to the same communities.

Table n° 04: Students' digital commerce and opinion about digital communities

Commercial Exchange		**Kind of Commerce**	
Yes	50%	Clothes, accessories, cosmetics, food, books, electronics, house fourniture, etc	
No	50%		
Disadvantages		**Advantages**	
Time consuming	89%	Improving life skills	(76%)
Health issues	51%	Openness to other culture	(74%)
		Information Exchange	(73%)

Another important element of digital citizenship is 'Digital Commerce'. Participants in the study seem to be equally divided between those who are in favor and those who are against being involved in online commercial exchange (50% for each). Referring back to previous results, we can argue that students' use of the Internet is mostly related to fun (entertainment) or study activities. Commercial exchange tends to be less popular among ENSC students who have shown to be cautious about engaging in commercial or business activities. A possible interpretation is related to the profile of the respondents in this study being pre-service teachers which explains well why they are more engaged with academic and social media than with economic or business activities.

When asked about the kind of commerce they engage in (for the 50% who confirmed their implication in commercial exchange), students mentioned buying clothes, accessories, cosmetics, books, electronic devices, food, and house furniture. These results match very well with the participants being university students and being female pre-service teachers at the same time. Moreover, the findings indicate that students engage in commercial exchange which is related to their daily living needs, namely food, clothing, and studying (books).

Furthermore, this section also collects data about students' understanding of their roles as digital citizens and the degree of their awareness of the advantages and disadvantages of digital tools. According to 89% of the participants, the most serious problem with the Internet and digital devices is that they are time consuming. Consequently and logically enough, 51% of students believe that this extensive use of technology has negative effects on the health and well being of its users. These results show that students are aware of the drawbacks of technology and the dangers it may entail if not well used. On the other hand, students highlighted some advantages or benefits of technology namely

improving their life skills (76%), openness to other cultures (74%) and information exchange (73%).

The last set of questions aims at eliciting information about students' perceptions of digital citizenship, namely their opinion about the characteristics of good/bad citizens, and the advice they can provide in order to make the use of technology more effective and beneficial. Results of this concluding part are presented in the following table:

Table n° 05: Students' Perceptions about Digital Citizenship

Characteristics of 'good' citizens	**Characteristics of 'bad' citizens**
- Respectful to others - Helpful/cooperative - Honest - Wise - Competent - Self disciplined	- Disrespectful - Engage in bullying - Dishonest - Rude - Scam - cheating
Students' advice for more effective and beneficial use of technology	
Wise use of the internet, being helpful, making good relations, defining one's goals, being responsible, respect others and accept differences,	

As indicated in table 5, students mentioned several 'positive' or 'acceptable' digital behaviors including: being respectful to the others, being helpful and cooperative, being honest and wise, in addition to being digitally competent and self disciplined. The students' answers clearly match with Ribble and Bailey (2007) elements of digital citizenship including digital literacy (being competent), digital communication (helpful and cooperative behavior), digital etiquette, rights and responsibilities (showing honesty, respect to the others and wisdom).

On the other hand, students listed a number of characteristics which they consider 'unacceptable' or 'bad' and should, therefore, be avoided by digital citizens. These characteristics include: being disrespectful with others, bullying, showing dishonest and rude behavior, and finally cheating. Students' answers clearly show a certain degree of awareness about the difference between positive and negative net behaviors with the hope that students really take what is good and leave what is negative or unacceptable while acting as digital citizens.

The concluding question elicits advice from the respondents to make the use of technology and the Internet an enjoyable and beneficial experience for its users especially among students or younger generation. Students in the sample population focused on wise use of the Internet; i.e., taking what is good and

leaving what might be inappropriate or harmful. The ability to distinguish between what is right from what is wrong requires digital citizens to clearly identify their goals and purposes from using the net as indicated by the students' answers. Moreover, net users according to participants in the study must be helpful and cooperative in addition to having good relations with other citizens, being responsible and respectful, accepting differences of whatever type; physical, educational, or cultural. By aligning to these behaviors, students believe their experiences will be more enjoyable and fruitful.

4.3. Summary of the findings

The present study focused on students' experiences with technology and their roles as digital citizens. Some important points can be deduced from the analysis and interpretation of the results of the survey which was carried out with pre-service teachers in the English department at L'ENSC:

- The majority of students can be qualified as digital citizens since they have easy access to electronic devices mainly smart phones and computers in addition to an easy access to the Internet which according to them occupies a great part of their daily routine.
- Most students described themselves as 'good' users of technology despite the fact that they did not receive any explicit instruction or training on technology manipulation.
- The majority of students are not familiar with the concept of digital citizenship though they have practically shown to possess many important elements of global or digital citizenship such as digital literacy, digital access, communication, and digital commerce.
- Students participate in different virtual communities; mainly social and academic networks. Moreover, they confirmed that they keep their real identity (their real names) while interacting with other citizens in these communities. Online commerce, on the other hand, seems to be less appealing for students who showed to be hesitating about engaging in commercial exchange through the net.
- Students in the sample population have shown a certain degree of awareness about appropriate and inappropriate digital practices which, according to them, would render their experiences with digital tools more fruitful and beneficial.
- Training students on the use of technology as well as on ethical issues related to such use is very necessary. The training would not only increase students' digital literacy but would also contribute to raising their awareness about

the benefits and risks associated with digital communities like social media and business activities.

Conclusion

Digital citizenship is a key characteristic of the 21st century society which is inevitably dominated by the Internet and electronic devices. Today's students can be safely categorized as digital natives since they are able to manipulate technology without necessarily being trained on it. This excessive use of technology can, on the one hand, contribute to the development of people's lives, but on the other hand, present 'a threat of misuse and misappropriation' (McCosker et al., 2016, p. 65).

The findings of the present study confirm that most students in the sample population are indeed digital citizens, revealing many of the characteristics identified by Ribble and Bailey (2007). Moreover, the results show that these students have a certain degree of digital literacy which they acquired implicitly through regular use of technological devices rather than from explicit training or instruction. As a recommendation, then, schools and universities have a major role in shaping students' digital literacy and gearing it towards a correct and most beneficial usage. This will contribute in preparing students to become responsible, respectful, and effective digital citizens.

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