Digital Citizenship: A Theoretical Review of the Concept and Trends

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ABSTRACT
This article aims to analyze the concepts and tendencies identified in research conducted on digital citizenship in the last ten years. To satisfy this objective, search parameters were established for articles in specialized databases. Within the results, the prevailing categories were concepts, abilities, empowerment, instruments, programs and technologies that favor digital citizenship. The main findings include that different definitions exist of the concept of digital citizenship and that information and communication technologies contribute to access to information, though not equally at the global level. Additionally, digital citizenship is promoted by different initiatives such as programs focused on citizen participation. Thus, research focused on digital citizenship adopts a transcultural perspective in educational, social, public and private arenas.

Keywords: digital citizenship, education, technology, knowledge society, empowerment

1. INTRODUCTION
The Internet is a medium that boosts intercommunication and interconnection, which has led us to consider new forms of relating to one another in society. This phenomenon has been linked to the cultural aspects of societies since the mid-20th century, prompting calls for the importance of reflecting on, considering and strengthening the implementation of digital citizenship in different educational, business and social settings (Sancho, Hernández and Rivera, 2016).

Consequently, several theorists (Arif, 2016; Ortega-Gabriel, 2015 Sanabria & Cepeda, 2016; Gorman, 2015; Simsek & Simsek, 2013; Waikato Diocesan School for Girls, 2015, cited in Gorman, 2015; Sullivan, 2016) have focused on defining digital citizenship, what digital citizenship implies, its effects or benefits on society and, more importantly, what role should be assumed by individuals participating in digital citizenship.

However, given the amount of information and numerous perspectives on the issue, it is difficult to identify a single focus or to unify concepts. Similarly, it is unclear which aspects definitively constitute digital citizenship as well as which aspects should be strengthened.

In addition, researchers have made evident the digital divide in society, that at present the policies established by the governments have not been able to cover. With deficit in aspects such as infrastructure, connectivity, among others (Searson, Hancock, Soheil, Shepherd, 2015). Consequently, seeks to deepen on these items. As, it seeks to focus on not so clear points and prospective for future research on digital citizenship.

The use of technologies in social life has created inconveniences and problems that remain difficult to understand from academic and policy perspectives, such as cyberbullying, sexting and grooming, which have reached the point of permeating scholarly and work environments, moving beyond the borders of the personal. From this fact stems the motivation to analyze the theoretical and practical research conducted on digital competency within the last ten years.

Some systematic reviews on digital citizenship have addressed aspects such as digital literacy (1980 -1998) (Hivon & Titah, 2017) and digital skills (2000-2016 English language) (Hintz & Brown, 2017). This comprehensive review updates the revisions to deepen the conception and current state of digital citizenship.
2. METHOD

To perform a systematic review (SR) of the scientific literature, phases and tools were established to gather information.

First, the tools for gathering information in the selected databases were established to delimit the selection criteria for relevant articles. Second, tools were determined for organizing the information gathered, which enabled tagging and classifying the articles in a systematic manner. In addition, the scope, characteristics and conclusions of each article were determined based on the research question, as described next.

Phase 1. Selection criteria

In this phase, the search and selection criteria were identified for articles to ensure the replicability of the study and reduce bias and possible errors in identification. The following databases were used: Science Direct, Redalyc, Eric, ISI, Proquest, Scopus, Emerald, Dialnet and Ebsco. These repositories of scientific and arbitrated publications, provided detailed information on current academic and scientific articles for its possible to access them and establish search terms: Digital citizenship and ICT (see Table 1).

<table>
<thead>
<tr>
<th>Topic</th>
<th>Author and year</th>
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<tr>
<td>Concept of Digital Citizenship</td>
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<td>Digital Citizenship Skills</td>
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<td>Burridge (2010) and Missingham (2009), cited in Gazi (2016)</td>
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<td>Empowerment</td>
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<td>Alcaide–Muñoz, Rodríguez–Bolívar, Cobo &amp; Herrera–Viedma, 2017</td>
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<td>Hintz, Dencik &amp; Wahl-Jorgensen, 2017</td>
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The following details were considered:
1. In the article selection process: the authors’ names, title, type of publication, journal name, language and keywords.
2. To limit the search, a range of ten years was established, from 2007 to 2017 for establish a rank of years and can deep this papers and according to the theoretical framework of the study, this period was established to obtain the greatest number of sources that address digital citizenship.
3. Each advanced search in the databases provided the available information of articles on digital citizenship. In this first phase, 734 bibliographic references to scientific and academic studies were found.
4. Languages: Articles in Spanish and English was searched

Phase 2. Selection of potential articles
In this phase, the titles of the articles were reviewed individually to identify articles that satisfied the search criteria and the names of the corresponding topics. For example, under the topic of digital citizenship, information was found regarding the expansion of knowledge that was irrelevant to the study. Articles were discarded if they did not provide pertinent information based on the tags used in the search and the established disciplines in the social sciences. Articles for which full access to the document was not permitted were also discarded.

Applying this initial filter reduced the search to 100 bibliographic references. All information was stored in a database for subsequent consultation and analysis.

Next, to complement the data collection phase, the previous process was conducted, reviewing the abstract and conclusions of each article, thereby further narrowing the selection of potential articles. Following this process, 90 documents remained for analysis.

3. RESULTS
The categories correspond with the findings presented with greater occurrence in the investigated articles. Two big categories have been emerged: Digital citizenship as a bridge to empowerment and Overview of instruments and programs focused on digital citizenship, which they collect the main trends that arise from the results of the
systematized articles. The two major categories presented subcategories in the case of the first category: Policies for digital citizenship, the concept of digital citizenship and its characteristics, and in the second category: instruments for measuring digital citizenship and training programs for citizens, these subcategories grouped together by affinity with the themes. In order to guarantee the reliability of the groupings carried out, intracoder and intercoder carried out to check that the categories corresponded with the findings investigated in the articles reviewed. Figure 1 show a synthesis of Categories and subcategories:

![Figure 1: Tendencies in digital citizenship](image)

3.1 Digital citizenship as a bridge to empowerment

Conceptualizations of digital citizenship are nascent, given that it is not yet understood in depth, prompting different researchers (Arif, 2016; Ortega-Gabriel, 2015; Sancho, Hernández and Rivera, 2016) to indicate the need to continue investigating, expanding and generating academic debates on the topic. Thus, a wide range of perspectives exists regarding what digital citizenship encompasses.

In general, studies (Sanabria & Cepeda, 2016; Gorman, 2015) illustrate that digital citizenship refers to “the values of respect, tolerance, liberty, security...” (Sanabria & Cepeda, 2016, p. 98) and emphasizes the democratic principles (ethics, legality, security and responsibility) that guide actions in digital spaces (Sanabria & Cepeda, 2016, p. 98).

Other authors (Searson, Hancock, Soheil & Shepherd, 2015) propose that digital citizenship is a comprehensive concept with the following three components: constant questioning of the policies of all nations, active interest in the affairs of other countries and an interest in creating a just global order. Couldry, Stephansen, Fotopoulou, MacDonald, Clark & Dickens, (2014) propose a similar perspective on digital citizenship, though offer a stronger heuristic vision focused on exploring the uses of technologies through (interpersonal) relationships and the social practices generated by different social groups.

Authors such as Hintz, Dencik & Wahl-Jorgensen, 2017 mention that “Digital citizenship is typically defined as the (self-) enactment of people's role in society through the use of digital technologies” [p731]. Other authors have adopted a citizen participation perspective on the use of open data, concluding that said participation is crucial and facilitates practical activities, greater responsibility, and improved communication and relationships between citizens and open data portals; however, data extrapolated to global contexts is nevertheless lacking (Hivon & Titah, 2017).

Some researchers have discussed the issue of the constant monitoring of the activities of digital citizens by state agencies and internet companies, causing an intermittent change in the balance of power ([Hintz, Dencik & Wahl-Jorgensen, 2017; Hintz, & Brown, 2017; Martinez Rodriguez, 2011). Additionally, some studies (Simsek & Simsek, 2013) allude to the skills necessary to participate in digital citizenship. Some authors mention contemporary literacy skills (Simsek & Simsek, 2013; Area & Ribeiro, 2012) or technical and social skills (Waikato Diocesan School for Girls, 2015, cited in Gorman, 2015), while others (Sanabria & Cepeda, 2016) refer to dimensions of digital citizenship (creative, communicative and participative, axiological).

Clearly, digital citizenship is considered an essential aspect and one that should take priority in student training at educational institutions. This perspective is reflected in studies that have found deficiencies in student training.
with regard to civic knowledge (Robles, 2011) and studies that present teacher perceptions of the integration of digital citizenship into the thematic content of classes (Karaduman, 2017).

Research on digital citizenship highlights many topics, such as the use of Web 2.0, online participation, democracy, citizenship rights, technological capacities, the internet, social networks, values, norms, being informed, critical attitudes and the digital divide (Arif, 2016; Ortega-Gabriel, 2015; Simsek & Simsek, 2013; Area & Ribeiro, 2012).

Articles also highlight that countries such as Australia and New Zealand are working to promote the rights and responsibilities associated with digital citizenship and recognize these as fundamental to government processes, thus advocating for digital citizenship as a universal right (Sullivan, 2016; Simsek & Simsek, 2013; Gorman, 2015). This effort has been supported by experts in the field such as Area & Ribeiro, 2012, who state that “the new literacies are a right of individuals and a necessary condition for social and democratic development in 21st-century society” [p13].

This perspective has led to a redefinition of the public (state, nation) and private toward the creation of new scenarios of social interaction and democracy in which all citizens participate (Sancho, Hernández and Rivera, 2016). However, it has also been suggested that digital citizenship has generated inequality in certain sectors of society, widening the digital divide, particularly in developing countries (Crandall and Fisher, 2009, cited in Sancho, Hernández and Rivera, 2016; Rahm & Fejes, 2017).

In this context, the notion of empowerment represents the attempt to grant each person or group decision-making power, highlighting the role of citizenship in facilitating democracy and increasing the capacity to exercise power rather than to delegate it. This notion has gained strength with the emergence of Information and Communication Technologies (ICTs), sparking new proposals such as the concept of open government (Cáceres, Brändle, & Ruiz, 2015; Hivon & Titah, 2017), where citizens are allowed to access state data and thus launch a debate with solid arguments.

Other authors such as Burridge 2010 and Missingham 2009 cited in Gazi (2016), propose that the international promotion of digital citizenship increases generational empathy, thereby encouraging common norms for behavior in digital society.

Other studies reveal that ICTs have allowed citizens to gain access to information on voter intention and increase the transparency of information, increase trust in institutions and government, and monitor the behavior of politicians and government representatives. However, these technologies have not facilitated true citizen participation in which citizens can make proposals, and all sectors of the population are included (Alcaide-Muñoz, Rodriguez-Bolívar, Cobo, & Herrera-Viedma, 2017; Sampedro, Sánchez & Poletti, 2013).

3.2 Overview of instruments and programs focused on digital citizenship

Proposed instruments for measuring digital citizenship include self-report scales that consider behavior, cognition and social context, such as the instruments developed by Choi, Glassman and Cristol, (2017), in contrast to scales that inquire about the concept of digital citizenship, such as those developed by Cabrera, Marin, Rodriguez and Espin, (2005). The studies by Aytekin and Ozlem, 2013 found that the levels of digital citizenship are influenced by hours of internet use per day, the purpose of internet use, the use of devices to connect to the internet and the use of social networks by students. Researchers recommend that similar studies be conducted with other populations, along with the inclusion of new variables that can influence the development of digital citizenship.

The instruments also focus on measuring various skills, including citizenship and digital literacy, information management, collaboration, communication, the creation of content and knowledge, the evaluation and resolution of problems and technical operations. All the considered skills imply learning throughout one’s life and the productive use of technology (Techataweewan & Prasertsin, 2017).

Other studies have found a relationship between the use of social networks and citizen participation, specifically for a group of women belonging to rural areas who engage in scant digital citizen participation through these means (Jiménez, 2016). Echoing these findings regarding the use of social networks and citizen participation, studies conducted in North America reveal the efficiency of sending government information through social networks to complement the government services provided to citizens (Gao & Lee, 2017).
Studies also report on programs to empower citizens, providing information about local, state and federal governments using simulators of citizen participation processes (Blevins, LeCompte & Wells, 2014). Other programs involve the use of instruments for strengthening student commitment to civic education by integrating multimodal instruction methods in the classroom, such as those developed by Pellegrino, Zenkov, and Calamito, 2013. With respect to classroom activities, some studies reveal that schools that implement dialogue with students promote the development of civic behavior and active citizen participation. These initiatives include topics such as civic participation and local, state and federal government, in which the emphasis rests on civic disposition and commitment (Blevins, LeCompte, & Wells, 2014).

Internet use appears to be associated with greater citizen participation in digital spaces, consistent with the findings of Toks Oyedemi, 2015. Similar studies include Gozálvex, 2011, who finds that technology enriches democratic processes and citizen participation as well as citizen initiatives (Espaliú, 2015). Thus, the idea of the internet as a space for engaging public matters has grown stronger, as highlighted above by the different functionalities acquired by social networks, namely, providing simultaneous and multiple communication, facilitating faster transmissions of communicative and activist information (Hernández, Robles & Martínez, 2013; Gonzalez-Lizarraga, Becerra & Yanez-Diaz, 2016).

Related to the above proposals is the development of digital skills to become informed and actively participate as citizens in digital society García-Valcárcel, Basilotta and Mulas, (2016). In this respect, new concepts have been proposed to describe new approaches to democracy, including teledemocracy (Beker and Aterton, 1981 and 1987, cited in Martínez, 2011), cyberdemocracy (Howard Rheingold, 2004, cited in Martínez, 2011) and digital or electronic democracy, digital government and e-administration.

Other studies highlight the importance of developing competencies through new literacies that strengthen digital citizenship, supported by public policies and individual responsibilities (Simsek & Simsek, 2013). Studies also reveal that students with high levels of attitudes toward the internet and self-efficacy in the use of computers exhibit high levels of respect for themselves and others and educate themselves and others about digital citizenship (Al-Zahrani, 2015).

In contrast to the research summarized thus far, some studies find both advantages and disadvantages in the use of the internet as a mechanism for citizen participation. On the one hand, for instance, a positive aspect is free participation. From another perspective, this aspect can become a form of oppression in certain countries with undemocratic regimes. Thus, studies emphasize the importance of conducting more research to clarify the relationship between the use of ICTs, citizen participation and democracy (Nam, 2017; Szopiński & Staniewski, 2017).

Studies also find that although students have increased their digital literacy, this increase does not guarantee that students will use technology to empower themselves, become more autonomous in their learning or develop critical thinking skills. The studies reveal gaps in the instruments used to investigate the use of technology and propose conducting interviews and classroom observation to learn how teachers and students choose certain technological tools for teaching, learning and participation (Hohlfeld, Ritzhaupt, Dawson, & Wilson, 2017).

4. DISCUSSION

This literature review aimed to identify the research fields that have explored digital citizenship and to highlight the different perspectives on digital citizenship. The review demonstrates that the concept of digital citizenship has permeated society and, therefore, the relationships that arise with it, thus providing new perspectives on what it means to be a digital citizen (Sullivan, 2016; Simsek & Simsek, 2013; Gorman, 2015). Digital competencies have provided spaces for society in general to express itself in response to different social, political and academic phenomena (Vesnic-alujevic, 2013; Soukup, 2014). Additional research is required, however, on the relationship of technologies to the phenomena present in society.

Various researchers have advocated the practical application of the concept of digital citizenship (Blevins, LeCompte & Wells, 2014; Pellegrino, Zenkov & Calamito, 2013; García-Valcárcel, Basilotta and Mulas, 2016), for instance, by prioritizing citizen participation in digital realms. Notably, such proposals have elevated the perceived importance of training as well as further studying this topic.

In developing countries, access to technological resources is not guaranteed, thus affecting individuals’ access to information and online participation. Moreover, certain governments do not often make public the information managed by government agencies.
Hence, the conditions for training and acquisition of skills concerning digital citizenship are likely more favorable in developed countries that already possess the support and open databases from governments. This contrast is a clear example of how the state can transform itself, thus opening the door to societal participation in government processes (Sancho, Hernández and Rivera, 2016). Nevertheless, the relationship between government, citizen participation (democracy) and ICTs has not been addressed in adequate depth, which suggests the necessity of pursuing comparative research on developed and developing countries.

In this respect, one of the most widely recognized proposals worldwide is that of the International Society for Technology in Education (ISTE, 2004), which posits that digital citizenship comprises nine areas (netiquette, communication, education, access, commerce, responsibility, rights, ergonomics, and risk). This composition, in contrast to the programs and proposals reviewed, demonstrates that only certain areas of digital citizenship has been addressed in the literature, such as access, rights and communication. This selective investigation of digital citizenship reaffirms the need for further research on digital citizenship and raises the question of the adequacy of training provided in current programs and whether such training has been addressed all areas or dimensions of digital citizenship.

5. Conclusion
In synthesis, promoting digital citizenship implies great challenges, which can include participation by government bodies, universities, schools, families and society in general, transforming them into agents capable of facing situation in digital environment. Though digital citizenship concept included practical values, tolerance, respect, democracy and questioning regarding policies by citizens (Sanabria & Cepeda, 2016; Gorman, 2015). Some authors agree digital citizenship is refered mainly to citizenship promulgation in society with ICT (Sancho-Gil, Hernández, Rivera, 2016). Also included other trends such as digital identity as right (Gorman, 2015), citizenship empowerment using technology for pronunciation about the approach of citizen participation mechanisms (Alcaide, Rodriguez, Cobo, Herrera, 2017) and citizen influence on changes in the use of Internet (Hintz, Dencik & Wahl-Jorgensen, 2017).

It is important to delve into other aspects such as analyzing basic citizen training around democratic principles (ethics, legality, security and liability) and how previous concepts could be influenced by citizen acts, because there are critical positions about digital gap could be generated into citizen inequality and manipulation by undemocratic regimes Nam (2017). The results of this review indicate that whereas initiatives are underway and different countries are conscious of the importance of providing training on digital citizenship, it is necessary to reflect on the recognition that this field should have in developing countries, toward establishing alliances between countries and offering equality for all. In this way, could have been consider for future works this question: How could the measurement instruments in Digital Citizenship reflection different relationships in different countries? Transcultural studies could elaborate on the differences between countries with high and low access to technological resources.

Regarding the skills required to exercise digital citizenship, it would be worth asking: what does society need to contribute to digital citizenship? The follow-up shows three trends in terms of the training needs of citizens: the first is democratic knowledge for citizen participation and knowledge of the rules of citizen behavior (Sanabria & Cepeda, 2016; Burridge, 2010; Missingham, 2009).

The second tend includes social skills such as creativity, critical attitude, axiology, communication (Arif, 2016; Ortega, 2015; Sanabria & Cepeda, 2016) and the third tendency is digital literacy (Simsek E, Simsek, 2013; Area & Ribeiro, 2012) which includes the Internet management, skills in the handling of information and the use of social networks. On the other hand, it is necessary to establish in theory and practice, the relationships and interactions that technologies generate in citizenship and technology promote this aspect with greater force, since it is a point that does require analysis. According to the above, the following questions can have been ask to inquire about these issues: How have programs in Digital Citizenship transformed the profile of the citizen?

The results include the relevant tools for the design of instruments oriented to the measurement of digital citizenship in school, government and family contexts. For this reason, it is worth considering the following question: How is the level of education in Digital Citizenship former and how is it contribute to the professional profile of the students in formation? This aspect is interesting to deepen in future research because students have deficiencies in civic knowledge (Robles, 2011) and digital literacy is not a guarantee that the use of the Internet will developed critical thinking and empowerment. In this regard, the instruments used in the studies analyzed present two trends: the first one is oriented to how the Internet is being used as a mechanism of public interaction, enriching citizen and activist participation (Jiménez, 2016; Gao X, Lee, 2017). The second tendency of the account of the instruments used to measure the educational use of civic education and citizen participation...
with multimedia (Robles, 2011; Blevins, LeCompte & Wells, 2014). However, it is necessary to analyze the criteria of choice of technological tools that propitiate these skills (Hohlfeld, Ritzhaupt, Dawson & Wilson, 2017).

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