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Abstract

When digital technologies become a part of every-day life in most parts of society, it changes the way we work, organize, communicate, and make relations. It also changes the relationship between the state and its citizens – a relationship usually conceptualized as citizenship. To capture this transformation, a new concept of *digital citizenship* has emerged. The overall purpose of this paper is to overcome the fragmentation of knowledge about how citizenship is transformed into digital citizenship through a systematic review of the academic literature on the concept of digital citizenship. The literature review identifies four streams of literature in the academic landscape of digital citizenship, and by a content analysis, it outlines the many dimensions and facets of digital citizenship. In this way, the literature review offers a comprehensive picture of both the impacts of the digital transformation on citizenship and the concept within the academic debate.

Zusammenfassung
Digital Citizenship:
eine systematische Literaturanalyse
Wenn digitale Technologien in den meisten Teilen der Gesellschaft das tägliche Leben durchdringen, verändert das die Art und Weise, wie wir arbeiten, uns organisieren, kommunizieren und Beziehungen eingehen. Es verändert auch die Beziehung zwischen Staat und Bürgerinnen und Bürgern – eine Beziehung, die normalerweise als Staatsbürgerschaft konzeptualisiert wird. Um diesen Wandel zu erfassen, hat sich ein neues Konzept der digitalen Bürgerschaft herausgebildet. Das übergeordnete Ziel dieser Arbeit ist es, die Fragmentierung des Wissens darüber, wie Staatsbürgerschaft in digitale Staatsbürgerschaft umgewandelt wird, durch eine systematische Überprüfung der akademischen Literatur zum Konzept von Digital Citizenship zu überwinden. Der Beitrag identifiziert vier wissenschaftliche Literaturstränge zu Digital Citizenship und skizziert mittels einer Inhaltsanalyse die vielen Dimensionen und Facetten von Digital Citizenship. Auf diese Weise bietet die Literaturübersicht ein umfassendes Bild sowohl der Auswirkungen der digitalen Transformation auf die Bürgerschaft als auch des Konzepts innerhalb der akademischen Debatte.

1   Introduction

For at least three decades, digital technologies have become a part of almost all parts of society. In the early days of this development, the technology was 'just' used to store and organize huge amounts of data. However, the technological development of computers, as well as communication technologies, opened for new possibilities of usage in a way that was hard to imagine at the beginning. This digitalization of society also changes the relationship and interaction between the state and its citizens – a relationship usually conceptualized as citizenship. To capture this transformation of citizenship, a new concept of *digital citizenship* has emerged (Mossberger, 2008).

The new concept has started to pop up in research to describe the impacts of the digitalization on citizens and their relationship with public authorities, their political engagement, and social activities. However, the current knowledge of the digital transformation of citizenship is fragmented in different fields and a full picture of the impacts is lacking. A comprehensive picture of the research in digital citizenship will contribute to our understanding of how citizenship is transformed into digital citizenship. Thus, the overall purpose of this paper is to overcome the fragmentation of knowledge of the impacts of the digital transformation on citizenship by asking how the academic literature describe the impacts of the digital transformation into a digital citizenship. Going through the previous discussion of the concept of digital citizenship (see next section) adds two more questions to the investigation of the literature on digital citizens. The added questions are how the literature describes the process of inclusion and exclusion by asking: Is the transformation into a digital citizenship possible for everybody or does the digital divide still exist? Finally, we ask how the digital technologies change the way citizens act in the interaction with the political community.

These questions will be answered through a systematic literature review (Grant & Booth, 2009) of the academic literature of digital citizenship. While other literature reviews on digital citizenship focus on a single perspective, e.g. citizenship education (Choi, 2016) or theoretical approaches to digital citizenship (Jørring, Valentim & Porten-Cheé, 2019), this review aims to present a comprehensive picture of how the academic literature presents the digital citizen and the impacts of the digital transformation of citizenship.

Within the public sector, the digitalization is often described through different stages of e-government (Lee, 2010), in which the usage of digital technologies moves from a simple information dissemination to a digital transformation where the impact is a throughout transformation of both the work processes, the public service itself, and the political engagement of citizens. However, this approach is criticized for being too deterministic regarding the development as taking place in a certain sequence and including an evolutionary perspective, which makes it look like the development takes place without any kind of political struggles and is just a matter of time (Jæger, 2020). Furthermore, a recent literature review of the concept of digital transformation shows that we are dealing with an ongoing and never-ending process (Vial, 2019). In continuation of this understanding, the transformation of citizenship into digital citizenship is here understood as a non-linear and ongoing process, and as it appears from the annual e-government survey of the UN (United Nations, 2020), different states are going through the development in very different pace. In this way, the literature presented in

this review, represents different points of impact in the complex transformation into a digital citizenship.

The structure of the paper is as follows. First, a presentation is given of the emergence of the concept of digital citizenship. Second, the methodology for the review is presented. Third, the findings of the review are presented in the form of an overall map of the academic landscape of the concept of digital citizenship, organized around four main streams of literature, followed by an analysis of the content of the literature within the four streams. Finally, the findings of the review, showing the comprehensive impacts of the transformation, are discussed.

2   The concept of digital citizenship

The concept of digital citizenship takes its point of departure in the general concept of citizenship. Although the concept of citizenship has been around for many years, no simple and unambiguous definition exists. Within political philosophy, citizenship is "normally defined as a bundle of rights and duties relating to an individual as a member of a political community" (Turner, 1993, p. x). In a historical analysis of the development of citizenship in Britain, Thomas Humphrey Marshall (1992/1950) identifies three elements of citizenship, which he calls *civil, political,* and *social.* The civil element consists of the rights necessary for individual freedom – liberty of the person, freedom of speech, thought and faith, the right to own property, and the right to justice. The institutions associated with civil rights are the courts of justice. The political element consists of the right to participate in the exercise of political power. The institutions connected to this right are parliament and councils of local government. The social element consists of the right to economic welfare and security and the right to "live the life of a civilized being according to the standards prevailing in the society" (Marshall, 1992/1950, p. 8). The institutions connected with this right are the educational system and the social services. The concept of citizenship is further elaborated and more elements (for instance identity, cultural, and global elements) are added, and, today, it is often described as a contested concept (Schou, 2018). The latest addition to the concept is the impact of digital transformation in the form of the digital citizenship.

The academic discussion of digital citizenship emerged from debates about the *digital divide* and the question of who was included in, or excluded from, the so-called information society. In line with the general understanding of innovation as something positive, inclusion in digitalized society was assumed to offer many benefits. Hence, exclusion from the information society was regarded as disadvantages and a source of inequality. Thus, the focus of the initial research in this area was on access to technology, and a growing body of literature investigated the causes and consequences of the digital divide (Norris, 2001). However, this literature was criticized for being too narrow, focusing solely on access to technology (Warschauer, 2003). One study pointed out that access to technology was not the only important factor – technical skills and the educational competencies to assess digital information were also considered important factors in understanding the digital divide (Dijk, 2005). A study of elderly people's use of ICT revealed that motivation was also an important factor (Jæger, 2005). This early discussion raises a basic question of *inclusion or exclusion* in the digital world. In continuation of this, this review will investigate how the literature describes

the process of inclusion and exclusion by asking the following question: Is the transformation into a digital citizen possible for everybody or does the digital divide still exist?

In the further discussion, some scholars rejected the concept of a digital divide and started to use the term digital citizenship to describe the process of being included in a digitalized society as a digital citizen. Karen Mossberger (2008) is a good example of this development. She defines digital citizenship as follows:

> "Digital citizens can be defined as those who use the internet every day, because frequent use requires some regular means of access (usually at home), some technical skill, and the educational competencies to perform tasks such as finding and using information on the web, and communicating with others on the internet […] digital citizenship is an enabling factor for *political citizenship*…" (Mossberger, 2008, p. 173-174).

A recent literature review on digital citizenship (Jørring, Valentim & Porten-Cheé, 2019), categorizes Mossberger's (and familiar) definition as a *conditional approach*, which understands access to the internet as a right and can be used to understand how participation in the online world is shaped by socioeconomic conditions. Another conditional aspect is that participation in the online world is a condition, or enabling factor, for political engagement. Hence, this review will investigate the conditions for *political engagement* in the digital world by asking how the digital technologies change the way digital citizens interact with the political community.

Another literature review on the concept of digital citizenship, conducted in 2016 with the purpose of contributing to better citizenship education, defines digital citizenship more broadly. Based on the results of a concept analysis, Moonsun Choi (2016) develops four elements of digital citizenship: Media and Information Literacy, Participation/Engagement, Critical Resistance, and Ethics. Given these elements, she defines digital citizenship as "abilities, thinking, and action regarding Internet use, which allows people to understand, navigate, engage in, and transform self, community, society, and the world" (Choi, 2016, p. 584). This definition adds the notion of active use of technology to transform oneself, and ultimately to change the world. The author further argues that "digital citizenship needs to be understood as a multidimensional and complex concept in connection with an interrelated but non-linear relationship with offline (place-based) civic lives" (Choi, 2016, p. 565). Choi's (and familiar) definition is described as a *normative approach* (Jørring, Valentim & Porten-Cheé 2019), in which digital citizenship is understood as the ideal way to act online and can be used to discuss ethical and moral considerations in relation to online participation.

Recent research also finds that digital citizenship must be understood as a multidimensional and fluid concept (Isin & Ruppert, 2015; Vivienne, McCosker & Johns, 2016; Schou, 2018). These contributions to the discussion represent a more critical theoretical approach to the concept of digital citizens and they avoid making an *a priori* definition of digital citizenship. For instance, Jannick Schou (2018) remarks that "citizenship neither can nor should be reduced to reified categories that can then be applied to measure populations." He further explains, that "citizenship must not only be understood as a historically situated, politically variegated and contingent category, but that multiple and overlapping modalities of citizenship may co-exist at any given time" (Schou, 2018, p. 31).

Instead of defining digital citizenship in fixed categories, Engin Isin and Evelyn Rupperts (2015) draw on speech act theory in arguing that digital performance must be understood in terms of *digital acts* in which the digital citizen is constituted as a political subject. Similarly avoiding fixed categories, other scholars argue that:

> "digital citizenship is always already under negotiation, embedded in a multi-dimensional web of power, discourse and emergent meanings. If anything, it is this fluidity and multiplicity that defines digital citizenship – the fact that it is indeed many things to many people and is unlikely ever to settle into a stable status quo" (Vivienne, McCosker & Johns, 2016, pp. 14-15).

These contributions to the discussion of digital citizenship are described as a *contextual approach*, which understands digital citizenship as a context-dependent and fluid concept. In this approach, digital citizenship "encompasses very diverse experiences of what it is like to live as a citizen in the digital age" (Jørring, Valentim & Porten-Cheé, 2019, p. 21).

The present review takes its point of departure in the contextual approach. In this way, each of the reviewed publications presents a picture of how digital citizenship is understood and enacted in the context in question, and, taken together, the publications present digital citizenship in all its multiple forms across different contexts.

3   Methodology

When conducting a literature review, the most crucial part of the process is to find the relevant literature. The literature search for this review took place over a period of several years. In 2015, a broad search for literature was conducted using SUMMON, which is a discovery service developed for libraries. The service provides access to authoritative content from libraries of every kind. In 2018, a systematic search for literature (Grant & Booth, 2009) was conducted with the aim of gaining insight into the academic literature on digital citizenship. This search, conducted by a librarian, took place in three databases: Proquest, Web of Science, and EBSCO-host. In all three databases, the search was limited to peer-reviewed articles published in scholarly journals in English.

The search, both in SUMMON and the three databases, was on the term 'digital citizen*'. A consequence of this is that publications, which present studies of the digital transformation of the relationship between states and citizens without using the term 'digital citizenship', are not included. For instance, a huge body of literature on e-government, which deals with this relationship, is not included because it does not relate to the concept of digital citizenship. Just like, we do not find one single publication describing the digital transformation of the relationship between the healthcare system and its users because they do not conceptualize the relationship as a part of citizenship. On the other hand, the search includes all publications mentioning digital citizenship even if it is not the main issue of the publication.

The results of the systematic search in the three databases were controlled for duplications. Some of the publications were found in two, or even all three databases, so eliminating duplications reduced the number of results. In the end, the systematic literature search resulted in a list of 497 publications. The search included a range of publications that were also part of the initial search in SUMMON in 2015. However, not all

publications from the SUMMON list were included in the new search, which was limited to articles. Hence, 50 publications identified in the first search were added to the list. A screening of the abstracts revealed that not all of these publications were suited for the review. Some were skipped due to the content and others because the publications were not academic. Altogether, 182 publications were excluded from the sample.

A reading of the articles revealed that several central publications were not included in the sample because they were published as books, which were not included in the 2018 search. Hence, up to May 2020, eight further publications were added to the list. Altogether, the list numbered 373 publications, which form the basis for the following analysis of the literature on digital citizenship (see *Table 1* and the appendix containing a complete list of publications included in the review).[1]

Table 1: Publications included in the review

Systematic search in three databases, 2018	497 publications
Search in SUMMON, 2015	50 publications
Supplements to the list, 2020	8 publications
Total	555 publications
Skipped	182 publications
Reviewed	373 publications

Source: Own illustration.

This is a high number of included publications compared to other literature reviews. For instance, the above-mentioned review consists of 139 sources (Jørring, Valentim & Porten-Cheé, 2019, p. 14). The review of Choi (2016) consists of 254 sources, however, this is not solely academic literature; it also includes official websites, blogs, and news articles (Choi, 2016, p. 572). The high number of publications in the present review indicates a more comprehensive picture of the academic discussion of digital citizenship.

The analysis of the literature consists of two elements: first an analysis, which identifies the academic landscape of the concept of digital citizenship, second, a content analysis of the single publication identified in the landscape. Mapping the academic landscape was, from the outset, an inductive process informed by the content of the single publication. During the analysis, it turned out that a clustering around the constitutive elements of the general concept of citizenship described above was usable for the construction of four streams of the literature. All 373 publications were assigned to only one stream.

The content analysis consisted of a coding of all 373 publications with the following categories: 1) Position in the academic landscape (stream); 2) Discipline; 3) Definition of digital citizenship; 4) Theoretical approach; 5) Methodology; 6) Research question; 7) Findings. Given this coding, the publications were clustered around different themes, which they had in common due to the research questions and findings. *Table 2* presents the overall findings of the analysis according to the streams in the academic landscape and the number of publications within each steam. It also presents the dominating disciplines and last, but not least, it presents the findings of the content analysis of the publications clustered around themes.

Table 2: The Academic Landscape of Digital Citizenship

Position in the landscape – Streams	Digital Rights and Privacy	Political Engagement	Digital Public Service	Training and Learning
Link to the general concept	Civil Rights	Political Rights	Social Rights – social services	Social Rights – education
Number of publications	36	94	25	218
Dominating disciplines	1) Law 2) Media and Communication Studies	1) Political Science 2) Media and Communication Studies 3) Sociology	1) Public Administration 2) Information Systems	1) Education / Pedagogy 2) Information Studies
Content analysis – Themes	1) Right to use the web and protection of privacy (15 publications – no. 1-15 in the appendix)	1) Inclusion and identity vs. exclusion and digital divide (25 publications – no. 37-61 in the appendix)	1) Citizens' usage of digital public services (14 publications – no. 131-144 in the appendix)	1) Pedagogical ways to teach with digital technologies (133 publications – no. 156-288 in the appendix)
	2) Surveillance and security (11 Publications – no. 16-26)	2) The mobilization vs. the reinforcement theses (16 publications – no. 62-77)	2) Relationship between citizens and bureaucrats (11 publications – no. 145-155)	2) Teachers competences (23 publications – no. 289-311)
	3) Law to control the web and the usage of data (10 publications – no. 27-36)	3) Communication of political issues (11 publications – no. 78-88)		3) Role of libraries (28 publications – no. 312-339)
		4) Democracy and participation (42 publications – no. 89-130)		4) Online learning (12 publications – no. 340-351)
				5) Technology leadership of schools (12 publications – no. 352-363)
				6) Cyber-bullying (10 publications – no. 364-373)

Source: Own illustration.

4   The Academic Landscape of Digital Citizenship

The result of the first part of the analysis is a map of the academic landscape consisting of four streams of literature (see *Table 2*):

1) **Digital Rights and Privacy**, which refers to the civil rights necessary for individual freedom, based on law and justice.
2) **Political Engagement**, which refers to political rights associated with parliaments and local government councils.
3) **Digital Public Service**, which refers to social rights pertaining to social services.
4) **Training and Learning**, which refers to social rights pertaining to education.

The streams in the map are quite different in terms of their relative weight. The stream concerning Training and Learning is the heaviest stream, while the stream concerning Digital Public Service is the lightest. In the following sections, I will present the content analysis of the different streams, describe how they define digital citizenship, and analyze how they present the impacts of the digital transformation of citizenship.

4.1 Digital Rights and Privacy

The stream of literature dealing with digital rights and privacy consists of 36 publications dealing with issues that correlate with the civil rights described as a part of the general concept of citizenship. Just as courts are the main institutions linked to civil rights, the law perspective dominates this stream; however, we also find a cluster of publications dealing with the media and communication studies. Very few publications in this stream define the concept of digital citizens. Most publications take for granted that citizens have to be digital when living in the digital age.

From the analysis of the content, it is possible to cluster the publications within this stream in three themes (see *Table 2*). The first theme consists of 15 publications and concerns the right to use the web (and its digital content) and to use it without a violation of privacy. Under this theme, we find publications asking whether access to digital content on the web is a human right (Oyedemi, 2015). With the right to use digital content follows a fear of violation of privacy. Several publications are concerned about children's right to privacy when they use the web and some are worried about the so-called stranger-danger threat (Harris, 2010). One publication specifically warns about iPredators, defined as "… all online users engaged in nefarious and/or abusive online behaviors. Whether the offender is a cyberbully, cyberstalker, cybercriminal, online sexual predator, internet troll or cyber terrorist, they fall within the scope of iPredator" (Nuccitelli, 2011, p. 44). These publications show that digital citizens are vulnerable to intruders when they engage in digital activities, and illustrate how the digitalization of society has had a clear impact on the citizenry.

The second theme is concerned with surveillance and security. Several authors refer to Edward Snowden's revelations about how internet companies monitor the activities of digital citizens, making it possible for intelligence agencies to conduct large-scale digital surveillance, and many authors discuss how citizens can avoid surveillance by the state. One of these studies explored public attitudes toward surveillance and found that a public response to surveillance is lacking. "We argue that the lack of transparency, knowledge, and control over what happens to personal data online has led to feelings of widespread resignation, not consent, to the status quo that speaks to a condition we identify as 'surveillance realism'" (Dencik & Cable, 2017, p. 763). According to these authors, digital citizens quietly accept the state's surveillance as a condition for being part of the digital world. However, it is not only states that conduct surveillance of citizens. Other authors are concerned with the surveillance of private companies that use their knowledge about the behavior of digital citizens for commercial purposes (Banaszak & Rodziewicz, 2004).

The third theme consists of a cluster of publications dealing with the law to control communication on the web and the use of data. In the UK, Snowden's revelations led to the implementation of a new legislative framework. However, a study of the policy

process constructing this framework found that the "… policy reform has led to a confirmation, rather than restriction, of data collection" (Hintz & Brown, 2017, p. 782). Most publications within this theme agree that existing laws do not solve the problem, leading some to suggest that the law should be supplemented with other initiatives, for instance, a "so-called '3-E' solution that combines consumer *education*, user *empowerment*, and selective *enforcement* of existing targeted laws and other legal standards" (Thierer, 2013, p. 412).

This content analysis shows that the digital transformation adds some new dimensions to the citizenship. Digital citizens are described as vulnerable because digital technologies create new ways to violate privacy, both in the form of iPredators, abuse of data for commercial objectives, and state surveillance of citizens in the name of national security, which demand new forms of privacy protection. The analysis also reveals that a legal solution to this problem is still lacking, and that digital citizens seem to have quietly accepted that they must live with surveillance to some extent.

4.2 Political Engagement

The stream of literature concerned with the issue of political engagement consists of 94 publications, which is in line with the political dimension of the general concept of citizenship, since it covers similar issues like citizens' right to express their beliefs, to take part in elections, and to have access to information about political processes. The authors in this stream of literature are mainly based in the field of political science, but researchers from the fields of communication studies and sociology are also represented here. These different backgrounds are reflected in the way digital citizenship is defined. Some definitions are very close to Mossberger's above-mentioned definition like this: "Digital citizenship represents the capacity to participate in society online through frequent Internet use leading to economic, civic, and political outcomes" (Buente, 2015, p. 145). Others define digital citizenship as a certain kind of political participation; and yet another group of publications defines digital citizenship from the point of view of communication: "Citizenship is increasingly mediated by digital communication (…). These and other communication functions are all aspects of the emerging digital citizenship (…)" (Shelly et al., 2004, p. 257).

The publications in this stream cover a range of different issues, which can be clustered within four themes: 1) Inclusion and identity vs. exclusion and the digital divide, 2) The mobilization vs. the reinforcement thesis, 3) Communication of political issues, 4) Democracy and participation (see *Table 2*).

The first theme deals with inclusion in the digital world and the formation of an identity of the digital citizen, which is often discussed in opposition to exclusion and the digital divide. These publications have in common that they regard inclusion in the digital world as a precondition for political activities and they discuss the impacts of being either included or excluded, both at the individual level (D'Haenens, Koeman & Saeys, 2007) and at the national level (Sharma, Fantin, Prabhu, Guan & Dattakumar, 2016).

The second theme is 'the mobilization vs. the reinforcement theses'. One source describes these theses as follows:

> "The mobilization thesis argues that because of the availability of new information and communication technologies, previously disengaged groups of the population are being drawn into politics. The reinforcement thesis assumes that in the best case scenario, the Internet will not change existing patterns of political participation and, in the worst case scenario, may actually widen participatory gaps between advantaged and disadvantaged populations" (Oser, Hooghe & Marien, 2013, p. 91).

This academic controversy gives rise to a range of quantitative studies of off- and online political participation combined with standard measures of socio-economic status (Boulianne, 2009). However, it is difficult to find studies with a clear conclusion. Many studies find that some groups of the population become mobilized – especially the young generation – while other groups experience a reinforcement of their existing socio-economic status (Oser, Hooghe & Marien, 2013, p. 99). The following statement is an example of such a conclusion: "At present, political engagement on blogs and social networking sites clearly overcomes the historical underrepresentation of younger citizens with respect to political activity, but its impact on the socioeconomic stratification of participation is less certain" (Schlozman, Verba & Brady, 2011, p. 136).

Another focus within this group of publications is a reflection on the connection between social capital and political participation (Kittilson & Dalton, 2011; Vreese, 2007). The basic argument here is that interpersonal interaction in civic life is a fundamental condition for building social capital, which is a prerequisite for political participation. Hence, use of ICT will lead to a decrease in social capital. However, the studies in this review do not confirm this argument. A meta-analysis of 38 studies, conducted in 2009, concludes: "The meta-data provide strong evidence against the Internet having a negative effect on engagement. However, the meta-data do not establish that Internet use will have a substantial impact on engagement" (Boulianne, 2009, p. 193). This finding is further confirmed by another study, which concludes that: "… those who are culturally active offline are also active online. The same is true for political activity – the Internet reinforces rather than changes existing behavior patterns, and the relationship between the online and offline realms is one of supplementation rather than substitution" (Jensen, 2011, p. 15).

Summing up, the theme of mobilization vs. reinforcement is still controversial. Based on the studies represented in this review, it is not possible to draw clear conclusions about the impact of technology use on political engagement. However, there seems to be a consensus that technology use does not have a negative effect on political engagement. The question of whether or not technology use will lead to the mobilization of formerly inactive citizens, or merely provide already active citizens with a new tool for political engagement, still needs further investigation.

The third theme is dealing with the use of digital technologies in political communication. Under this theme, we find publications concerned with the increased use of social media resulting in a changing role of TV and hereby a possible lack of a common public opinion (Gurevitch, Coleman & Blumler, 2009). Other publications investigate how the internet and social media work as a source of information in connection with elections (Goh, 2015). They conclude that these technologies are a reliable and valuable tool for political information seeking.

The last theme is on democracy and citizen participation. A handful of publications deal with different kinds of activism. Two of these publications describe activism in China, but from very different perspectives. Jun Liu (2013) analyzes how the use of

mobile communication in two cases made it possible for citizens to share information about activism, not only locally but also internationally. He concludes that, in these two cases, mobile communication functioned as a counter-public sphere in which information about civic activism was spread. Enju Chi (2012) also analyzes cases where dissidents used the internet to carry out activism. Instead of analyzing how citizens used the technology, she analyzes censorship responses by the Chinese government. She identifies three different response strategies that reflect how the government interpreted the issue. She concludes:

> "In sum, ICT development has led to diverse online participation, but it has also equipped the government with an effective means to control that participation… The Chinese case analyzed in this article suggests that the relationship between the Internet and democracy depends on the government's strategies and responses" (Chi, 2012, p. 407).

The publications dealing with citizen participation are concerned with how to use ICT to include citizens in public hearings and rulemaking. One study reports an early hearing among organic farmers in the US, in which they were asked to comment on a rule proposed by the National Organic Program relating to genetic engineering and other issues (Shulman, 2003). The farmers succeeded in having the proposed rule changed, and a newspaper reported the episode as a success for citizen participation. However, the author raises some dilemmas that should be considered before using this form of deliberative (or discursive) democracy on a larger scale. He concludes:

> "Civic dialogue and social capital did not flourish. In terms of discursive democracy, it would be a mistake to conclude that the Internet allowed a more reflective understanding to emerge on all sides. Instead, a massive public protest resulted in an unusual accommodation of stakeholder demands" (Shulman, 2003, p. 262).

This analysis shows that the digital transformation has had a significant impact on the way citizens engage in political activities. Communication of political issues is transformed from mass-distributed one-way communication via TV to two-way communication between digital citizens and political parties or candidates by means of social media and everyday technology. Due to the digital transformation, it is much easier to find information about political parties and issues and much easier to express an attitude. In expressing their attitudes, digital citizens have a much bigger audience because their voice is heard not only within their own nation state, but also in principle all over the world. Using digital technologies for political activism is a double-edged sword, however. On the one hand, technology creates new possibilities for digital citizens to mobilize around political activities and disseminate their activism, but on the other hand, it also creates opportunities for governments to monitor, control, and oppress digital citizens. The digital transformation also affects the possibilities for citizen participation in decision-making. Using digital technologies to promote deliberative democracy in which digital citizens are directly involved in rule making seems promising at first glance. However, early experiences in this field created democratic problems by giving stakeholders a strong influence on lawmaking instead of fostering discursive democracy.

4.3 Digital Public Service

At first glance, the stream of literature on digital public service overlaps with the stream on political engagement. There is, however, a difference in perspective within the two streams. Whereas the focus in the stream on political engagement is on the political rights of citizens, the focus in the stream on digital public service is on the social rights of citizens to receive public service. Hence, the publications in the stream on digital public service deal mainly with two themes: 1) how citizens use and assess digital public services; and 2) the impact of the digital transformation on the relationship between citizens and public authorities in general, and street level bureaucrats, in particular (see *Table 2*).

Under the first theme, we find studies of how to assess digital public services. A couple of these studies take a point of departure in the Technology Acceptance Model (TAM), and investigate how to overcome the digital divide (Sipior, Ward & Connolly, 2011) or how to test the explanatory power of citizen satisfaction (Cegarra-Navarro, Eldridge, Martinez-Caro & Polo, 2014). We also find studies of citizens' digital behaviour when using such services (Borchorst, McPhail, Smith, Ferenbok & Clement, 2012), and of how designers can use this knowledge when they design information systems for digital public service to avoid the exclusion of a particular group of citizens (Cushman & McLean, 2008). These publications illustrate that there is considerable emphasis both on how to induce citizens to use digital public services, and on how to avoid a digital divide.

Under the second theme, we find a couple of publications investigating the impact of digitalization on encounters between citizens and bureaucrats. For instance, Anja S. Pors (2015) studies how street-level bureaucrats change their professional competences when they guide citizens in the use of digital public services instead of solving their problems directly. In that connection, another study finds that the digitalization of public services has resulted in greater exclusion of vulnerable citizens (Schou & Pors, 2018). Yet another study (Lips, 2013) focuses on how citizens' identity is reconstructed in their interaction with government agencies. That reconstruction may influence decisions concerning whether or not a citizen will receive social benefits. Finally, one study investigates how social work practitioners experience the impact of digital technology on their traditional face-to-face social work practice (Mishna, Bogo, Root, Sawyer & Khoury-Kassabri, 2012). The findings show how digital communication has dramatically changed the nature of professionals' relationship with citizens.

Taken together, the publications in this stream illustrate that the impact of the digital transformation is huge when it comes to the interaction between citizens and public authorities, in general, and is particularly acute in everyday interaction between citizens and street level bureaucrats. The analysis also reveals a concern about how to introduce citizens to digital public services. The underlying assumption in these publications is a desire to push citizens to use these services and thus they struggle to identify and remove every obstacle for this use. In this way, there is a push from the public authorities to transform the citizens into digital citizens.

4.4 Training and Learning

The literature in this stream shares an understanding of digital citizenship as entailing the right to be included in the digital world, and the duty to acquire the competences to behave correctly on digital platforms and to develop digital literacy. Hence, the content in this stream is very much in line with Marshall's description of the social right "to live the life of a civilized being according to the standards prevailing in the society" (Marshall, 1992/1950, p. 8). In accordance with this, central institutions are the educational system, including schools (from preschool to university) and libraries – especially school libraries. Most of the authors are teachers, librarians, or researchers in the field of education / pedagogy and information studies.

Very few publications in this stream define the concept of digital citizenship. Most simply use the term as a label for a certain level of technological competence and an appropriate digital behavior. These publications take their point of departure in the fact that, because we now live in a digital age, children need the skills to operate these technologies and the competences to use the information they find on the web (Acosta, 2014). However, the following definition of digital citizenship is quoted by several other publications in this stream: "Digital citizenship describes the norms of appropriate, responsible behavior with regard to technology use" (Ribble, 2009, p. 15). This is a very broad definition, but it is further divided into nine categories: (1) *Etiquette*, (2) *Communication*, (3) *Education*, (4) *Access*, (5) *Commerce*, (6) *Responsibility*, (7) *Rights*, (8) *Safety*, (9) *Security* (self-protection) (Ribble, Bailey & Ross, 2004, p. 7).

The publications can be clustered in six themes (see *Table 2*). The dominant theme taken up by most publications deals with practical and pedagogical ways to teach children (and citizens in general – some publications are about adult learning) to make smart and safe use of the different kinds of digital technology. Several publications describe experiments and practices introducing different technologies in the classroom (Gallagher & Stewart, 2011). Most of these publications are empirically grounded, such as when teachers evaluate experiments with technology at their own school (McNeill & Fry, 2012). However, there are also quantitative studies measuring the academic effect of the use of technology in teaching (Union, Union & Green, 2015). These publications report on a wide range of different technologies: social media like Facebook and Twitter, cloud computing, mobile devices (including telephones), and Web 2.0 technologies including Wiki and blogs. In addition, different concepts like Blended Learning, Flipped Classrooms, and Cable in the Classroom are mentioned. Overall, a cluster of very diverse publications addresses the issue of how to deal with practical and pedagogical challenges, including ethical and moral dilemmas (Elsley, Gallagher & Tisdall, 2014), when technology becomes part of teaching in schools and higher education institutions.

A second theme deals with teachers' competences. Some of these publications address training programs for teachers and evaluate the standards for these programs (Ayad & Ajrami, 2017). Others study the development of competences for in-service teachers (Blackwell & Yost, 2013) or the personal barriers experienced by teachers in using a given technology (O'Reilly, 2016). A couple of publications study the consequences of the difference between students as 'native' users of digital technologies, and teachers as 'digital migrants' (Wang, Hsu, Campbell, Coster & Longhurst, 2014).

The third theme is the role of libraries, notably how librarians and teachers can collaborate to teach information competences (Wine, 2016). Some publications study how

school libraries have converted into iCenters for educational technology (Hay, 2015), while others address the transformation of librarians into meta-data specialists (Simsek & Simsek, 2013). The fourth theme is concerned with online, or distance, learning. Several publications explore how to overcome the distance between teachers and students, and discuss how to create social networks in online learning (Barbour & Plough, 2009) or how to design personal learning environments using Web 2.0 technologies (Tu, Sujo-montes, Yen, Chan & Blocher, 2012).

The fifth theme contains a cluster of publications on the impact of school leadership on the use of technology in the classroom. Some of these, report on the correlation between leadership and the use of technology by teachers (Gürfidan & Koç, 2016). In different ways, these studies conclude that school leadership creates a particular culture and thereby sets the frame for how teachers use technology in the classroom. A literature review concludes that there is a huge lack of research on technological leadership of schools (Richardson, Bathon, Flora & Lewis, 2012). The last theme identified within this stream is cyber-bullying. The publications within this theme follow Mike S. Ribble's definition of digital citizenship. They map children's experience with cyber-bullying (Peker, 2015), and discuss the connection between ordinary bullying and cyber-bullying (Modecki, Barber & Vernon, 2013).

The analysis of the literature in the stream on training and learning shows that the digital transformation of the educational system has a tremendous impact on all involved parties. Teachers have to teach in new ways, including use of different types of digital technology. Pupils have to learn to behave properly in the digitalized environment and to avoid cyber-bullying and iPredators. Parents have to engage in the digital life of their children. School leaders have to take the lead and set up frameworks for the digitalization of their schools; and librarians have to transform their role from lending out books to becoming specialists in educational IT systems. Hence, the digital transformation has changed everyday life in public (as well as private) schools in significant ways.

5   Conclusion

As described in the introduction, the overall purpose of this review is to overcome the fragmentation of knowledge of the impacts of digital transformation on citizenship by asking how the academic literature describe the impacts of the transformation into a digital citizenship. Going through the academic literature on digital citizenship reveals that the digitalization of society has had a significant impact on the relationship and interaction between the state and its citizens. In all four streams of literature, we found publications reporting huge impacts.

Given these findings, it is possible to conclude that the systematic literature review unfolds the different ways citizens experience the impacts of the digital transformation and, in this way, the review gives a comprehensive picture of the many meanings and interpretations of digital citizenship. Citizens experience impacts in the way they communicate with public authorities as well as political institutions. They experience impacts in the form of surveillance of their private life not only from the national state but also from companies with a commercial purpose. They also experience impacts in the educational system where children and young people have to learn to behave in the

digital environment and teachers have to teach by means of digital technologies. Last, but not least, citizens experience huge impacts in the way they communicate about political issues. In this way, the comprehensive picture presented by this review confirms the earlier mentioned reviews concluding that digital citizenship is a multi-dimensional and context-dependent concept.

This multi-dimensional and context-dependent aspect of digital citizenship results in a dilemma in the use of the concept. A finding of this review is that different disciplines and institutions drive the different streams of academic literature. Although there are overlaps here and there, the common picture is that each discipline discusses and refers to digital citizenship within its own scientific circle. This should not really surprise us. However, the consequence of this is that the different streams define the concept of digital citizenship in different ways, which makes it difficult to discuss digital citizenship across the different streams and disciplines.

By investigating digital citizenship by means of a systematic and comprehensive literature review, this review contributes to the academic debate by showing the multiplicity of meanings of the concept of digital citizenship. This is important to bear in mind in future discussions of digital citizenship, not in the sense that every author should relate to all of the concept's different meanings; rather, authors in this field should clearly explain from which perspective, and with which purpose, they address the topic of digital citizenship. The multi-dimensional and context-dependent character of digital citizenship obliges us to position ourselves clearly when we take part in academic discussions on the topic.

The introductory presentation of the concept of digital citizenship raised two further questions. The first of these was how the literature described the process of inclusion and exclusion: Is the transformation into a digital citizenship possible for everybody or does the digital divide still exist? The literature review clearly shows that digital citizenship has not reached a global expansion. The digital divide still exists for at least two reasons. The literature reports about parts of the world where the digital infrastructure is lacking, or not sufficient, and we saw that this situation raises the question whether or not access to the internet and social media is a human right. In other parts of the world, the literature reports about governmental control and censorship, which prohibit citizens from using the digital platforms for political purposes. However, the exclusion is not always stemming from external factors, sometimes it is internal factors, like motivation, that makes citizens reject the usage of digital technologies. This becomes visible in the literature on highly digitalized countries such as Denmark. Here, citizens are obliged to communicate with the public authorities by means of digital forms and platforms, but the literature reports about citizens who reject using the digital technologies and instead show up at the town hall to get help to apply for social benefits. This reveals a dilemma about the transformation into a digital citizenship. Where most of the reviewed literature takes it for granted that the digital transformation is an advantage, these studies show that a part of the population is not motivated to transform into a digital citizenship. Hence, the dilemma is whether the transformation into a digital citizenship is a human right or if it is a human right to avoid this transformation.

The second question, raised by the introductory presentation of the concept, contains a concern about how the digital citizen can use digital technologies for political purposes. This is investigated by asking how the digital technologies change the way

citizens interact with the political community. The literature review reveals that the digital transformation has a huge impact on the way citizens communicate about political issues. By means of digital technologies, it is now possible to find political information in an easy way just as it is possible to communicate directly with political parties and other political actors. In this way, the review confirms the assumption from the early literature that the transformation into a digital citizenship is a condition for political engagement in a digital world. However, the literature also points at some severe dilemmas in this transformation. One dilemma is that using digital technologies for political activism can work like a double-edged sword if the authorities turn it into governmental control and surveillance of the single citizen. The other dilemma in this field, mentioned by the literature, is that the explosion of digital platforms for political debate can lead to a fragmentation of the public opinion. In the days of national broadcasting TV, the political debate was informed by arguments from many different positions whereas the political debate on social media and other digital platforms may be restricted to only a single political position. In this way, the political debate is taking place in so-called ecco-chambres where the participants confirm their common opinion, and nobody is confronted with other political opinions. This is probably a dilemma, which will be further investigated in the following years.

Altogether, this systematic and comprehensive literature review clearly shows both the variety of impacts of the digital transformation on citizenship and the variety of the concept within academic disciplines.

Note

1   The appendix is available online at https://doi.org/10.3224/dms.v14i1.09.

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