Chapter 4
Developing Digital Citizenship and Civic Engagement Through Social Media Use in Nordic Schools

Ingrid R. Christensen, Heidi Biseth, and Lihong Huang

Abstract In this chapter, we explore the factors involved in developing digital citizenship through social media use in schools for 14-year-old students in four Nordic countries. The call for digital citizenship and digital citizenship education stems from the new and multiple ways in which young people are engaging in and communicating about civic issues through the use of social media. Schools could be considered to play a core part in developing students' digital civic engagement, yet the field of digital citizenship education and the factors that enable engagement in schools are underexplored. To address this issue, in this chapter we have completed a mixed methods study analyzing the national curricula in the four Nordic countries and complementing this with an analysis of data from school leaders, teachers, and 14-year-old students participating in the IEA International Civic and Citizenship Education Study (ICCS) 2016. The findings of the analysis show that digital citizenship and citizenship in general are prevailing ideals in the national curricula and that schools are well-equipped technologically. Yet, both teachers and students are ambivalent in their use of social media for developing digital citizenship. Thus, we argue that digital citizenship in education is a manifold and emerging phenomenon and that students might be important guides for its further development in schools.

Keywords Digital citizenship education · Civic engagement · Social media · International Civic and Citizenship Education Study (ICCS) 2016 · Nordic countries

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4.1 Introduction

In this chapter, we explore the factors involved in developing digital citizenship education and promoting civic engagement through the use of social media[1] among 14-year-old students in four Nordic countries. The call for digital citizenship education stems from a fast-developing society with new and multiple ways of participating in global knowledge circuits and engaging with the world. The internet and social media have paved the way for a new era of global communication (Loader and Mercea 2011; Sevincer et al. 2018), moving beyond the context of the nation-state (Jorba and Bimber 2012). Consequently, new forms of global citizenship and political participation are emerging (Frau-Meigs et al. 2017; Carretero et al. 2017; Parker and Fraillon 2016). Digital resources have opened up new possibilities for civic engagement. Social media represent several opportunities for learning and enhancing employability as well as a means of managing one's own social life and developing civic engagement. These digital developments increase the space for interaction and change our ways of connecting and engaging with each other in what could be seen as a new public space and a modern arena of political and civic engagement. Digital tools and social media (e.g., online social platforms such as Twitter, Facebook, Instagram, Snapchat, blogs, forums, and videos) have paved the way for individuals to participate in and engage with local and global issues through innovative means. New and varied digital tools and social media continually trigger further evolution in the way people—especially young people—communicate with friends, access entertainment, and engage with communities of interest (European Commission 2009, p. 3). However, the constant flow of information and targeted content may also challenge individuality and critical discernment. Digital tools represent shifting and multiple realities, blurring the means and ends of the polis (Frau-Meigs et al. 2017). Thus, the digital represents both possibilities and challenges, making digital civic engagement a complex enterprise.

School authorities have high aspirations for the school and its role in developing digital citizenship on local, national, and international levels. Schools can be considered to be a key factor in developing digital citizenship.[2] Along with the aims of developing digital competencies, educating informed and responsible citizens is a major challenge (e.g., Parker and Fraillon 2016). Teachers can be expected to be role models for employing digital skills in their classrooms, supporting students in developing their digital competencies and manoeuvring in the digital arena (Biseth et al. 2018). Digital citizenship is counted as a core competency for students in the 21st century (e.g., Voogt and Roblin 2012)—it targets the availability of technology

[1] In our discussion of social media, we used the term "social media" to describe a collection of online social networking sites and tools (e.g., Facebook, Twitter, YouTube) and shared content sites (e.g., blogs, discussion forums) that people use to socially interact and distribute content with other groups of people (Koršňáková and Carstens 2017).

[2] Conference on the Future of Citizenship and Human Rights Education in Europe (Strasbourg, France, June 20–22, 2017, www.coe.int/en/web/edc/report-on-the-state-ofcitizenship-and-human-rights-in-europe).

and digital tools as well as the competencies to handle, participate in, and engage in society. Yet, the area of digital citizenship education is not settled as a field, and the development of definitions of digital citizenship is considered a key need (e.g., Council of Europe 2020). Furthermore, the development process of digital citizenship from initiating digital citizenship in the national curricula to the specific skills the students learn may not be a streamlined one. Different levels and actors in the school organization might accentuate various factors as important for developing digital citizenship.

The International Civic and Citizenship Education Study (ICCS) 2016 of the International Association for the Evaluation of Educational Achievement (IEA) is the first study to establish measures for investigating the conditions for digital citizenship education. Unlike ICCS 2009, ICCS 2016 includes items that connect digital tools, social media, and democratic engagement in regard to both principals, teachers, and students. The international report from ICCS 2016 lists some factors for citizenship (Schulz et al. 2018a), such as social media. The access to social media is high across all the countries in the ICCS 2016 study. The students' use of social media for civic engagement is increasing, but it varies considerably across the participating countries (Schulz et al. 2018a, p. xvii).

The research on digital skills in the education field is vast, but limited research has been conducted on how to develop citizenship through digital tools and even less through social media (Purvis et al. 2016; Biseth et al. 2018). Schools seem to have fallen behind in promoting digital citizenship compared to out-of-school activities (Gleason and von Gillern 2018). Kahne et al. (2016) argue that teaching about the dangers of digital participation discourages the students' online political participation and suggest principles of supporting the students for civic engagement in teaching. However, few studies investigate the many factors needed for the development of digital citizenship. The development depends not only on the teacher but also on different organization levels in schools.

Thus, this study aims at mapping the current contributory factors for the development of digital citizenship through social media use in schools. The Nordic schools are of particular interest, being ranked as top-level democracies and as technologically advanced and having well-funded public education systems (Economist Intelligence Unit [EIU] 2018; Freedom House 2019). We, therefore, pose the following research question:

What factors indicate the development of digital citizenship through social media use in schools in the four Nordic countries?

In this study, we map and explore the contributory factors for the development of digital citizenship through social media use on different organization levels in schools. We have conducted a mixed-methods study of qualitative and quantitative data from the four Nordic countries of Denmark, Norway, Sweden, and Finland. First, we examine how the national compulsory school curricula describe factors for the development of digital citizenship through social media use in schools. Second, we analyze factors for developing digital citizenship as described by Nordic principals, teachers, and students participating in ICCS 2016.

4.2 Conceptual Framing of Digital Citizenship in Education

The overall field of this study is digital citizenship education, a relatively new research area. Digital citizenship education is a constructed phenomenon that combines digital tools, social media, and citizenship education. At the heart of digital citizenship education lie ideas of democratic education. Democracy and citizenship education are also socially constructed phenomena, comprising several values, discourses, and practices of civic society and dependent on human interaction and participation. Democracy in the education context is limited not only to academic knowledge about political systems and students' ability to use their political competence to influence school life and in society; democracy also represents the ideas, values, civic attitudes, and skills needed to engage with each other and to live together despite different interests (Zyngier 2012; Barber 1984, pp. 117–120). Education can be understood as a core enterprise for the promotion of civic values and for developing individual and collective democratic intelligence (Goodlad 1994). The ways in which citizenship is understood and practised in educational politics by principals, teachers, and students are decisive for what kind of citizens the society can foster (Westheimer and Kahne 2004).

Civic engagement in political and social issues has in recent decades increasingly been dependent on social media, creating the field of digital citizenship (Kahne et al. 2014). Digital citizenship can be defined as "the confident, critical and creative use of ICT [information and communications technology] to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society" (Ferrari 2013). Another definition is "confident and positive engagement with digital technology" used to actively participate in society, communicate with others, and create and consume digital content (Frau-Meigs et al. 2017, p. 14). The field of digital citizenship education embraces several pedagogical and political ideals and has yielded several teaching models (e.g., Kahne et al. 2016).

Nevertheless, a basic problem regarding digital citizenship in education is that it lacks conceptual groundings on a practice level (Kahne et al. 2016). We assume part of this problem is that digital citizenship appears to be due to the different priorities and values in school. Goodlad (1994) pinpoints the challenges of promoting and developing moral values in school, which he sees as a non-linear process. The intended moral values on a policy level in schools might not be the same as how the teachers teach or what the students learn in school. Goodlad (1994) describes different levels of the curriculum, for instance, (1) *formal curriculum*, the formal and legal documents concerning the education system and what should be taught at schools; (2) *perceived curriculum,* which can be understood as the interpretation of users, such as principals and teachers[3]; and (3) *curriculum experience,* which reflects the students own experience of the content in school. Moral values are not

[3]Goodlad (1994) refers to two more curricuum levels—"ideal curriculum," the ideological basis upon which a country chooses its formal curriculum, and also the teachers' "practiced curriculum." This model has been widely used and elaborated upon (e.g., Westbury 2008; Akker 2004), however, less with the aim of describing the complexity of the promotion of moral values in education.

only differently understood on different curricula levels but they appear as separate practices, accentuating different concepts and factors in regard to how they can be developed (Westbury 2008). In this study, the exploration of different curricula levels might facilitate the creation of a wider "map" showing various factors for the development of digital citizenship through social media use.

4.3 Data and Methods

To explore and map the factors indicating the development of digital citizenship through social media in schools, we have selected material from the Nordic countries. We have selected the Nordic countries as they have many similar historical, political, societal, and cultural characteristics and tend to have comparable and general high scores on democratic indicators (e.g., EIU 2018; Ringen 2007, 2011; Freedom House 2019).[4] They also have well-equipped public school systems, technically and materially, representing an "ideal" scenario for the development of digital citizenship through social media.[5] Rather than seeking to prove a Nordic profile and contrasting it with the results from other countries, we treat the Nordic results as a single-case study and investigate how educational policies and practices may vary and interact on different curricula levels between countries with relatively similar societal features over the course of a decade (e.g., Arnove 2013; Bray and Thomas 1995).

The data analyses present both qualitative and quantitative information representing the different curricula *levels* through mixed methods (Borrego et al. 2009) and a sequential exploratory design (Cabrera 2011). The curricula levels of Goodlad (1994) have served as a guiding framework for structuring the analysis. We used qualitative data from the national curricula of Denmark, Finland, Norway, and Sweden and quantitative data from these Nordic countries obtained through the ICCS 2016 study. The qualitative national curricula represent the *intended curriculum* on the emphasized factors for developing digital citizenship in schools. The quantitative ICCS data provide information about the *perceived curriculum*, including principals' and teachers' information and views on the technical and didactical factors for developing digital citizenship. The quantitative ICCS data also illuminate factors of the *experienced curriculum* from the student responses on their use of social media and civic engagement.

[4]This does not mean that the Nordic findings do not have similarities with findings from other countries in the ICCS survey. However, we delimit the Nordic context as one case and discuss possible links between discourse and pedagogical and practical facilities across these countries.

[5]The ICCS 2016 international report concludes that, for instance, high socioeconomic status is associated with increased student civic knowledge (Schulz et al. 2018a, p. 22).

4.3.1 Qualitative Data Analysis

The qualitative analysis is performed on the national primary school curricula and represents the *intended curriculum* level (Goodlad 1994). The contents from these documents suggest factors that support the development of digital citizenship through social media. The materials of analysis consist of the Danish *fælles mål* (common goals) for the subjects of Danish and social studies (Undervisningsministeriet 2009a, b); the Norwegian *generell del* (core curriculum) in the national curricula *Kunnskapsløftet K06* (Utdanningsdirektoratet 2006); the core curriculum in Finland, *National Core Curriculum for Basic Education* (*Perusopetuksen opetussuunnitelman perusteluonnos*) (Finnish National Board of Education 2016); and the Swedish core curriculum (*Läroplan L11*), particularly the section prescribing the mandate and overall aim given to the sector (Skolverket 2011).[6] Knowledgeable/native educators have read the Danish, Swedish, and Norwegian curricula in these languages. The Danish *fælles mål* is used in planning, implementing, and evaluating education, and are thus similar to the core curricula in Finland, Norway, and Sweden. These common goals are nationally prescribed aims that students should reach in each subject by the end of their compulsory education. The education acts and core curricula constitute the legal outline for Nordic schools. The formal curricula chosen for analysis are the core curricula of the four countries that were valid for the period in which ICCS 2016 was conducted. These curricula were developed at different points in time, from 2006 in Norway to 2014 in Finland. In addition, we assume some differences between the countries based on, for example, each country's tradition, conventional practice, digital equipment available, as well as the effectuated date of the core curricula that may have had a possible impact on the development of the concept and its consequences for perceived and experienced digital citizenship. In treating the Nordic countries as four case studies that we can compare, we aim at mapping conceptual factors indicating the development of digital citizenship through social media in schools.

To analyze the qualitative material, descriptive thematic analysis is performed using NVivo (Boyatzis 1998; Bryman 2012). The indicators for the promotion of digital citizenship were generated from reading the curricula and creating themes from the material. After a general reading of the document, we first used the document finder and searched for "digital citizenship" and "social media." Second, we extended the terms of "citizenship" into "citizen," "civic," and "democracy/democratic" and "digital" into "ICT" and "media." Third, we conducted another search using associated terms such as "participation," "engagement," "technology," and "values." In all these three stages we analyzed how the different curricula emphasize different keywords and how they were combined.

[6]We selected the national curricula in the Nordic countries. Some of the core curricula specify indicators of digital citizenship through social media use in the general parts, some in the subject descriptions.

4.3.2 *Quantitative Data Analysis*

The quantitative analysis using the ICCS 2016 data enables access to principal, teacher, and student emphasis on factors that enable digital citizenship. ICCS 2016 applied a sampling strategy to ensure representativeness of the data (Köhler et al. 2018) from all participant countries, while the pooled data used in the analysis of this chapter from the four Nordic countries contain responses from students ($n = 18{,}962$), teachers ($n = 6{,}138$), and school principals ($n = 630$) from 669 lower secondary schools (for more details on the ICCS data, see Chapter 1 of this book and also Köhler et al. [2018] and Schulz et al. [2018a]). To perform the quantitative analysis, we used the IEA IDB Analyzer to perform descriptive statistics such as percentages and means of responses along with correlation analyses. Country sampling weights were applied respectively in analyzing responses from school principals, teachers, and students, and standard errors are computed using the jackknife repeated replication (JRR) method (Köhler et al. 2018; Schulz et al. 2018b).

4.3.3 *Mixed Methods*

We have mapped both data sources on different curricula levels to display discourses and priorities in the national core curricula, available equipment, teachers' teaching activities, and students' experienced content. We did not seek to predict or define any conceptual correlations between the curricula levels as each level gives different information and represents different practices (Cohen et al. 2007; Yang 2007). Rather than attempting to determine causal relations between all the curricula levels, we aim at bringing forward the complexity and nuances in the relationships between them in the teaching of digital citizenship and civic engagement through social media in schools. Separating the curricula into different levels shows that the curriculum is more than teaching content and methods and measuring success as results—it also consists of different understandings that might entail different social practices and draw on various discourses and logics. We conclude by discussing the relevance of different factors for making analytical generalizations about digital citizenship education (Flyvbjerg 2011; Roald and Køppe 2009).

4.4 Factors in Teaching Digital Citizenship Through Social Media in the Formal School Curricula

The national curricula provide information on factors that enable digital citizenship and civic engagement via social media in schools through the formal curricula that were operational at the time ICCS 2016 was conducted. The national curricula in the four countries indicate the political intent behind developing digital citizenship

education through the use of social media. All four countries have education acts that describe democratic values as fundamental underpinnings of their education systems. These education acts describe school as an important space for developing democratic traits, values, and skills (Undervisningsministeriet 2007; Basic Education Act 1998; Ministry of Education and Research 1998; Utbildningsdepartementet 2010). However, the curricula may vary between the Nordic countries and may also show development over the years.

The **Norwegian** core curriculum (Utdanningsdirektoratet 2006) places relatively low importance on citizenship, and there is no description of digital tools and no occurrence of any terms connected to social media. Citizenship is not mentioned explicitly, and democracy is described in general terms, for example, a major task for education is to promote democracy, national identity, and international consciousness (p. 2). Common knowledge, traditions, and values secure a democratic society as well as the democratic rule of law and equal political participation (pp. 3, 15), preventing undemocratic manipulation and to prevent social inequalities (p. 14). One aim of education is to expand student participation (p. 2). Neither digital tools nor ICT are explicitly mentioned. Yet, the curriculum describes technology not in specific terms but rather in philosophical terms, being a tool for problem-solving and for improved solutions (pp. 6, 9, 20). Technology is also described as a promoter of values; for instance, it is often used as an expression of empathy, facilitating the lives of vulnerable humans (p. 9), and represents historical mediating artefacts for a division of labour and power balance (p. 9). Technology seems to contain an ambiguity by also including negative connotations—as something being used in destructive weapons and the destruction of the environment (pp. 2, 9, 20). Media and mass media are mentioned in general as a flow of news (p. 15) and that natural relations are exchanged through media (p. 18), indicating a divide between the digital and the so-called "real" world. The students are supposed to have training in getting in touch with authorities and media (p. 18). Thus, technology and references to the internet can indicate a divide between the digital and the analogue, treating digital media from a distance, something that one should protect oneself against and use with caution.

In **Denmark**, the core curriculum is described in subject-specific documents. The curriculum for the subject of Danish expresses themes that may indicate citizenship and the use of digital tools in the *fælles mål* (common goals). ICT as a skill is particularly visible in the subject of Danish, where students are expected to be "able to make presentations using digital tools" (Undervisningsministeriet 2009a, §2-2, Point 15), acquire knowledge of printed and electronic media (§2-3, Point 8), and make use of ICT and multimedia (§2-3, Point 9). In a democratic society such as Denmark, the citizen must have access to and experience with using the media, for instance, for reading letters, paper articles, blogs and letter writing to public authorities (p. 57). The digital, however, is somehow described as a particular genre (digital texts, which are named in addition to fiction and academic literature) (pp. 6, 8, 10). Digital texts are also cited as something other than printed texts (pp. 14, 19, 20, 22). The main digital competence is represented by information searches (pp. 6, 24, 27, 28) although the students are also supposed to use the digital media and

critically relate to them in analysis, communication, and in production (pp. 28, 30). However, the means of communication and production are not specified.

Issues of democracy permeate the Danish social studies (*samfundsfag*) curriculum. Concepts such as "digital" or "social media" do not appear; instead, it describes "information technology" (IT) and "media." Students are supposed to give examples of how IT affects political participation and how power is exercised locally, nationally, and globally (Undervisningsministeriet 2009b, pp. 7, 9). However, the curriculum presents the following three different perspectives on the use of information and communication technology ICT[7]: a collection of information, communication, and collaboration (p. 48). To a large degree, ICT and media are connected to using the internet and to collecting and critically evaluating information (pp. 38, 48). The internet is described as central, and its major advantage is accessing information (p. 48). The curriculum mentions weblogs and blogs as possible channels for communicating with other students nationally or abroad (p. 49): "The contact with other students and the exchange of information, attitudes, and products can, for instance, happen in connection with the work contained in the everyday lives of young people" (p. 49, our translation).

The **Swedish** national curriculum begins with the statement that the Swedish school rests on the foundation of democracy (Skolverket 2011, p. 1). It emphasizes the students' capabilities to act in a complex reality, including increased digitalization and the flow of information and rapid changes (p. 3). It states that schools should contribute to the students' understanding of how digitalization affects individuals and the development of the society (p. 3). Digital competence is defined as the use of digital techniques and understanding the possibilities and risks of the digital information and having a critical and responsible approach to digital techniques (p. 3). The promotion of moral values is described in terms of how students are expected to take and express ethical stands based on human rights, foundational democratic values, and personal experiences. It does not mention digital tools or competencies in its description of the students' learning nor students' possibilities to influence society. One of the principal's responsibilities is to provide updated learning tools, such as a school library and digital tools (p. 12).

In the **Finnish** core curriculum, the information and communication technology (ICT) competences are one of seven transversal competences; they are described as an important civic skill. The Finnish curriculum underscores technology as a moral enterprise and claims that technology is based on human values (Finnish National Board of Education 2016, p. 39). Technology is also considered a matter of moral responsibility and the curriculum encourages the school to "steer technology into a direction that safeguards the future of humans and the environment" (p. 39). The school should teach students to make "sensible technological choices" and to be guided in how to use technology responsibly and ethically (p. 57) as well as to practice source criticism and critical insight in terms of how information is produced (p. 945). ICT is described in the Finnish core curriculum both as "an object and a

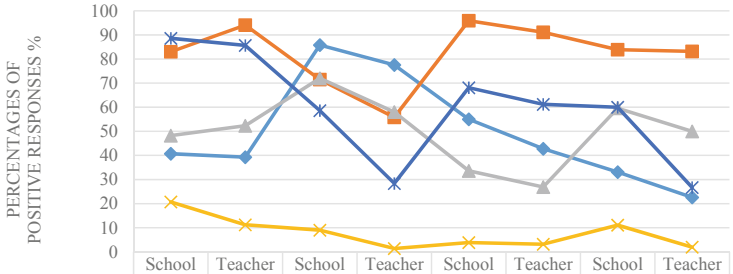
[7]The curricula documents use different terms for digital communication; for instance "IT" (information technology) and "ICT" (information and communication technology).

tool of learning" (p. 59) as well as an opportunity for individual creativity: "ICT provides tools for making one's thoughts and ideas visible in many different ways" (p. 60). ICT is a means of "practical skills and personal production" and "information management and inquiry-based and creative work" as well as of collaborative working skills (p. 27) and interaction and networking (pp. 944–945). The teaching and learning include using social media services to experience the importance of cooperation and interaction for learning, exploratory work, and creativity (p. 946). In the Finnish core curriculum, the use of ICT is not only a skill but a competence to be used for meaningful communication and media to practice generic skills, and also to practice civic skills (p. 59) The several ways of using social media for interaction, networking, taking responsibility for communication, and for involvement are described for students in grades 7–9 (p. 945). This shows that digital media is not only a matter of communication as such but that it bears on elements of responsibility for roles and communication as well as involvement.

Through their formal curricula, all four countries' education systems are given a relatively strong political role in promoting societal values. The national core curricula active at the time of the ICCS 2016 study, however, indicate varied and relatively weak positions on digital citizenship education and not least the role of social media in it. Citizenship seems an important feature of all the school curricula, however with highly variable approaches—from a philosophical approach to technology (Norway, Sweden), to technical digital tools (Denmark), to value-driven engagement in social media (Finland).

4.5 Teaching Digital Citizenship Education Through Access to Digital Equipment in Schools

In this section, we present and discuss aspects of the perceived curriculum (Goodlad 1994) for digital citizenship education and report the access to digital equipment among principals, teachers, and students. Figure 4.1 is a visual presentation of the percentages of school principals' responses to the question as to whether their schools are equipped with IT facilities for teaching and teachers' responses in regard to whether they have ever used those IT facilities in teaching during the current school year. According to the principals' reporting, the Nordic countries have a high level of access to a variety of digital tools. The schools in Norway have the highest access to portable computers (95.9%), with Sweden and Denmark next highest (83.9 and 83%, respectively). Finland has a relatively high use of desktop computers (85.8%). Almost all Danish classrooms have interactive whiteboards, whereas the lowest access to interactive whiteboards is in Finland (only 60% have one). Meanwhile, teachers' use of these devices in teaching appears to correspond to the availability of these devices in schools. Figure 4.1 shows that, in general, portable computers and interactive whiteboards are most in use by teachers in Denmark and Norway, while Swedish teachers use mostly portable computers and tablet devices in teaching. In Finland,



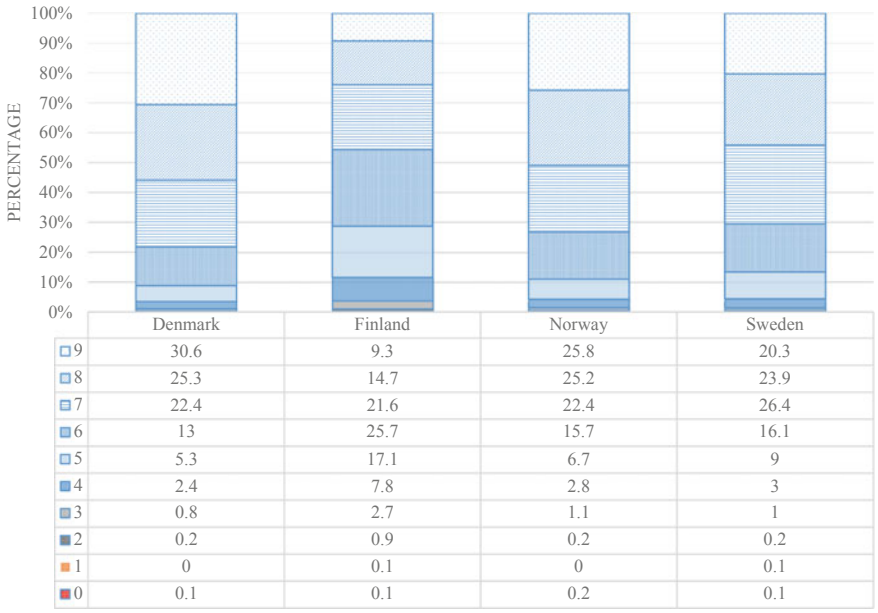
	School facility	Teacher use^	School facility	Teacher use	School facility	Teacher use	School facility	Teacher use
	Denmark		Finland		Norway		Sweden	
Desktop computers	40.7	39.3	85.8	77.6	55	42.8	33.1	22.6
Portable computers (laptop, notebook, netbook)	83	94.1	71.5	55.8	95.9	91.1	83.9	83.1
Tablet devices (e.g. iPad)	48.2	52.3	72	58.0	33.6	26.9	59.6	50.0
E-readers (e.g. Kindle, Kobo, Nook)	20.7	11.2	9	1.4	3.9	3.2	11.1	2.0
Interactive whiteboards	88.6	85.7	58.6	28.4	68.1	61.2	60	26.7

Fig. 4.1 Principals' responses in regard to IT facilities available for teaching at their schools and teachers' responses as to whether they have used these devices in their teaching during the current school year (*Notes* All calculations are facilitated by the IDB Analyzer by applying total school weights to school principals' responses and applying total teacher weight, respectively [see Appendix Table 4.3]. No significant test is performed as we consider it not necessary. ^ Participation rates for the teacher survey were below the ICCS 2016 international standard in Denmark)

the most in-use devices are desktop computers and portable computers together with tablet devices. However, it appears that e-readers are the least available and least in-use devices in all Nordic schools.

Principals, teachers, and students in each country report a variation of online devices and levels of access to digital devices. The students in all the Nordic countries report nearly full access to the internet (99%), while nearly all students have online opportunities via phones, tablets, and computers (see Fig. 4.2). Figure 4.2 shows that the majority of student homes in all four countries have more than six digital devices in regular use. Although less than 1% of student homes have none or only one or two devices, this still can be a concern as 1% represents several thousand in each country. However, the results presented in Figs. 4.1 and 4.2 show that students have almost full access to online information devices both at school and at home for collaboration, participation, and engagement among all Nordic countries.

In the second section, we analyze the next factor to investigate how teachers make use of digital opportunities for teaching and learning activities. Figure 4.3 presents teachers' positive responses to the question asking if they have received training either from pre-service or in-service or both trainings on topics and skills related to responsible internet use (Q19) and the question asking how much teachers feel well-prepared or very well-prepared to teach the subject of responsible internet use (Q18) (see Appendix Table 4.4 for descriptions). The majority of the teachers in the Nordic schools feel well-prepared to teach the subject of responsible internet use although



	Denmark	Finland	Norway	Sweden
9	30.6	9.3	25.8	20.3
8	25.3	14.7	25.2	23.9
7	22.4	21.6	22.4	26.4
6	13	25.7	15.7	16.1
5	5.3	17.1	6.7	9
4	2.4	7.8	2.8	3
3	0.8	2.7	1.1	1
2	0.2	0.9	0.2	0.2
1	0	0.1	0	0.1
0	0.1	0.1	0.2	0.1

Fig. 4.2 Percentages of student homes with numbers of IT devices in regular use (*Notes* Number of IT devices is derived from the sum of students' responses to the question "How many of the following devices are used regularly in your home?" (Q12) on three types of devices, i.e., desktop or portable computers, tablet devices or e-readers, and mobile phones, with the response options "None = 0, 1 = 1, 2 = 2, and 3 or more = 3" (see[Appendix Table 4.3)]. Calculations presented here are facilitated by IDB Analyzer applying total student weight [see Appendix Table 4.3 rows at the bottom])

only one-third of the teachers in Denmark and Sweden and less than half of those in Norway have received training on this subject. Among all the Nordic teachers, it appears that a higher proportion of teachers in Finland have received relevant training than in the other three countries, while teachers in Sweden and Norway feel most well-prepared to teach the subject of responsible internet use.

Meanwhile, most teachers in Nordic schools use internet information and ICT both for lesson preparation and for teaching in the classroom although there are small differences in the usages of ICT between the countries. Figure 4.4 shows the percentages of teachers' use of ICT in two form, one is using the internet for information when they prepare lessons (Q16), and the other is working with students to use ICT and internet information in classrooms (Q17) (see Appendix Table 4.4 for descriptions). Over half of the Danish teachers both use the internet for information in preparing lessons to a large extent and use ICT when working with students on information from the internet—more than those in the other three countries.

In general, teachers in all four countries report a high level of use of the internet in their classes. In Denmark, less than 1% never use the internet for information, whereas 8% of the teachers in Finland report the same. The teachers report a high level of use of

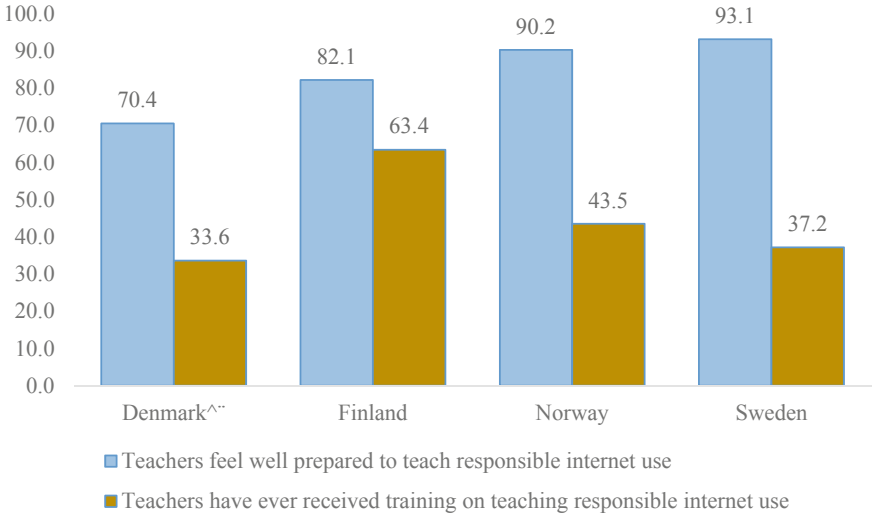


Fig. 4.3 Percentages of teachers who have received training and feel well-prepared for teaching responsible internet use (*Notes* ˆ Participation rates for the teacher survey were below the ICCS 2016 international standard in Denmark. Calculations presented here are facilitated by IDB Analyzer applying teacher weights [see Appendix Table 4.4])

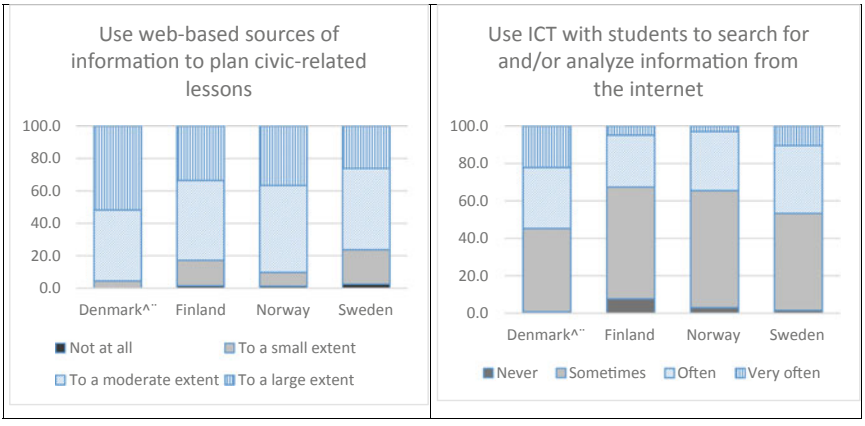


Fig. 4.4 Teachers' use of ICT for working on planning lessons and working with students in the classroom (*Notes* Participation rates for the teacher survey were below the ICCS 2016 international standard in Denmark. Calculations presented here are facilitated by IDB Analyzer applying teacher weights [see Appendix Table 4.4])

web-based sources to plan civic-related lessons. In Denmark, Finland, and Norway, 75–95% of the teachers report using web-based sources to plan civic-related lessons. However, almost no teachers in any of the countries work with students on any social network, forum, or blog to support environmentally related actions (see Appendix Table 4.4).

4.6 The Use of ICT and Social Media for Digital Citizenship and Civic Engagement in Schools

In this section, we examine the use of ICT in connection to civic issues as well as civic engagement for political or social issues. In this stage, we examine the experienced curriculum and the students' reporting of digital citizenship on social media in school. Table 4.1 presents the descriptive data of three questions and six items the students answered regarding their use of IT for civic engagement now and in the future (in %).

The students seem to neither post nor share political or social issues on the internet as about 80% in all four countries answer that they never share any political or social content. It is worth noting that about 10% in all countries share political or social content online once a month or more often, indicating a gap between a large "never engaged" and a small "very engaged" cohort. However, 30–40% of the students in all four countries think that they will contribute to an online discussion forum on a social or political issue *in the future*. There seems to be a divide between sharing an online discussion and initiating any online activity themselves. Roughly 15–20% of the students are likely to organize an online group to take a controversial political social or political stance in the future, with higher scores in Norway and Sweden. Those who would certainly or probably participate in an online campaign yield identical results in Denmark, Norway, and Sweden, with 35–40%; Finland has 28%. For all the questions about participating and engaging in an online discussion, organizing a group, and participating in an online campaign, students in the four different countries are quite similar: a large group, 50–60%, do not think that they will engage in any of these activities in the future.

Most of the students report that they never comment on a political or social issue on the internet or social media or even on other people's online posts. Furthermore, most of the students report that they are not likely to take part in organizing an online group to take a stance on a controversial political or social issue. There is a slightly higher probability that they will contribute to an online discussion or an online campaign on political issues. These findings are similar across all four Nordic countries.

Table 4.2 presents a correlation analysis between current and future online participation with current and future offline civic engagement using scales derived from student responses to items of specific questions on their current and future participation both online (items in Table 4.1) and offline (current civic engagement in the

Table 4.1 Student responses and experienced curriculum: ICT use (in %)

Items of interest	Response alternatives	Denmark	Finland	Norway	Sweden
Students' current use of ICT to find information about political and social issues (Q14G)	Never	30.6 (1.0)	55.3 (1.0)	39.8 (0.8)	34.7 (1.0)
	Monthly	31.6 (0.7)	26.9 (0.8)	33.6 (0.6)	32.1 (0.9)
	Weekly	26.5 (0.7)	14.2 (0.8)	20.6 (0.6)	24.2 (0.9)
	Daily	11.4 (0.6)	3.6 (0.4)	6.1 (0.3)	9.0 (0.6)
Total		*100*	*100*	*100*	*100*
Students' current use of ICT to post about political or social issues (Q14H)	Never	88.9 (0.6)	88.8 (0.7)	86.9 (0.5)	85.3 (1.0)
	Monthly	7.8 (0.4)	8.2 (0.6)	8.7 (0.4)	9.8 (0.7)
	Weekly	2.2 (0.2)	2.5 (0.3)	3.0 (0.3)	3.3 (0.3)
	Daily	1.1 (0.2)	0.5 (0.1)	1.4 (0.2)	1.6 (0.3)
Total		*100*	*100*	*100*	*100*
Students' current use of ICT to share about political or social issues (Q14I)	Never	85.4 (0.7)	86.1 (0.8)	83.3 (0.6)	79.1 (1.2)
	Monthly	10.2 (0.6)	10.4 (0.7)	12.0 (0.5)	13.9 (0.7)
	Weekly	3.3 (0.3)	2.7 (0.3)	3.4 (0.2)	5.2 (0.6)
	Daily	1.1 (0.2)	0.8 (0.2)	1.3 (0.1)	1.9 (0.3)
Total		*100*	*100*	*100*	*100*
Students' future contributions to an online discussion forum about social or political issues (Q30E)	Certainly will not do this	15.1 (0.6)	11.7 (0.6)	16.9 (0.5)	12.4 (0.7)
	Probably will not do this	55.8 (0.9)	56.9 (0.9)	47.6 (0.8)	46.0 (0.8)
	Probably will do this	25.1 (0.7)	26.1 (0.8)	28.0 (0.7)	31.7 (0.9)
	Certainly will do this	4.0 (0.3)	5.3 (0.5)	7.6 (0.4)	9.9 (0.6)
Total		*100*	*100*	*100*	*100*
Students' future organization of an online group to take a stance on a controversial political or social issue (Q30F)	Certainly will not do this	19.9 (0.6)	18.6 (0.7)	22.1 (0.6)	19.4 (0.7)
	Probably will not do this	63.9 (0.8)	65.1 (0.8)	57.0 (0.7)	61.9 (1.2)
	Probably will do this	13.8 (0.6)	13.1 (0.6)	16.1 (0.6)	14.5 (0.9)
	Certainly will do this	2.3 (0.2)	3.2 (0.3)	4.8 (0.4)	4.2 (0.4)
Total		*100*	*100*	*100*	*100*
Students' future participation in an online campaign (Q30G)	Certainly will not do this	13.4 (0.6)	10.6 (0.7)	16.9 (0.5)	16.0 (0.7)
	Probably will not do this	47.1 (0.8)	53.7 (1.1)	44.5 (0.7)	55.2 (1.1)
	Probably will do this	34.7 (0.9)	30.5 (0.9)	31.0 (0.7)	23.7 (0.8)
	Certainly will do this	4.8 (0.3)	5.1 (0.4)	7.5 (0.4)	5.1 (0.6)
Total		*100*	*100*	*100*	*100*

Table 4.2 Correlation coefficients between current and future online civic engagement with offline current and future civic engagement**

		Students' current engagement with social media	Students' willingness to participate in social media in the future
Students' current participation in the wider community	Denmark	0.21	0.19
	Finland	0.25	0.15
	Norway	0.25	0.25
	Sweden	0.25	0.25
Students' expected active political participation	Denmark	0.24	0.44
	Finland	0.22	0.44
	Norway	0.27	0.52
	Sweden	0.27	0.49

Notes Analysis using IDB Analyzer applying student weights. **all correlation coefficients are significant, $p < 0.01$. A correlation < 0.20 is weak, between 0.20–0.30 is moderate, between 0.30–0.40 is strong, and > 0.40 is very strong

community and expected future political engagement) using information resources and technology (IRT)-weighted likelihood estimates (Köhler et al. 2018; Schulz et al. 2018b).

First, all the correlation coefficients are significant and positive in all four countries, which means the higher the students' reported online participation, the higher their intention of future online civic engagement and the higher their offline civic engagement both currently and in the future. Second, all four countries are similar in terms of current student online participation—it is moderately to strongly correlated with both their current and future offline participation (see Table 4.2, column 3). Third, there are some small differences between the four countries in the correlations between students' willingness to participate in social media in the future and their future offline political participation—the correlation is very strong in all four countries.

Nevertheless, we find only a few significant but very weak correlations between the ICT resources in schools (i.e., the devices available for teaching at school) with students' current and future online engagement. It is all significant but very weak and positive only in Finland, whereas it is not at all significant in Denmark. However, school ICT resources have a very weak and positive correlation with students' future online engagement in Sweden and a very weak and negative correlation with students' current online participation in Norway. Yet, ICT resources at home have a significant, very weak, and positive correlation with both students' current and future online participation in all four countries.

4.7 Discussion

The background for this chapter is the complex and partly blurred field of digital citizenship in education. IEA's ICCS 2016 was the first study to establish a small number of measures for investigating the factors for digital citizenship education. In this chapter we have, therefore, aimed to elaborate on this and attempted to map digital citizenship and civic engagement through social media in schools by identifying the factors that indicate the teaching of digital citizenship on social media in schools in four Nordic countries. The main finding is that the development of digital citizenship through social media in schools consists of *multiple and emerging factors*. The analysis resulted in a conceptual map that can be summarized under the heading of six major themes regarding digital citizenship education in the Nordic countries and is illustrated in Fig. 4.5.

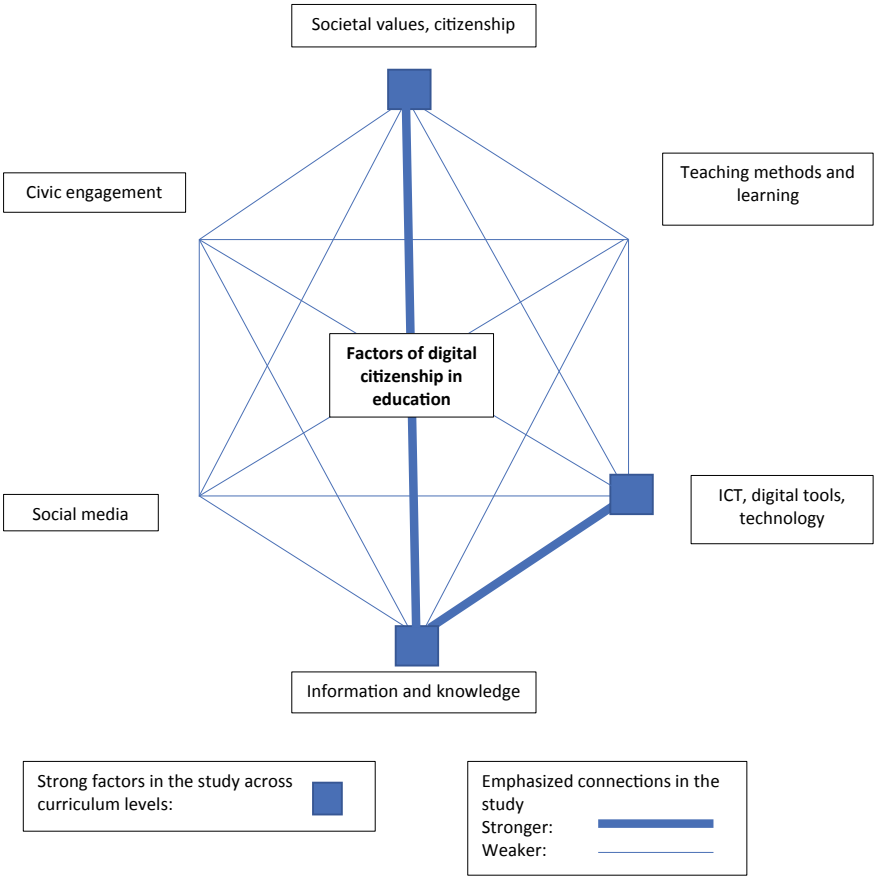


Fig. 4.5 Map of factors promoting digital citizenship on social media in school in the four Nordic countries

Figure 4.5 suggests six main factors that indicate the promotion of digital citizenship on social media in education in the mixed-methods study, as follows:

1. **Societal values and ideas**: All the Nordic countries have a quite strong emphasis on *societal values and ideas* promoting digital citizenship at the formal curriculum level.
2. **ICT, digital tools, and technology**: Elaborate descriptions of ICT, digital tools, and technology exist at the formal curriculum level; whereas good access to ICT devices and the internet are described as present, and constituting the perceived curriculum level.
3. **Handling of information and knowledge**: At a formal curriculum level, handling of information and knowledge are emphasized in all the four countries. However, a variation between describing knowledge development in general, using digital tools to gain information, and using technology to promote knowledge exist. At a perceived curriculum level, the teachers were well-prepared to teach the handling of information, and on an experienced curriculum level, many students were likely to use ICT to find information about political and social issues.
4. **Teaching methods and learning**: At a formal curriculum level, Finland extensively describes digital tools for learning, and in the perceived curriculum, 75–95% of the teachers in Finland, Norway, and Denmark reported that they use web-based sources to plan civic-related teaching.
5. **Social media**: At a formal curriculum level, social media concepts such as "digital" or "social media" are not established concepts. Instead, in Denmark, Sweden, and Norway, it is often referred to using terms such as "the internet" and "media." In contrast, in the Finnish curriculum, there is a more extensive conceptualization of social media. At a perceived curriculum level, the teachers report a high level of readiness to teach about online ethics and that they use the internet and social media to teach about civic issues. However, on an experienced curriculum level, the students report very low positive responses on the posting of civic issues online, and the teachers do not report modelling civic participation in online discussions or social media in their teaching.
6. **Civic engagement**: At a formal curriculum level, few curricula use the term "civic" or "citizenship" except for the Finnish core curriculum. However, all the national curricula mention participation or engagement in society and becoming democratic citizens in general. At the perceived curriculum level, most of the teachers in Finland, Denmark, and Sweden teach about civic issues. However, on the level of experience, almost none of the students report that they are likely to engage in political or social issues online, whether it be sharing, posting, or making arrangements.

Overall, digital citizenship through the use of social media is not a single phenomenon but is represented by multiple practices on different curricula levels. The results of the analysis suggest six common features of digital citizenship in schools.

These features are sometimes stronger or weaker on different curricula levels and there is some variation between the Nordic countries.

The next overall finding is that there are some new emerging factors regarding digital citizenship education. The map in Fig. 4.5 shows some established factors and connections to digital citizenship. In addition, the map also illustrates weaker factors, which we have interpreted as possibilities for the future development of digital citizenship in education. For instance, there is a difference between the factors for teaching digital citizenship in the Norwegian core curriculum from 2006 and the Finnish curriculum from 2014. The curricula could be described as incompatible for comparison because of the differences of time periods. However, such differences might also give insights into how the curricula have developed in the Nordic context.

Digital citizenship education might also be seen as emerging when considering discrepancies between the ideals of digital citizenship as formulated at the formal curriculum level and how it is practised by the students. Thus, these discrepancies can show that the formal, national curricula represent ideals preceding practice. However, the belief that ideals precede practice might be a misconception of the development of digital citizenship in education. According to Goodlad (1994), there is no cause–effect the between different curriculum levels in promoting moral values. Each curriculum level represents a separate practice, with its logic being worth listening to. The lack of civic engagement through social media might be the students' unique way to raise their voice and bring new questions about which factors support the development digital citizenship. One question is to what extent *can* 14-year-olds engage in civic questions online and on social media in school? Are 14-year-old students mature enough to address civic engagement? Maybe they are not. The correlation analysis shows that many students report the belief that they probably will participate in online civic discussions in the future. It seems likely that they imagine that civic engagement online is something separate from their present reality. It is also possible that students and teachers take political formation in school as a given, assuming that engagement will evolve in one way or another.

Another question is a moral one and asks whether 14-year-olds *should* engage in civic questions online and in media in school. Although many teachers report that they have the ability and feel well-prepared to promote civic awareness and engagement, they do not use social media to engage in online discussions with their students. Perhaps the use of the internet and social media in questions of civic engagement touches upon a moral hesitation among teachers. If this is the case, we are missing an explicit moral discussion about our expectations for young people's participation in political issues as the idea of participation is connected to a moral standard of a "better citizen" and thus a better person (Westheimer and Kahne 2004).

One more question concerns the agency of the pupils themselves. The question is whether 14-year-olds *would* engage in civic questions online and in social media in school. When introducing digital citizenship and hope for posting on social media, there is a danger that we confuse moral values of engagement with cultural values of socially accepted values. Our results may indicate a reluctance among young people towards online participation concerning civic issues. One explanation might be that

young people see the online space as a private space as well as a space for play and relaxation.

It might be too much to expect young people to engage personally in a formal setting such as school. However, young people do engage. As Schulz et al. (2018a, p. 208a) suggest, school is not the key actor in the development of digital citizenship and engagement on social media. This is a major challenge for schools. We believe that these challenges might stem from a misconception in the national curricula about the schools' role in creating civic engagement. Young people engage not only because of the national curricula, the principals, or due to what teachers or educational researchers believe engagement to be. The challenge for education—and the further development of the ICCS study—is to cease to treat engagement as top-down activities to be evaluated or measured as individual performance indicators. Instead, there is a need for new perspectives on what engagement can mean, and a "re-ontologisation" of education (Floridi 2007; Amnå and Ekman 2014; Lieberkind and Bruun, Chapter 2 in this volume). First, these new perspectives should not treat digital citizenship and engagement as technical and virtual domains and as separate from other forms of civic engagement. The curricula in school need to consider the virtual space as any other political space and engage with the youth to jointly develop digital citizenship through social media use. Second, digital citizenship and engagement are social and mediated processes (Purvis et al. 2016). Thus, the measures should include process indicators *between* actors in education and *between* school, political leaders, teachers, and students. Third, digital citizenship and engagement represent not only competencies but also ways of living. The challenge in defining and assessing factors for developing digital citizenship education is to be able to capture the transformative processes (Dewey 1916). Understandings of digital citizenship education and digital civic engagement should thus embrace the complexities of life. Developing digital citizenship can emerge if it is not only the students that learn but also if the education systems and assessment frameworks learn from the experiences of the students.

Appendix

See Tables 4.3 and 4.4.

Table 4.3 Descriptive data of questions and measures of IT resources available for teaching at school, and in use at home ICCS 2016 data

Items of interest	Denmark[a]		Finland		Norway		Sweden	
Principals' responses to the questions "Are the following devices with internet access provided by the school to the students for their learning activities?" (Q10) (Yes = 1, No = 0), percent	Yes	s.e.	Yes	s.e.	Yes	s.e.	Yes	s.e.
Desktop computers	40.7	4.2	85.8	5.1	55.0	5.4	33.1	4.3
Portable computers (laptop, notebook, netbook)	83.0	3.7	71.5	4.6	95.9	1.4	83.9	3.4
Tablet devices (e.g. iPad)	48.2	3.6	72.0	5.1	33.6	7.7	59.6	5.7
E-readers (e.g. Kindle, Kobo, Nook)	20.7	3.0	9.0	2.2	3.9	1.4	11.1	5.3
Interactive whiteboards	88.6	3.7	58.6	6.0	68.1	7.0	60.0	4.9
Teachers' responses to the question "How frequently do you use the following devices with internet access provided by the school for your teaching activities with students" (Q13) (Never and Not provided by the school = 0; Yes in some lessons and Yes in most lessons = 1), percent	Yes	s.e.	Yes	s.e.	Yes	s.e.	Yes	s.e.
Desktop computers	39.3	4.7	77.6	1.7	42.8	3.1	22.6	2.4
Portable computers (laptop, notebook, netbook)	94.1	1.5	55.8	2.2	91.1	1.2	83.1	1.9
Tablet devices (e.g. iPad)	52.3	3.3	58.0	2.7	26.9	3.9	50.0	3.5
E-readers (e.g. Kindle, Kobo, Nook)	11.2	1.7	1.4	0.2	3.2	0.5	2.0	0.4
Interactive whiteboards	85.7	3.7	28.4	2.6	61.2	3.9	26.7	2.6

(continued)

Table 4.3 (continued)

Items of interest	Denmark[a]		Finland		Norway		Sweden	
Students' responses to question "How many of the following deices are used regularly in your home?" (Q12) (None = 0, 1 = 1, 2 = 2, 3 and more = 3)	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Desktop or portable computer s (laptop, notebook or netbook)	2.6	0.6	2.0	0.8	2.5	0.7	2.4	0.8
Tablet devices or e readers (e.g. iPad or Kindle)	2.0	1.0	1.4	1.0	2.0	1.0	1.8	1.0
Mobile phones with internet access (e.g. smart Phones)	2.9	0.4	2.8	0.5	2.9	0.4	2.9	0.4
Students' responses to question "Do you have an Internet connection at home?" (Q13) (Yes = 1, No = 0)	Yes	s.e.	Yes	s.e.	Yes	s.e.	Yes	s.e.
Response percent	99.7	0.1	99.3	0.1	99.0	0.1	99.2	0.2

Notes Calculations presented in the table are performed by IDB Analyzer applying school weight, teacher weights and student weights, respectively
[a]Participation rates for the teacher survey were below the ICCS 2016 international standard in Denmark

Table 4.4 Descriptive data of question items on the use of devices of information technology for civic- and citizen-related teaching and student activities (in %)

Items of interest	Response alternatives	Denmark[a]	Finland	Norway	Sweden
Teachers work with students on a social network, forum, or blog to support environment-related actions (Q12c)	Yes	3.4 (0.9)	1.6 (0.3)	2.9 (07)	2.5 (0.4)
	No	96.6 (0.9)	98.4 (0.3)	97.1 (0.7)	97.5 (0.4)
Total		*100*	*100*	*100*	*100*
Teachers use web-based sources of information to plan civic-related lessons (Q16g)	Not at all	0	1.4 (0.5)	1.2 (0.5)	2.5 (1.0)
	To a small extent	4.4 (2.2)	15.8 (1.6)	8.5 (1.8)	21.3 (3.0)
	To a moderate extent	43.8 (5.8)	49.2 (2.5)	53.6 (3.1)	50.1 (3.6)
	To a large extent	51.7 (85.8)	33.5 (2.5)	36.6 (2.9)	26.1 (3.3)
Total		*100*	*100*	*100*	*100*
Teachers use ICT with students to search for and/or analyze information gathered from the internet (Q17f)	Never	0.7 (0.7)	7.7 (1.0)	2.9 (1.0)	1.6 (0.8)
	Sometimes	44.5 (6.4)	59.8 (2.5)	62.6 (2.8)	51.8 (3.9)
	Often	32.6 (5.9)	27.7 (2.1)	31.6 (2.9)	36.2 (3.6)
	Very often	22.1 (5.6)	4.9 (1.1)	2.9 (0.9)	10.5 (2.2)
Total		*100*	*100*	*100*	*100*
How much teachers feel well prepared to teach responsible internet use (Q18)	Not at all prepared	2.1 (1.6)	0.9 (0.5)	0.3 (0.2)	0
	Little prepared	27.4 (6.2)	16.9 (1.9)	9.5 (1.7)	6.9 (2.0)
	Well prepared	42.0 (5.3)	56.6 (2.1)	51.1 (3.8)	51.2 (3.6)

(continued)

Table 4.4 (continued)

Items of interest	Response alternatives	Denmark[a]	Finland	Norway	Sweden
	Very well prepared	28.4 (7.0)	25.5 (2.3)	39.1 (3.9)	41.9 (3.9)
Total		*100*	*100*	*100*	*100*
If teachers have received training on topics and skills related to responsible internet use (Q19)	Never	66.4 (5.9)	36.6 (1.8)	56.5 (3.9)	62.8 (3.7)
	Yes, pre-service training	12.5 (4.9)	18.3 (1.6)	16.1 (2.8)	22.1 (3.0)
	Yes, in-service training	8.4 (3.9)	32.3 (2.8)	18.0 (2.9)	4.5 (1.8)
	Yes, both pre- and in-service training	12.6 (3.5)	12.8 (2.2)	9.4 (1.8)	10.6 (2.4)

Notes Calculations presented in the table are performed by IDB Analyzer applying teacher weights
[a]Participation rates for the teacher survey were below the ICCS 2016 international standard in Denmark

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