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# Digital competence in social work practice and education: experiences from Norway

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## ABSTRACT

This article discusses which knowledge areas of digital competence are vital for Norwegian social work education today basing on EU Digital Competence framework (DigComp) and expectation from frontline practice. The research adopted diverse methods for data collection, including a case study of Norwegian Labour and Welfare Administration (NAV), a document analysis of Norwegian social work education guideline and curricula, and a semi-structured interview with social work educators. The results reveal that the integration of digital competence knowledge areas across Norwegian social work education is still highly limited. There is a significant gap between the EU's digital competence requirement and the Norwegian social work curricula, although the DigComp framework demonstrates its limitation in conceptualizing digital competence that is relevant social work domain. There is also the gap between the practice in NAV and Norwegian social work curricula regarding digital competence. We need further research to develop a consensus in respect of defining digital competence and its core knowledge areas in social work to prepare future professionals to harness technology advance for every-changing needs in digitalized society.

## KEYWORDS

Digital competence; Digital Social Work; Social Work Education

## Introduction

In the last decade, Norwegian government policies have prioritized using information and communication technologies (ICT) to improve welfare sectors' efficiency, accountability and monitoring. The government's white paper 'Digital Agenda for Norway' (2015–2016) and digital strategy 'One Digital Public Sector' (2019–2025) proposed that Norway is at the forefront of using new technologies in public health and social care for innovation and value creation. Due to intensive digitalization in the public sector, digital competence is a critical factor for the digital transformation capability of welfare organizations and their ability to realize digitalization benefits. However, evidence shows that many managers and employees in welfare sectors lack the necessary competence to see and utilize the opportunities provided by new technologies (Government.no 2019b)

For social workers in Norway, like many in other technology-driven societies, digital competence is now a professional capability measure. The Norwegian Regulation on National Guideline for Social Work Education (Government.no 2019a) requires explicitly that higher education institutions should help their students to 'master digital tools, including knowledge of digital security, and be able to assist in the development and use of suitable technology, and know their opportunities and limitations in practice' (Chapter 3: § 8, n). Additionally, social work candidates

should ‘have insight into the importance of digital communication in professional practice and interaction’ (Chapter 3: § 9, e).

Nevertheless, few studies in Norway discuss what specific knowledge and skills are essential for building social workers’ digital competence in today’s ICT-mediated welfare sectors and what competence will be needed in the future (Andersen & Riise, 2012). This article takes the initiative to address this field by providing a relevant discussion of the following questions:

- Which knowledge areas of digital competence should Norwegian social work practice and its social work curricula address?
- How can social work education institutions in Norway facilitate their students’ digital competence to ensure that they meet requirements in practice and standards addressed by the European Digital Competence Framework (DigComp)?

## Conceptual framework

Since 2006, digital competence has been considered one of the eight key competences for lifelong learning for all European citizens (European Commission 2006). Several attempts have been made to develop a consensus about defining the term ‘digital competence’. This article adopts the Norwegian government’s definition, which suggests that digital competence is ‘the ability to relate to and use digital tools and media in a safe, critical and creative way. It is about knowledge, skills and attitudes. It is about being able to perform practical tasks, communicate, obtain or process information. Digital judgement, such as privacy, source criticism and information security, is also an important part of digital competence’ (Government.no 2012, 18).

As the above definition suggests, digital competence is far more than technical skills. Instead, it should encompass different competence areas that are essential for a well-functioning digital environment (see Table 1). These areas can include information, communication, content creation, safety and problem solving, which together are referred to as the European Digital Competence Framework (DigComp) (Ferrari 2013, 4).

Digital competences are often a requirement for frontline social workers in Norway or other European countries since ICT is increasingly used in the field for service delivery, communication and corporation, case management and administration (e.g. Antonio, Raquel, and Victoria 2018; Goldkind, Wolf, and Freddolino 2018; Zhu and Andersen 2020). Social workers today are professionally obligated to improve their digital competence to enhance their service quality and fulfil people’s expectations in a digital society (Berzin and Coulton 2017; Hill and Shaw 2011; Zhu and Andersen 2020). Besides, social workers need the competence to support service users’ human rights through digital inclusion and access to e-government services, safeguard individuals from online and digitally-related abuse and risk, and advocate for marginalized groups and promote

**Table 1.** DigComp’s five core knowledge areas of digital competence.

Information	Identify, locate, retrieve, store, organize and analyse digital information, judging its relevance and purposes.
Communication	Communicate in digital environments; share resources through online tools; link with others and collaborate through digital tools; interact with and participate in communities and networks; demonstrate cross-cultural awareness.
Content creation	Create and edit new content; integrate and re-elaborate previous knowledge and content; produce creative expressions, media outputs and programming; deal with and apply for intellectual property rights and licences.
Safety	Demonstrate knowledge of personal protection, data protection, digital identity protection, security measures, safe and sustainable use.
Problem-solving	Identify digital needs and resources; make informed decisions as to which are the most appropriate digital tools according to the purpose or need; solve conceptual problems through digital means; creatively use technologies; solve technical problems; update one’s own and others’ competences.

social equality via different digital tools (Arnesen 2019; C. Chan and Holosko 2016; Goldkind, Wolf, and Freddolino 2018).

Nevertheless, there are very few discussions in social work research about what explicit knowledge and skills our professionals need to develop a digital competence that meets today's requirements, such as those specified by the DigComp. Due to the lack of consensus in our field, we hope to use DigComp as a starting point for developing a systematic model that will provide sufficient detail to map the knowledge areas of digital competence in the social work domain.

There are several reasons for selecting the DigComp framework in this study. Firstly, it is a framework that is initially developed basing on a review of other 15 well-known digital competence frameworks (Ferrari 2012; Janssen et al. 2013). Secondly, as a European Economic Area member, Norway understands digital competence largely coincides with the DigComp framework. The Directorate of Education uses the term 'digital skills' instead of 'digital competence', but the content otherwise corresponds well (NOU 2019, 2). Thirdly, the DigComp has been widely adopted to detail a conceptual understanding of digital competence for high education (e.g. Engen, Giæver, and Mifsud 2015; Siddiq 2018).

## Method

In this qualitative study, we utilized a broad methodological design to approach the research questions progressively. First of all, we undertook a three-year case study of the Norwegian Labour and Welfare Administration (NAV) from December 2017 to June 2020. We gained general and valuable information about NAV employees' perception of digital competence in their frontline practice through three ways of collecting data, including participant observation, focus-group and semi-structured interviews. With the guide of the DigComp framework, we further identified, categorized and compared critical knowledge areas of digital competence defined by NAV frontline practitioners.

Further, in June 2020, we performed a document analysis of the Norwegian Regulation on National Guideline for Social Work Education (Government.no 2019a) and local social work bachelor programme descriptions. This document analysis helped to identify, understand, compare and analyse the current treatment of digital competence in local social work curricula. Together with the DigComp framework and the results from the case study of NAV, we can better understand the extent to which the knowledge areas of digital competence addressed by social work curricula are consistent or discrepant with European standards and the requirements from frontline practice.

Finally, from June to July 2020, we conducted three semi-structured interviews with social work educators from the authors' university. These helped facilitate an in-depth reflection and discussion concerning how local social work education can better facilitate students' digital competence in line with the European Commission's requirements and frontline practice reality. The following sections provide more details of the above methods and how they separately and collectively served our research aim.

### *A case study of NAV*

Our case study of NAV depended on a research project<sup>1</sup> with two NAV offices in the northern part of Norway: one small, with ten employees, and the other medium-sized, with approximately thirty-seven employees. We chose NAV because it is one of Norway's significant welfare institutions and employs enormous educated social workers. It currently has 460 customer-facing offices, serving 2.8 million people and providing more than sixty types of state and municipal services. NAV is also one of the most prominent welfare institutions globally to have implemented ICT on a broad basis. The organization is at the forefront of developing ICT-mediated services, and it requires employees

with a competitive digital competence for its frontline practice (Chudasama 2017; Hansen, Lundberg, and Syltevik 2018).

We adopted three primary data collection methods in the case study of NAV: participatory observation, focus group interviews and semi-structured interviews. Each method contributes descriptive data for understanding digital competence in NAV frontline practice. The Norwegian Centre for Research Data (NSD) approved the whole research process (Zhu and Andersen 2020). In total, thirty-five employees across two NAV offices participated in the research; they worked in various departments, including Economic and Social Help, the Qualification Programme for Long Term Unemployment, Health Team, Youth Team, Reception and the Refugees Service. The authors agreed on dates for all data collection sessions with the managers and employees were then free to decide whether they wanted to be part of the process, based on their availability. Most employees participated in one or two data collection sessions.

Specifically, the participatory observation took place at two NAV offices from January to March 2018, in three-day stays for each office. This method allowed the author to observe and participate in routine activities within two offices, explore different implemented ICT, and learn how participants perceive the digitalization process and how they define digital competence in practice (Zhu and Andersen 2020). During the same period, our research group conducted the first-round focus group interviews at two offices in January 2018; each lasted approximately two hours. Fifteen participants joined the discussion and shared their opinions on the digitalization process in NAV and their experiences with ICT-mediated practice. Alongside the focus group, semi-structured interviews were conducted in April 2018, ranging in length from twenty to sixty minutes. Twelve participants shared their individual experiences with different forms of ICT-mediated practice.

In December 2018, eighteen participants joined the second round of the half-hour focus group, and five of them contributed further twenty-minute semi-structured interviews. In these interviews, we collected additional data about the substantial impact that technologies have on frontline practice. In November 2019, we held a three-hour meeting with eleven participants; it consisted of a two-hour presentation of our research findings and a one-hour session of focus-group interviews focused on defining core competencies related to digital practice.

All interviews were transcribed and summarized for content analysis. The analysis consists of three key stages: 1) identify, code and categorize participants' narrations into five groups based on the operationalization of DigComp: information, communication, content-creation, safety and problem-solving; 2) summarize and restructure narrations within each category; and 3) compare and interpret different respondents' narrations to generate meaningful patterns, and then combine the patterns into themes and consider how they could answer the research questions.

### **Document analysis**

We further performed document analysis as one of the research methods to identify, categorize and compare different knowledge areas of digital competence currently addressed by the Norwegian social work curricula. Documents used for analysis include the Regulation on National Guideline for Social Work Education and local social work bachelor programme descriptions from all Norwegian higher education institutions ( $N = 11$ ) which provide social work education in 2020 (see Table 2). Qualitative content analysis was applied to understand selected documents. It includes steps: 1) access to the digital versions of all selected documents; 2) identify, code and categorize each document's contents into five major groups based on DigComp; 3) compare each category across different documents; and 4) interpret to generate meaningful themes and draw conclusions (Zhang and Wildemuth 2009).

**Table 2.** Included institutions and their social work curriculum.

No.	Institution's Name	Programme Description of Social Work Bachelor
N1	Inland Norway University of Applied Sciences	<a href="https://www.inn.no/studiehaandbok/studiehaandboeker/2020-2021-studiehaandbok/studier/hsv-fakultet-for-helse-og-sosialvitenskap/bachelor/basos-bachelor-i-sosialt-arbeid">https://www.inn.no/studiehaandbok/studiehaandboeker/2020-2021-studiehaandbok/studier/hsv-fakultet-for-helse-og-sosialvitenskap/bachelor/basos-bachelor-i-sosialt-arbeid</a>
N2	Nord University	<a href="https://www.nord.no/no/Student/studieplaner/2020/H/pdf%20dokumenter/BASOA.pdf">https://www.nord.no/no/Student/studieplaner/2020/H/pdf%20dokumenter/BASOA.pdf</a>
N3	Western Norway University of Applied Sciences	<a href="https://www.hvl.no/studier/studieprogram/2020/h/bsab/studieplan/">https://www.hvl.no/studier/studieprogram/2020/h/bsab/studieplan/</a>
N4	NTNU: Norwegian University of Science and Technology	<a href="https://www.ntnu.no/studier/hsgsob/oppbygning">https://www.ntnu.no/studier/hsgsob/oppbygning</a>
N5	VID Specialized University	<a href="https://www.vid.no/site/assets/files/19078/studieplan-bachelor-i-sosialt-arbeid-gjelder-for-studenter-som-starter-i-forste-studiear-hosten-2020-vid.pdf?nc=1587728410">https://www.vid.no/site/assets/files/19078/studieplan-bachelor-i-sosialt-arbeid-gjelder-for-studenter-som-starter-i-forste-studiear-hosten-2020-vid.pdf?nc=1587728410</a>
N6	Østfold University College	<a href="https://www.hiof.no/studier/programmer/sos-bachelorstudium-i-sosialt-arbeid/studieplaner/h2020.html">https://www.hiof.no/studier/programmer/sos-bachelorstudium-i-sosialt-arbeid/studieplaner/h2020.html</a>
N7	UiT The Arctic University of Norway	<a href="https://uit.no/Content/686329/cache=20201211102433/FAGPLAN%20Sosialt%20arbeid%20Alta%202020-2023.pdf">https://uit.no/Content/686329/cache=20201211102433/FAGPLAN%20Sosialt%20arbeid%20Alta%202020-2023.pdf</a>
N8	University of Stavanger	<a href="https://www.uis.no/nb/sosialt-arbeid-sosionom-bachelor">https://www.uis.no/nb/sosialt-arbeid-sosionom-bachelor</a>
N9	Oslo Metropolitan University	<a href="https://www.oslomet.no/studier/sam/sosialt-arbeid">https://www.oslomet.no/studier/sam/sosialt-arbeid</a>
N10	University of Agder	<a href="https://www.uia.no/studieplaner/programme/BACSOFAG?year=2020">https://www.uia.no/studieplaner/programme/BACSOFAG?year=2020</a>
N11	Volda University College	<a href="https://www.hivolda.no/studietilbod/sosialt-arbeid-sosionom/haust">https://www.hivolda.no/studietilbod/sosialt-arbeid-sosionom/haust</a>

### **Interview with social work educators**

In addition to a case study of NAV and document analysis, we delivered three semi-structured interviews with social work educators. One of the interviewees is head of the bachelor programme, with more than thirty years' experience as social work educators, while another two are subject specialists with more than eight years' teaching experience in the field of child welfare and methods of social work. The interviews included questions about participants' perception of five identified knowledge areas of digital competence (as specified by DigComp) and their relevance to contemporary social work practice. We also asked questions concerning how local educational institutions can better and more systematically address digital competence in their training so that social work candidates can acquire the knowledge and skills demanded by today's practice field or by digital society in general. Each interview lasted around thirty to forty minutes and was transcribed for content analysis.

### **Findings and discussion**

In general, the digitalization process in NAV has revolutionized its frontline service and practice. The use of digital tools has a prominent position amongst selected participants' daily practice, from case management, communication and cooperation, to professional development. Our case study of NAV reveals that digital competence is emphasized as a necessary and complex competence; all five knowledge areas of digital competence in the DigComp framework can be found in place within our selected participants' experience.

However, results from document analysis and interviews with social work educators indicate that digital competence still does not have a prominent position in the curricula, although attention to the discussion has increased over the last five years. Norwegian social work institutions have developed their bachelor programme descriptions based on the Regulation on National Guideline for Social Work Education (2019). Digital competence has been addressed in ten of eleven institutions. Some of the formulations presented in the national guideline concerning digital competence can be found in the provisions of most of the ten selected programme descriptions. However, few institutions provided more thorough descriptions of the desired learning outcome for social worker candidates in terms of digital competence.

There are no significant differences in how institutions emphasize the five knowledge areas that constitute digital competence. Nevertheless, we identified a gap between practice in NAV and Norwegian social work curricula concerning digital competence knowledge. Three interviewed educators also acknowledged the importance and relevance of five digital competence in today's social work practice, but the integration of these areas in education is relatively constrained. In the following paragraphs, we present and discuss our research results in line with the five knowledge areas of digital competence.

## **Information**

According to DigComp (see [Table 1](#)), the information knowledge area includes the competencies of browsing, searching and filtering digital information, and evaluating, storing and retrieving it (Carretero, Vuorikari, and Punie 2017). This knowledge area is essential for frontline practice in NAV, and our participants highlighted that one of their main daily tasks is to search, register, process, evaluate, store, retrieve, share and manage different data and information via diverse digital systems. These data and information include: 1) data required by NAV for the management of the direct practice, such as users' health and employment information; 2) information related to direct practice assessment and intervention, such as evaluation reports and meeting notes; and 3) information about the practice field or service users population that is closely related to the analysis of practice, such as regional unemployment rates and datasets on welfare provision.

As other social workers in a digital society, our participants are information-intensive professionals, since they collect, sort and transmit digital information in their daily work (Carretero, Vuorikari, and Punie 2017; Fitch 2019; Räsänen 2012). The ability to handle digital information is necessary to understand better service users' background, needs, situation, and resources. It also contributes to professional judgement, decision-making and quality control (e.g. Adedoyin 2016; Barfoed 2019; Bender et al. 2015; Fitch 2019; Healy and Mulholland 2019; Rønnebak 2012). To achieve such competence requires professionals first to understand what different digital data and information mean for professional practice across different institutions. Note that data is never neutral; data collected through different institutions and systems reflect a sum of decision about where and how the data are collected, reflecting values and bias of both individuals and society (Fitch 2019; Kingsley et al. 2018). In this sense, as some participants pointed, social workers are responsible for reflecting and assessing if the data they used for decision-making makes 'a difference for their service users' lives'.

Moreover, some participants pointed out that they often need to help service users search, understand, evaluate and manage digital information relevant to their cases, rights and benefits. NAV employees are 'obligated to clarify information displayed on the institution's digital front'. They also need to help users correctly 'register, upload and manage data required by NAV' and 'explain how professionals, NAV, and other agencies will handle registered information'. As concluded by previous literature, by living in an ICT-mediated society, social workers also have to work dedicatedly to improve their service users' information and data literacy, in order to safeguard them from all kinds of digital exclusion (Newman, Biedrzycki, and Baum 2012; Schou and Pors 2019; Zhu and Andersen 2020).

In our examination of the Regulation on National Guideline for Social Work Education (2019), we found no specific examples regarding digital information knowledge. Likely, integrating this knowledge in the local social work curricula is also highly limited amongst Norwegian higher education institutions. Only two institutions (N3 and N5) particularly emphasize digital information knowledge as its subject programme description's learning outcome. In particular, through N3's first-semester course SAB110 Danning and Academic Handwork, students can expect to master skills in 'finding, evaluating and using different sources of knowledge and digital information in own knowledge building'. To achieve such a learning outcome, students participate in mandatory course activities, including a digital lecture about information literacy and group work



to develop and share digital presentation. Also, in N5's first-semester course BOASOS 2010 Social Science and Legal Knowledge Base in Social Work, students are expected to 'have digital expertise and knowledge of literature search, source management and professional dissemination, and 'be familiar with digital resources such as law database, statistic database and other relevant research portals'.

Apart from N3 and N5, other institutions included have no specific description of the digital information knowledge area, although they have described other kinds of information competence in their general and subject-specific programme descriptions. For example, many of the institutions emphasize that social work candidates should acquire skills needed to 'find and refer to relevant information and subjects both orally and in writing' and to 'document and exercise professional judgement based on knowledge and available information' (e.g. N1, 2, 3, 5, 7 and 11). Nevertheless, none of the institutions clarifies what digital information social workers may deal with in daily practice, and how digital information competence can be different from traditional information competence addressed by social work curricula.

Our selected social work educators also acknowledged the importance of digital information knowledge in practice. They noted that social work candidates should be 'made aware of institutions' realities to prepare them to handle different digital data and information for successful professional judgement'. As one educator mentioned, it is common practice for social work institutions to invite frontline professionals to share their experience, such as dealing with digital data and information in daily tasks. Additionally, through the mandatory work placement, social work students are usually allowed to learn how to deal with digital data via diverse digital professional systems implemented in different organizations. Therefore, students can obtain 'hands-on experience' in collecting, sorting and transmitting digital information for specific professional purposes. Still, the lack of discussions of digital information competence in curriculum documents is concerning. It suggests that social work education programmes are not fully aware of their responsibility in this regard, and that further steps need to be taken to integrate the digital information knowledge area into social work education curricula.

## **Communication**

Communication is a core dimension of digital competence in the DigComp framework; it covers different activities such as interacting through technologies, sharing information and content, collaborating through digital channels, managing digital identity and netiquette (Carretero, Vuorikari, and Punie 2017). In the case of NAV, ICT's transformational power in communication has affected professional practice such that practitioners have to improve their relevant skills to ensure efficient technology-mediated communication and collaboration (Chudasama 2017; Zhu and Andersen 2020). For example, selected participants have to communicate with service users, colleagues and cooperative partners each day via SMS, writing messages through professional systems, emails, social media, video conferences and other digital tools. Therefore, practitioners must first understand what appropriate digital communication means in a given context (Baker et al. 2014; C. Chan and Holosko 2016; Halvorsen 2017; Stang 2016; Zhu and Andersen 2020).

Frontline professionals also need to have a basic understanding of their service users' distinct digital behaviours and preferences (Hooley, Shepherd, and Dodd 2015; Stanfield and Beddoe 2016; Zhu and Andersen 2020). As NAV participants suggested, they have to know 'certain groups will prefer a particular or a combination of digital channels for contact'. Lack of physical interaction for some users can mean a reduced sense of trust, intimacy and commitment, whereas others may prefer the silent, less visually stimulating and non-tactile quality of communication (Mattison 2012; Mishna et al. 2013; Suler 2000). An increasing number of service users in NAV today prefer ICT-mediated communication rather than face-to-face interaction. Amongst them are those who encounter geographical and time barriers for face-to-face meetings, or are avid users of handheld ICT devices and fluent digital communicators who are expert in using images, GIFs and different



emoji with text to personalize communication and express themselves well. They can also include individuals who experience less stress, anxiety, shame or powerlessness when discussing personal problems without being physically present. All such individuals can expect and encourage professionals to use various digital tools for communication, relationship building, situation clarification and empowerment.

Further, different digital tools have specific strengths and limitations for communicative purposes. For instance, SMS and writing messages are more beneficial for tasks such as ‘delivery and require simple information’, ‘check updates’, and ‘make an appointment’; they give both communicative partners flexibility to write their response whenever and wherever they prefer. By contrast, telephone and video conferences are often used to clarify complicated situations or other activities requiring both communicative partners to provide instant feedback. Hence, professionals should be aware of each digital tool’s advantages and drawbacks to ensure that their adoption in the asynchronous and synchronous communicative process is beneficial (Berzin, Singer, and Chan 2015; Goldkind, Wolf, and Freddolino 2018; Hooley, Shepherd, and Dodd 2015). As we observed in selected NAV offices, frontline workers usually adopt hybrid forms of communicative strategies to contact their service users. They rarely use digital or face-to-face contact exclusively, and they rarely use only one digital communication channel. Instead, communication via a mix of physical meetings and cyber interaction, utilizing various digital channels, is standard for follow-up with service users. Depending on the case’s nature and on service users’ preferences, social workers prioritize one communication method while employing others as supplementary methods.

Finally, our participants emphasized that communicative techniques, writing skills and netiquette are essential in cyber communication. For example, like a face-to-face consultation, cyber communication also requires social workers to form reflective text messages or questions to encourage communicative partners to ‘think critically and examine their situation independently’. Besides, asynchronous and synchronous digital communication can require different communicative strategies for engagement (Knowles and Cooner 2016; Suler 2000). In asynchronous messages, frontline workers can use well-constructed questions with long sentences and phrases to prompt service users to reflect on in-depth and complex issues; service users may take minutes, hours, or even days to respond. In synchronous messages, by contrast, practitioners often use ‘short sentences and phrases’ and ‘messages that are right to the point’ to facilitate instant response and quick information exchange.

By moving attention from frontline to social work education, we found that most higher education institutions have chosen to include the National Guideline for Social Work Education (2019) formulations about digital communication competencies. For example, six institutions (N1, N3, N5, N6, N8 and N9) highlight that through their first-year course and short-term internship, students will gain insight into ‘the meaning of digital communication in professional practice and interaction’. Several institutions also provide a reasonably detailed description of how their programme can progressively improve their students’ digital communication competence. As N3 points out, while its first-year course and internship provide students with insight into the importance of digital communication in practice, its second-year course enables students to understand better ‘the gap between social work and the use of digital communication channels, and the implemented follow-up systems in different welfare institutions’.

Although our document analysis of social work curricula indicates an emphasis on digital communication compared to other knowledge areas of digital competence, we still identified a gap between what has been addressed in education and what is expected in the frontline practice at NAV. The curricula rarely mention knowledge of different service user groups’ distinct digital communicative behaviour and preferences. Additionally, besides N5, no institution provides a specific course addressing digital communication and cooperation, particularly in terms of the digital communication framework, strategies, and asynchronous and synchronous communicative techniques.

Further, as our selected social work educators suggested, social work is a communication-oriented practice; enabling students to acquire a profound knowledge of digital communication should be a central part of professional training in a technology-mediated society. Social workers need to understand how technologies affect communication and relationship-building in a given context and better understand what appropriate and ethical digital communication means for specific user groups such as children and youths, the elderly, and people with substance-dependent or psycho-cognitive problems. However, Norway has different student groups who join the social work bachelor with various digital competence levels. These students can enhance their digital communication skills through different planned active learning activities, including lectures, seminars, workshops, individual and group works and placements. In this sense, social work education needs to find an efficient way to evaluate defined digital competence at the end of a course or a programme.

### **Digital content creation**

Content creation in the DigComp refers to the ability to create and edit new digital content, integrate and re-elaborate previous content, produce creative expressions, media outputs and programming, and deal with and apply intellectual property rights and licences (Carretero, Vuorikari, and Punie 2017). According to previous studies, digital content creation can be an essential and competitive competence for today's social workers regarding advocacy, raising public awareness, communicating and delivering information, and supporting group and community engagement (e.g. C. Chan and Holosko 2016; Goldkind, Wolf, and Freddolino 2018). Nevertheless, in both the case study of NAV and the document analysis of curricula, we found that digital content creation competence is relatively less emphasized than other digital competence knowledge areas.

In NAV, digital content creation is generally defined as fundamental skills in using different software and applications (e.g. Microsoft Office) to create content in different forms such as text, images, numerics and PPT. Besides, today's widespread use of social media further press practitioners to use a combination of multimedia elements to create digital content for professional purposes. For example, NAV nowadays already represent many of its services, such as parental benefits and employment services for young people, on different social media platforms including Facebook, Snapchat and YouTube. These platforms, characterized by diverse digital contents such as video, audio (podcast), images (posters) and text (blog articles), have helped NAV to reach different target groups, spread information, and promote social education and participation.

Although none of the selected participants in NAV is responsible for using social media at the institutional level, many still informally adopt such platforms to communicate and engage with their service users and cooperative partners. Some of them use Snapchat and Instagram to interact with unemployed youths. They often create image and videos on these media platforms to give service users a more 'visual reality' of 'how a type of job' and 'its physical environment is going to look like'. They also use diverse content platforms to share articles and videos relevant to job searching or rehabilitation. However, despite the popularity of informally using social media in practice, our participants do not agree about how effective social media can be adopted to create and deliver appropriate content in diverse formats for professional purposes. Most of them are concerned about the safety and ethical issues related to using social media, and they expect more discussions about the possibilities of ethically using social media in practice under well-developed frameworks or guidelines.

Regarding social work education, digital content creation is not particularly emphasized in the national guideline nor in the local social work programme descriptions. Only one institution (N11) provides a selective course (BVV3050 Child Welfare, Media and Public) with a learning outcome that addresses digital content creation. According to the description of this course, students can

expect to 'have a broad knowledge of discussions and presentations of the child welfare services in various media' and to 'have knowledge of the child welfare media management and media strategies'. Despite fewer references in the curricula to digital content creation, according to social work educators, most of their students obtain relevant training indirectly during their study period by creating digital content in different forms, including text, images, spreadsheets, numerics, video, PPT and visual story, for course assignment and presentation.

However, the lack of formal description and examples of content creation competence in social work curriculum documents is concerning, since this competence area can be instrumental for social work in the digital environment. As previous literature suggests, digital content creation should focus on skills in using innovative tools such as social media and digital storytelling to create multimedia and multi-sensual content which is more personalized, emotional, and powerful in delivering messages (Chitat Chan and Sage 2021; Grocher, Wolf, and Goldkind 2018). These content can be further used in various communicative purposes like social education and advocacy, helping to deliver information and enhance audiences' comprehension (Goldkind, Wolf, and Freddolino 2018; Knowles and Cooner 2016).

## **Safety**

Safety knowledge includes knowledge about personal protection, data protection, digital identity protection, security measures and safe and sustainable use of technologies (Carretero, Vuorikari, and Punie 2017). In the social work field, to know about safety and security issues related to technology-use is one of the most important goals of digital competence development (e.g. López Peláez, Pérez García, and Aguilar-Tablada Massó 2018; Reamer 2015; Zhu and Andersen 2020).

In the case of NAV, participants pointed out that there has been increased discussion about two main areas of safety issues related to ICT use in their practice. Firstly, as members of an 'information-intensive profession', the participants need the knowledge and skills to protect service users' personal data and privacy in a digital environment. NAV has many relevant strict regulation and policies to ensure that breaches are reduced. For example, data containing sensitive information such as personal health and financial information can only be shared via particular digital contact channels. Work PCs and mobiles used for information management are required to be protected by a password.

Besides, sharing digital information across welfare sectors can help develop a unified welfare solution for service users. Such a process also raises concerns, including the loss of users' privacy, the elision of informed consent, or the risk of labelling some clients and targeting them for scrutiny or intervention against their will and autonomy (Kingsley et al. 2018; Steiner 2020). Therefore, social workers must recognize such challenges and become informed advocates who promote ethical data collection and sharing across welfare sectors. Also, professionals are well placed to ensure that their service users understand how their data may be used and the purpose of such usage (Fitch 2019; Zhu and Andersen 2018).

Secondly, safety knowledge also needs to address health risks and threats to physical and psychological well-being posed using digital technologies. Many participants highlighted the importance of balancing the benefits of technology and the health-risks related to it, such as digital eyestrain and musculoskeletal problems in the neck, shoulder, back, spine, fingers and wrists, and emotional problems including stress. They also noted the positive and negative aspects of digital solutions in society generally. Some participants discussed how to mitigate risks related to technology-use, such as online sexual exploitation, grooming and cyberbullying, although none of them had encountered such risks in their practice.

Safety as a knowledge area of digital competence is emphasized explicitly in the Regulation on National Guideline for Social Work Education (2019). However, the guideline only mentions that social work candidates should have knowledge regarding digital security, and have a good understanding of the possibilities and limitations of technology-use. It offers no detailed descriptions or

examples of what constitutes digital security in practice or what kind of safety challenges are posed by technology-use. Similar formulations related to safety knowledge can be found in the social work curricula (e.g. N1, N3, N5, N6 and N9).

In particular, N5 points out that their students are expected to ‘know about digital security at the workplace’ during their placement. N1, in its fourth-semester course Interdisciplinary Specialization, specifies that students will learn ‘knowledge of digital security and can apply digital competence in the development of good services’. N3’s second-semester course Social Work with Child and Family mentions that students should ‘master digital tools, have knowledge of digital security and know about their possibilities and limitation in social work’. N11 states that its selective course BVV3050 Child Welfare, Media and Public will help students to develop ‘digital expertise, including the knowledge of digital security in work with children, young people and families’. As we can see, the two main safety knowledge areas identified in the case study of NAV, digital privacy and health issues/ threats related to technology-use are not highlighted as essential aspects of digital competence by current social work curricula.

According to our educators, awareness of safety-related issues related to technology-use has been increasing in their institution. Although the programme descriptions do not significantly address this area, educators have tried to include the relevant topics in lectures and seminars in the actual teaching of their courses. For example, one educator addressed cyberbullying in her lecture related to school social work, while another addressed privacy challenges related to assistive technologies in recording service users’ personal data. Besides, due to the COVID-19 crisis, most courses in autumn 2020 have been digitalized. This accelerated a heated discussion amongst both teachers and students in respect of the safety challenges of technology-use. These challenges include: 1) data security and privacy issues related to using different software to support online interactive learning; and 2) digital overload and pressures on physical and psychological health.

### **Problem-solving**

Problem-solving in DigComp means a capacity to solve particular technical problems, identify digital needs and resources, creatively use technology, identify digital competence gaps and update one’s own and others’ competence (see Table 1) (Carretero, Vuorikari, and Punie 2017). This competence area has been well reflected in the case of NAV. For instance, many of our participants need to have basic competence in dealing with technical failures, since they have to handle various digital systems and tools daily, and some of these systems have relatively weak user interfaces. These technical failures include system freezing, data loss and failure of automatic updating procedures.

Many task requests on NAV data management systems overlapped because of failures to integrate and synchronize relevant information. Practitioners often have to perform the same tasks, such as data input, multiple times to ensure that all users of these systems (in or outside of NAV) have equal access to critical data. Hence many participants express frustration with the design and accessibility of case management systems that are time-consuming for data registration and sharing. Although most participants received relevant training before a new system or solution was implemented, some consider current institutional training that is operated by PPTs and videos to be ‘anti-interactive’, ‘incomprehensible’ and ‘time-consuming’.

Participants are also on different points of the digital transformation spectrum. While some are super technology users who are dedicated to exploring the possibilities of various digital solutions in fitting their practice reality, some are resistant to system upgrading and complain about the rapid rate of digitalization. Those super technology users are also more likely to consciously improve their competence via digital means and help other colleagues who are prone to technical problems. As the literature confirms, those who are not technology super users tend to learn and evolve less in a technology-rich environment, and eventually become unable to use digital tools creatively for professional purposes (Hill and Shaw 2011; Baker et al. 2014; Antonio, Raquel, and Victoria 2018).

Participants also noticed that digital competence amongst their service users could be an essential factor in shaping these individuals' experience with NAV digital services and technology-mediated practice. Service users who lack relevant resources and digital competence can encounter challenges or even exclusion from NAV technology-mediated services and practice. Examples of such users include individuals who lack BankID and other authenticated online identification tools needed to access the NAV digital platform or cannot afford smartphones, personal computers and Wi-Fi. They can also be those who lack digital competence at the instrumental and structural level, i.e. they may not know how to use a keyboard or navigate a computer system. Individuals who are sceptical of technology or lack trust in NAV digital solutions' ability to protect their privacy and personal data can also be resistant to, or have an overall negative experience with, digital practice in the institution. As concluded by previous literature, service users' diverse digital literacy levels and uneven access to ICT can inhibit equality. Defining inequalities in the new era of digital welfare and identifying critical resources for improving disadvantaged groups' digital competence are essential components to promote digital inclusion (Goldkind, Wolf, and Freddolino 2018; Olsson, Samuelsson, and Viscovi 2019; Zhu and Andersen 2020).

By examining social work curricula, we found that technology-related problem-solving knowledge and skills were given relatively greater emphasis in both the National Guideline for Social Work Education (2019) and the local social work curricula (N1, N3, N5, N6, N7, N9 and N11). Many institutions' general and course descriptions include formulations about problem-solving that are similar to those presented in the national guideline. Problem-solving knowledge and skills can fall into four categories: 1) the ability to master particular digital tools (N1, N3, N5, N6, N7, N9 and N11); 2) knowledge about different digital tools' limitations and possibilities in practice (N3, N6, N7, N9 and N11); 3) the ability to critically reflect on digital framework conditions for professional practice (N1, N5 and N11); and 4) the ability to use digital tools for knowledge building and for the development of new service and practice (N1 and N5).

The document analysis results indicate that institutions differ in the strategies they have chosen for integrating problem-solving competence as a core element of digital competence. Most have decided to progressively develop their students' digital problem-solving competence as a joint responsibility for different subjects across the teaching semesters. At the same time, one institution (N5) offers an independent course with ten student points in their fourth-semester, namely, Digitalization and Interdisciplinary Collaboration in Health and Welfare Services, which particularly addresses the digital problem-solving knowledge area. Through this course, students can expect to acquire 1) 'knowledge about different perspectives on digitalization' within health and welfare services; 2) 'knowledge about how digitalization of services can influence inclusion, equality and non-discrimination'; and 3) 'skill training on the evaluation of technology-use and digital solution on an individual level and systematic levels'.

According to our selected educators, the problem-solving dimension in DigComp's framework contains many subcategories of competencies that overlap with all other areas of competence. For example, the problem-solving dimension includes the ability to 'identify digital resources', which can also be a part of digital information management, while the ability to 'creatively use different technologies' can also serve as an overall description of competence in digital communication and content creation. In this sense, problem-solving competence can be enhanced by working on the other four knowledge areas in the DigComp framework.

Further, one educator also highlighted the importance of improving students' awareness and competence in identifying digital competence gaps amongst different user populations. As emphasized by previous literature, the increasing usage of ICTs in public welfare sectors, in digital communication or online self-services, has pressed service users to harness technologies to ensure their active roles in service. Since ICT-adoption and skilful ICT-use depends heavily on technology characteristics and individual competence and resources, and it can thus increase risks that users, especially those who are most vulnerable and need the services the most, will drop out of digital

practice, resulting in a digital divide or exclusion (Hansen, Lundberg, and Syltevik 2018; Heponiemi et al. 2020; Reamer 2013). These groups can be those who need the institution's service most, such as the homeless, poor pensioners, people with dependency problems, unemployed and refugees, who are already partially excluded or at the fringes of the welfare state.

## **Conclusion**

Our findings suggest that integrating digital competence knowledge areas into Norwegian social work education is still limited. Two primary challenges need to be further addressed to support Norwegian social work education in better integrating digital competence so that future students can meet the requirements of practice and international standards.

### ***The gap between the EU requirement and Norwegian social work curricula***

First, there is a gap between the EU's digital competence requirement and the Norwegian social work curricula. Two important knowledge areas that constitute digital competence in the DigComp framework, information and content-creation, appear likely to be missing in the Norwegian National Guideline for Social Work Education and the local social work curricula. However, these two types of knowledge have been identified as essential and competitive competence areas for social work practice in a digital society (e.g. Best, Manktelow, and Taylor 2016; Fitch 2019; Zhu and Andersen 2020).

Nevertheless, the DigComp framework has its limitations in conceptualizing digital competencies relevant to the social work domain. There is some overlapping and cross-referencing between areas and competences in the DigComp framework (Vuorikari et al. 2016). For example, as our social work educators mentioned, the problem-solving dimension generally includes competencies relevant to the other four knowledge areas. The communication dimension also highlights the ability to 'interact with different technologies' and 'share information and content,' which can be seen as a crucial part of the information and content-creation knowledge areas. Moreover, the DigComp framework is developed mainly for citizens. Therefore, it is challenging to use it as a standard to map knowledge areas of digital competence for professional social workers. Nevertheless, as mentioned previously, due to the lack of consensus in the school of social work, we aimed to use DigComp as a starting point for conceptual digital competences from multi-dimensional perspectives

### ***The gap between practice in NAV and Norwegian social work education***

The gap between practice in NAV and Norwegian social work curricula regarding digital competence is concerning. Our case study of NAV yields four important messages for social work education. First, frontline workers in NAV gradually become information-intensive professionals who search, evaluate, retrieve and manage digital information daily for direct or indirect practice and professional development. In this sense, social work education is responsible for revealing practice reality to its students and helping them master knowledge relevant to digital information. This type of knowledge can include competence in 1) understanding the value-laden nature of digital information and what different means for professional practice; 2) being able to identify, search, retrieve, ethically use and manage relevant data and information for judgement, decision-making and professional development; 3) being able to help service users to improve their digital information competence; and 4) be able to ensure data integrity and evaluate if the integrated algorithms in digital systems benefit for unbiased decision-making that promotes inclusion and equality.

Second, compared to other knowledge areas of digital competence, digital communication is weighted more in Norwegian social work education. However, there are still some aspects that may



be missing in curricula. For instance, this area should include knowledge related to different service users' distinct digital communication behaviours and preferences and the skills needed to use different digital tools to support communication, relationship-building, problem clarification, and empowerment with these individuals. Moreover, it should include knowledge of netiquette and the ability to tackle inappropriate and unethical behaviour professionally in the digital environment. Also, efficient two-way digital communication requires particular skills and resources; lack of either can lead to exclusion. Social workers need to have awareness and relevant competence to identify and combat digital exclusion and enhance service users' ability to participate in a digital society.

Third, particular safety issues and the ethical implications of digitalization are heated topics among professionals in NAV. However, Norwegian social work curricula generally provide only an overall description of digital security; many actual examples of safety and ethical challenges related to technology-use are missing, such as confidentiality, online risk, health-related risk and threats, and the blurring of private and professional boundaries.

Finally, our case study of NAV shed light on changes brought about in the social work profession due to digitalization followed by the neoliberal transformation. Norwegian social workers need to develop their understanding of neoliberalism and how its logic of managerialism has defined today's digital solutions implemented in welfare sectors and what consequence digitalization brought for service users and professional practice. Critical perspectives and reflection are more necessary today than ever before for social workers. Social workers are well placed to continually reflect upon or evaluate whether institutions' digitalization can lead to better quality and inclusive service (Kamali and Jönsson 2018; Lyneborg 2019).

### **Research limitations and future studies**

Although this study is in the Norwegian context, we believe that our findings can be relevant across borders, due to the international call for a consensus about the definition of digital competence in the social work domain. However, this study has several limitations which future studies can address. First, the document analysis of programme descriptions primarily reflects the intentional situation rather than the actual use of digital solutions in teaching-learning. Although we tried to include social work educators' voices in the study, the sample size is relatively small and confined to only one higher education institution. We need more in-depth discussions with social work educators and students across institutions to determine how digital competence can be better integrated and evaluated into the formal curriculum level and the actual teaching and learning process. Second, the case study of NAV offers an overall picture of technology-mediated practice within the organization. We need more evidence from other welfare institutions to draw a more comprehensive picture of digital competence requirements in frontline public social work.

### **Disclosure statement**

No potential conflict of interest was reported by the authors.

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