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PEER REVIEWED ARTICLE

Guidelines and Regulations for Teaching Digital Competence in Schools and Teacher Education: A Weak Link?

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ABSTRACT

Teacher education has recently been criticised for not fulfilling its obligation to adequately prepare teachers to utilise digital tools in the classroom. In this paper, we raise the question of why Norwegian teacher education does not prepare student teachers to integrate digital tools into their teaching as required by the Norwegian curriculum. We question the formal premises governing the development of digital competence in teacher education and how they correspond with the requirements of the Norwegian national education curriculum. To gain insight into this question, we analysed how digital competence is presented in the official key documents that create the framework for teacher education, and compared them to the requirements of the Norwegian National Curriculum. Our findings indicate that there is a weak link between the curriculum and the premises for digital competence in teacher education.

Keywords

digital competence, teacher education reform, national curriculum

INTRODUCTION

Teacher education is a complex institution that is a part of higher education and is closely related to schools (Jahreie, 2010). Teacher education has a double role: it develops both student teachers' professional skills and their expertise in facilitating pupils' learning. Therefore, constructing high-quality teacher education is multifaceted, requiring consideration of schools and pupils' needs, and the current curricula, in order to prepare students for future teaching positions. Goodlad (1990) declared that 'the education and training of teachers and principals must be closely tied to both the realities of schools and the conditions necessary to their substantial improvement' (p. 27). Dissatisfaction with schools is often transferred to dissatisfaction with teacher education, which is criticised as ineffective at preparing teachers for their work and as 'unresponsive to new demands' (Darling-Hammond 2000, p. 166).

Norwegian teacher education underwent a reform in 2010. The new teacher education system has stronger subject specialisations and two tracks: a primary/middle school track and a middle/secondary school track. A major aim of this reform was to educate teachers to prepare children for the future (St. meld. nr. 11 (2008-2009), 2009). To that end, teachers should be able to integrate digital tools into teaching and learning, and identify the needs of children and youths' digital lives (St. meld. nr. 11 (2008-2009), 2009). Despite the reform, teacher education in Norway has recently been criticised for not fulfilling its obligation to adequately prepare teachers for the school environment when it comes to digital competence (Gudmundsdottir, Loftsgard & Ottestad, 2014; Tømte, Kårstein, & Olsen, 2013). Tømte, Kårstein, and Olsen's (2013) report focused on how future teachers are prepared to teach with and through digital tools. The report concluded that most teacher education institutions do not have a holistic approach to developing digital literacy, and that student teachers are not equipped to utilise digital tools (Tømte, Kårstein, & Olsen, 2013). Gudmundsdottir, Loftsgard, and Ottestad's (2014) findings underpin this mismatch between teacher education and schools when it comes to digital competence. However, the reports do not elaborate why future teachers are not prepared to teach with and through digital tools when leaving teacher education. Yet, these concerns are far from new with regards to the situation of digital competence, and issues regarding future teachers' repertoires for meeting contemporary challenges were raised a decade ago (Ludvigsen & Rasmussen 2006).

In this paper, we focus on the formal premises and concentrate on the Norwegian official governing documents in teacher education, and how these treat digital competence. These documents can be described as the framework of teacher education, guiding teaching in teacher education institutions. We raise the following question:

- What are the formal premises governing the development of digital competence in teacher education, and how do they correspond with the requirements of the Norwegian national curriculum?

To gain insight into this question, we analysed how digital competence is presented in the official key documents that create the framework for teacher education, and compared them to the requirements of the Norwegian National Curriculum (Norwegian Directorate for Education and Training – NDET, 2006). This article is organised as follows. First, we briefly present the concept of digital competence that forms the basis of our analysis, before moving on to describe our methodological approach. Finally, we present, analyse, and discuss our data and findings.

DIGITAL COMPETENCE: SKILLS, LITERACY, AND COMPETENCE

In this article, we draw on digital literacy as a conceptual framework for analysing the premises that govern the development of digital competence in teacher education, discussing the use of the concepts of *digital literacy*, *digital competence*, and *digital skills*. In Norway, due to the Norwegian language's lack of a direct translation of *literacy*, the initial debate centred on two terms: digital *dannelse* (digital *Bildung*) and digital *kompetanse* (digital competence) (Erstad, 2005; Erstad 2007; Søby, 2003). Recently, references to the concept of digital competence in policy documents in Europe have increased (e.g., Ferrari, 2012, 2013; Hatlevik & Christoffersen, 2013), and we have therefore chosen to use this term.

Digital literacy is a complex term that has been incorporated within formal curricula. Curricula can also be described as social practices mirroring society's definition of tools that are deemed essential. The concept of digital literacy has been debated (Alvermann, 2002; Buckingham, 2006; Gilster, 1997; Johannesen, Øgrim, & Giæver, 2014; Lankshear & Knobel, 2004; Knobel & Lankshear, 2006; Mifsud, 2006; Tyner, 1998). Initial discussions focused on defining and operationalising the concept, how to approach it in learning, and the distinction between the manipulation of digital tools and a broader conceptual understanding (Allan, 2006; Buckingham, 2006; Gilster, 1997; Knobel & Lankshear, 2006). Tyner (1998) dichotomised literacy, presenting it as tool literacies and literacies of representation. Tool literacies are concrete and include the use of and skills in computers, networks, and technology, while literacies of representation concern facility with information and media, including critically evaluating them and identifying what they represent (Tyner, 1998). Knobel and Lankshear (2006) also argue for an understanding of digital literacy as literacies, bringing up concerns about the understanding of digital literacy as an 'it' literacy—a 'capacity or ability, a skill (or set of skills)' (p. 16), 'as it presents literacy as neutral and contextless' (p. 17). Knobel and Lankshear (2006) criticised 'it' literacy on account of it being related to consuming information rather than producing information. Tool literacy may be associated with a narrow understanding of digital competence, an instrumental perspective. The meaning of competence is not static, but changes over time, not only as a result of technological development, but also as social practices develop. An example of this can be seen in the Norwegian context, where a

broad understanding of the concept has been developed (Erstad, 2007; Johannesen, Øgrim, & Giæver, 2014; Krumsvik, 2007). This understanding applies a converging notion where tool, critical and learning competences are included. We draw on this in our analysis.

ANALYSING DOCUMENTS

In this research, we utilised document analysis (Bowen, 2009; Silverman, 2004) to identify, understand, compare, and analyse the treatment of digital competence in governing documents of teacher education (2010) and in the National Curriculum (NDET, 2006). For the purposes of our study, document analysis was deemed appropriate, as our aims are to gain insight into the premises governing the development of digital competence at teacher education, and understand the consistency and/or discrepancies between digital competence in teacher education and the national curriculum. The documents were first skimmed, both manually (reading the texts) and digitally (searching the *.pdfs), focusing on topics related to digital competence. This process we reiterated, reading the texts closely. Information was organised thematically according to tool competence and/or critical competence.

With regards to documents pertaining to teacher education, we have focused on the White Paper *St. meld. nr. 11 Læreren Rollen og utdanningen (2008–2009) (2009)*, as this forms the basis for the reform; the *National Curriculum Regulations for Differentiated Primary and Lower Secondary Teacher Education Programmes for Years 5–10*, as these ‘provide the overarching policy’ (Regulations; Ministry of Education and Research 2010b, p. 3) for teacher education programmes; and the *National Guidelines for Differentiated Primary and Lower Secondary Teacher Education Programmes for Years 1–7 and Years 5–10 (Guidelines; Ministry of Education and Research 2010a)*, which have their legal basis in the *Regulations* and supplement the *Regulations*. Furthermore, the Guidelines specify the scope, objectives, structure, and intended learning outcomes for each subject and provide the policy for teacher education institutions’ programme descriptions. It is the local teacher education institutions that are responsible for detailed course descriptions based on the National Regulations and Guidelines.

The National Curriculum for Primary and Lower Secondary Schools and the Framework for Basic Skills were analysed in order to understand the schools’ requirements with respect to digital competence. The *Framework for Basic Skills* (NDET, 2012) is an overarching document where the aim was to guide the revisions of the Norwegian National Curriculum (2006) and the objectives of the five basic skills.² We studied the Norwegian versions of the documents, as these are the official documents. We are aware that, in presenting

2. The curriculum identifies five skills (reading, writing, oral skills, numeracy, and digital skills) as basic to learning in school, work, and society, and stipulates that they be incorporated into all subject-specific curricula.

translations, we present elements of interpretation. Furthermore, they are the documents that teachers and teacher educators relate to. We also found that some official translations to English omitted parts of the text, and lacked specific subject details. After analysing the documents, we translated the relevant excerpts. The documents are listed in Table 1.

TABLE 1 DOCUMENTS ANALYSED FOR THIS STUDY

Governing Documents for Primary and Lower Secondary School	Governing Documents for Teacher Education
National Curriculum for Primary and Lower Secondary Schools	White Paper no. 11 (2008-2009)
Framework for Basic Skills	National Curriculum Regulations for Differentiated Primary and Lower Secondary Teacher Education Programmes for Years 5–10 (2010b)
	National Guidelines for Differentiated Primary and Lower Secondary Teacher Education Programmes for Years 5–10 (2010a)

In analysing the documents, we utilised a ‘skim-read-interpret’ (Bowen 2009) iterative strategy. Initially we skimmed curricula for both teacher educational tracks (primary/middle/lower secondary) and curricula for grades 1 through 10 for schools. For the purposes of this article, we took a pragmatic decision and focused on middle³ and secondary schools. We focused on how digital competence is defined in Norwegian, Mathematics, and Social Science in the seventh and tenth years of school in both the national curriculum and the national guidelines for teacher education. These subjects were chosen because they cover the largest amount of teaching hours during the ten years of compulsory school (excluding physical education). With regards to teacher education, we have also included the subject Pedagogy and Pupil-related Skills, as it serves as an overarching subject in teacher education and is the only compulsory subject.

We read printed and digital versions of these documents, conducting both manual and digital searches for the following terms: *digital*, *media*, *technology*, *tools*, *information*, *communication*, *basic skills*, and *ICT* (information and communications technology). After the initial searches, it became clear that the terms *digital* and *ICT* returned the same results as searches for *media* and *technology* because they are used in the same sentences and phrases. However, the notion of *technology* does not always parallel that of *digital*, often referring to technologies with other meanings than digital. Readings of the texts found that the National Curriculum uses the terms *copyright* and *privacy* in sentences adjacent to those with the term *digital judgement*. Such con-

3. Norwegian primary schooling lasts seven years. Children start school the year they turn six. The final three years of primary school are often referred to as the middle years (*mellomtrinnet*) in Norway. We, therefore, refer to these years as the middle years, or middle school.

junctions might be overlooked in a digital search. We systematised our data by using a spreadsheet.

Data were interpreted from a digital competence framework. With regards to the specific subjects, we juxtaposed the data from the national curriculum and the teacher education documents. Moreover, we established the meaning of digital competence being utilised, and contextualised it focusing on tool and/or critical competences. In doing this, we identified similarities and discrepancies.

FINDINGS: SIMILARITIES AND DISCREPANCIES

Firstly, we look at digital competence in the National Curriculum, and the Framework for Basic Skills, as this forms the formal definition of digital competence for Norwegian schools. Secondly, we analyse the White Paper (St. Meld 2008–2009), as this defines the role of digital competence in teacher education. Thirdly, we examine the Regulations (Ministry of Education and Research 2010b) and link these to the Guidelines (Ministry of Education and Research 2010a), which are subject-specific. Then we analyse how these premises correspond with how digital competence is treated in the same subjects in the Norwegian curriculum.

The premises for school were laid by the reform of 2006, identifying digital skills as a basic skill (2012), previously called ‘the ability to use digital tools’ (2006), to be integrated at all levels and all subjects throughout the school system. The Framework for Basic Skills (2012) defines digital skills as follows:

Digital skills involve being able to use digital tools, media and resources efficiently and responsibly, to solve practical tasks, find and process information, design digital products and communicate content. Digital skills also include developing digital judgement by acquiring knowledge and good strategies for the use of the Internet. (NDET, 2012, p. 12)

The term *skills* can indicate a limited understanding of digital competence, more akin to an instrumental tool literacy, and it is therefore crucial for understanding the concepts underpinning ‘digital skills’. This definition focuses on the ability to use digital tools in practical manners, emphasising processing, searching, producing, designing, and communicating. Furthermore, the notion of ‘digital judgement’ is highlighted, which refers to cyber ethics, security, and safety, including privacy and copyright and source evaluation. From the above definition, we see that the premises for school include both tool and critical competences.

Furthermore, in the Framework of Basic Skills’ definition, we see a dimension of having digital skills for achieving and supporting learning processes:

[...] Consequently, using digital skills is a natural part of learning both in and across subjects, and their use provides possibilities for acquiring and applying new learning strategies while at the same time requiring new and increased powers of judgement. (NDET, 2012, p. 12)

In addition to tool and critical competences, the dimension of *learning competence* is added. This dimension focuses on digital competence as a means to further learning. Keeping these premises for school in mind, it is interesting to examine how the formal documents for teacher education treat digital competence.

The White Paper (St. meld. nr. 11 (2008-2009), 2009), on which the 2010 teacher education is based, emphasises digital competence as a basic skill to be integrated into all subjects (p. 13), and in doing so follows the premises laid down by the school reform of 2006. The White Paper also emphasises the importance of teachers' competence in being able to incorporate digital media in their teaching, including evaluating different media for their pupils' learning:

It is important that teachers can assess the relevance of and make use of different media in dealing with pupils' learning. This also means being able to familiarise themselves with ethical and legal issues with the use of the media. (St. meld. nr. 11 (2008–2009), 2009, p. 13, our translation)

Furthermore, the White Paper directly refers to the need for children to achieve the competence aims in the National Curriculum (St. meld. nr. 11 (2008–2009), 2009). In addition, the White Paper points out that social media has changed pupils' role from that of consumers to producers, and gives special attention to the need for children to be aware of the complex ethical and legal issues involved in using the Internet, which often require good judgement. The White Paper argues that today's student teachers must know how these issues affect children and adolescents, as well as how to use new technology in education (St. meld. nr. 11 (2008–2009), 2009). This indicates a learning competence that focuses on a didactical dimension.

In the Regulations (Ministry of Education, 2010b), digital competence was found twice: first, when specifying that teachers should have knowledge of developing pupils' basic skills across subjects, across the curriculum and across disciplines, focusing on further developing students' basic skills, and second, digital competence was mentioned, specifically focusing on digital judgement, as we saw in the White Paper, to further children and youths' attitudes in digital arenas:

[...] understand the social perspectives involving digital and media development (safe Internet use, privacy, and freedom of expression), and be able to help children and youths develop a responsible attitude to digital arenas. (Ministry of Education, 2010b, our translation, §2)

On a theoretical level, these two documents present a holistic approach. The Regulations imply a learning competence together with the other basic skills, but do not emphasise digital skills specifically except for digital judgement. The Guidelines (Ministry of Education, 2010a) were developed on the basis of the White Paper and the Regulations. These act as the guiding principles for the development of curricula at local teacher education institutions, ensuring a nationally coordinated teacher education. In describing the content in teacher education, basic skills are referred to as

[...] both a prerequisite for the development of knowledge and a part of this competence in all subjects. (Guidelines, 2010b p. 9, our translation)

In the above, we see that the importance of basic skills is underlined. Furthermore, the Guidelines emphasise the responsibility that each subject has in attending to student-teachers' knowledge of how to develop pupils' basic skills in the subject, and the fundamental importance that these skills have for learning in general.

The subject Pedagogy and Pupil-Related Skills is the only subject that is compulsory in teacher education, spread over three years. The aim of this subject is to ensure the 'necessary subject-knowledge platform, provide methodological competence and develop skills in addressing relational and social issues to acquire a theoretical conceptual framework' (Ministry of Education, 2009, p. 2). Furthermore, this subject also focuses on students' knowledge of basic skills as a prerequisite for working with various subjects. As an overarching conceptual subject, it is natural to examine the premises that Pedagogy and Pupil-Related Skills lays for future teachers' digital competence.

In Pedagogy and Pupil-related Skills, student teachers should 'have knowledge of digital tools' (2010a, p. 17, our translation) in order to be able to 'facilitate pupils' learning progress and their development of basic skills' (p. 17, our translation). Here the focus is both tool competence as well as learning competence and being able to reflect on the didactical possibilities of using ICT. Furthermore, they are to have 'knowledge about how digital tools can support pupils' understanding of their own learning processes and are important tools in the students' learning strategies' (p. 19, our translation). This latter learning outcome for student teachers is in line with the learning competence that we have seen presented in the National Curriculum (2006), but from a more didactical perspective.

Student teachers are also to have knowledge about the media's influence on children and youths, as well as children and young people's active participation in the media society (Ministry of Education, 2010a, p.17, our translation), so as to assess various tools for supporting teaching and learning, and to reflect on the didactic possibilities of ICT use. Critical competence is presented from an evaluation of various learning resources perspectives. In another reference to student teachers being able to develop pupils' basic skills, the emphasis is

on ‘oral skills, reading and writing in order to enable them [the pupils] to meet [the] school’s and society’s challenges’ (p. 19, our translation). Furthermore, they are required to have knowledge of children and youths’ activities in the media society. However, digital responsibility does not appear to be included. We find it interesting that digital skills is left out.

The concept of digital competence seems limited when moving from the White Paper to the Regulations and further to the Guidelines when referred to in the general part. The general descriptions in the Guidelines do not bind teacher institutions adequately. The White Paper’s intention is in line with the school reform, where digital skills are to be integrated into all subjects.

DIGITAL COMPETENCE INTEGRATED INTO SUBJECTS

The Norwegian curriculum addresses digital competence in two areas: the general introduction to the basic skills for each subject (on a general level) and, in greater detail, the competence aims for each subject, which specify how digital tools should be used to achieve learning outcomes. Together, these sections lay out the premises in detail for pupils’ digital competence. We present the three subjects separately, first examining the premises that the curriculum lays and then comparing them to those in the guidelines.

Norwegian

In Norwegian studies, the focus in the general description is on how digital skills can support the learning of the Norwegian language through integration into teaching:

Digital skills in the subject of the Norwegian language means the ability to use digital tools, media and resources to get and process information, to create and edit various types of texts and to communicate with others. In this context, it is important to have the ability to evaluate and refer to sources in a deliberative manner. Development of digital skills is part of learning to read and write in Norwegian through searching for, using and eventually assessing [texts], referring to digital sources in written and oral texts and producing increasingly complex texts. (NDET, 2013b, p. 5, our translation)

Here, the subject and digital skills, tool and critical competences, appear to be closely interconnected. Digital skills are incorporated into learning to read and write, and as such, digital skills and Norwegian complement each other. Digital competence is manifested through different learning activities, such as obtaining and processing information and creating and editing texts in Norwegian. Furthermore, digital skills in Norwegian also explicitly deal with issues of digital judgement, including knowledge of copyright and privacy laws and the critical evaluation of sources:

It also involves developing knowledge of copyright and privacy law and having a critical and independent attitude towards different types of digital sources. (NDET, 2013b, p. 5, our translation)

In the competence aims for the Norwegian language, we also see a focus on producing, assessing, and presenting texts using various tools and media. Composite texts with hyperlinks are specifically mentioned as an end-of-year goal for the seventh year of school. Searching for information is again mentioned, including the ability to evaluate and select information. The skills referred to as digital judgement are present in these competence aims, which concretise the intentions of the general description, emphasising both tool and critical competences.

In comparing digital skills in the curriculum for schools to the learning outcomes for Norwegian in the Guidelines, we see that student teachers are expected to 'have knowledge of the current school curriculum for Norwegian' (p. 30) and can use the curriculum to formulate goals for teaching Norwegian and develop relevant criteria for assessment (Ministry of Education, 2010a, p. 32). References to digital competence include knowledge of literature in different media and what happens in transposing a text from one medium to another. Digital competence is also referred to in conjunction with composite texts:

[U]se different digital tools in Norwegian language, to create and evaluate digital composite texts (p. 31, our translation)

The concept of digital judgement as described in the school curriculum is not mentioned under the subject of Norwegian in the Guidelines. The national guidelines give the Norwegian language subject primary responsibility for teaching the three basic skills of speaking, writing, and reading, but not digital skills. This is in itself interesting.

There are very few direct references to digital competence, which indicates a gap between the requirements laid by the curriculum and the Guidelines. While we see both tool and critical competence in the curriculum, we see only an indirect reference in referring to basic skills in general. While Norwegian in the curriculum takes a specific responsibility for digital skills, this is not the case with the Guidelines, where oral skills, written, and reading are the specific responsibilities of Norwegian. In learning outcomes, we see no evidence apart from the creation of composite texts and the ability to make use of different tools for teaching Norwegian. While the first is specific, the latter is more vague and does not require a high level of commitment.

Mathematics

In the general description of digital skills in the Mathematics curriculum (2006), the focus is on tool, critical, and learning competences, in terms of how digital tools can be used to support learning in mathematics:

Digital skills in mathematics involve using digital tools for learning through games, exploration, visualisation, and presentation. This also involves learning how to use and assess digital tools for calculations, problem solving, simulation, and modelling. Additionally, it means the ability to find information, and then analyse, process, and present data with appropriate tools and to evaluate sources, analyses, and results. Developing digital skills involves working with composite digital texts of increasing complexity. As well, it means becoming more aware of the benefits that digital tools have for learning in the subject of mathematics. (NDET, 2013a, p. 5, our translation)

Critical competence is emphasised through the importance of finding, analysing, and processing information and results, along with the critical evaluation of sources. The competence aims to follow up on several topics with a slight twist: the addition of ‘with and without digital tools’ (NDET, 2013a, pp. 7–9). This is interesting, as analogue and digital tools for mathematics are linked. Digital skills in the competence aims are visibly linked to learning mathematics, such as data collection and presentation, as well as drawing and exploring geometrical figures, co-ordinate systems, and maps, but there is no focus on aspects of digital judgement such as copyright and privacy, but only on critical evaluation of sources and results. Both tool and critical competences are strongly linked to Mathematics as a subject.

In the learning outcomes for Mathematics in the Guidelines, we found only two citations that refer to digital competence:

- have knowledge about expressing themselves orally, read, expressing themselves in writing, and using digital tools in mathematics (p. 35, our translation)
- have insight into and experience using of various learning materials, both digital and others, and the possibilities and limitations of such teaching aids (p. 35, our translation)

The focus is on insight and experience in using digital tools and other teaching aids in the subject and knowing their potential and limitations. Compared to the competences presented in the curriculum, we see that tool, critical, and learning competences are directly linked to the Mathematics in the curriculum, but not in the Guidelines. The competence defined in the Guidelines is strongly tool-oriented, focusing on the use of tools, and with little or no focus on critical and learning competences. Furthermore, the focus is on the student teacher’s own basic skills, but there is no didactical dimension to learning competence.

Four of the basic skills in the curriculum are prioritised by a ‘home subject’ with which they are associated: mathematics covers numeracy skills, and Norwegian speaking, reading, and writing skills. However, digital competence is neither prioritised in any of the subjects so far reviewed, nor does it have a ‘home subject’ (Engen & Øgrim, 2009).

Social Science

The general description of digital skills in the social sciences offers a broader approach to digital competence. In the first part we see tool and critical competences explicitly mentioned:

Digital skills in social studies means the ability to use digital resources to search for information, explore websites, critically assess sources, and select relevant information on topics in the subject. Digital skills also include using digital tools for presentation and collaboration to prepare, present, and publish multimedia products. Additionally, digital skills means the ability to communicate and collaborate digitally on social science topics and to follow the rules and norms of online communication, including privacy and copyright laws. (NDET, 2013c, pp. 5–6, our translation)

The use of digital tools to support presentation and collaboration is mentioned specifically, and the rules and norms of online communication and privacy and copyright law are highlighted as important aspects of digital skills. Furthermore, in the competence aims, ‘netiquette’ and privacy and copyright law are dealt with from the fifth to the seventh years of school, as well as from the eighth to the tenth years. The social sciences also focus on the critical evaluation of sources throughout middle and lower secondary school. The second part focuses explicitly on learning competence:

Developing digital skills in the social sciences involves learning to use digital tools and media to acquire academic knowledge, to express competence, and to reinforce academic information. Digital skills in the social sciences are learned in a process that starts by using digital tools to find and create academic content. Also, digital skills include the ability to develop and use various search strategies, to make critical choices and to express academic reflection. (NDET, 2013c, pp. 5–6, our translation)

Similar to the Norwegian curriculum, tool competence is strongly intertwined with learning competence. Social Science presents a comprehensive, holistic approach to digital competence.

In the learning outcomes in the Guidelines for social sciences, the focus is on tool, critical, and learning competences from a didactical dimension:

- can use sources and materials relevant to Social Science, developing pupils' basic skills
- use and evaluate digital tools and sources for teaching, and help ensure that students can relate actively and critically to digital media. (Ministry of Education, 2010a, p. 76, our translation)

It is clear that the subject has an explicit responsibility for evaluating sources. The other dimensions of digital judgement that are especially visible in the curriculum, copyright and privacy, are not mentioned here. However, while the learning outcomes correspond to a certain extent with the curriculum, the learning outcomes are far less comprehensive and holistic.

WEAK LINKS

The double role of teacher education means that the relationship between the curricula for teacher education and for schools is crucial. We conclude that there is an obvious disparity between the terms that the curriculum sets for the education of digitally competent pupils and those that the governing documents of teacher education set for the education of digitally competent teachers. This disparity appears both in how digital competence is understood and in the degree of commitment to it.

Our findings indicate that, firstly, digital competences fade from the White Paper to the Guidelines. The White Paper has a broad understanding of digital competences, including tool, critical, and learning competences. However, the Guidelines have a narrower tool focus, where critical and learning competences are more implicit and less visible and therefore less binding.

Secondly, on a general basis, the curriculum is clear and takes a coherent, holistic approach to the use of digital tools and the development of digital skills, including digital judgement. The premises for digital competence in teacher education are less clear; they are somewhat fragmented and random.

Thirdly, similarities and disparities vary according to the subject. We see that there are disparities between the curriculum and the premises for digital competence in teacher education with regards to which dimensions in digital competence are underlined—tool, critical, and/or learning competences. For example, the teacher education subjects reviewed in this paper specifically mention digital judgement only within the context of the social sciences,⁴ while these subjects' counterparts in the curriculum explicitly address the topic. We see that, while learning competences are to a certain extent emphasised in the

4. Digital judgement is addressed in religion, philosophy of life, and ethics; arts and crafts; and the critical evaluation of sources in the social sciences, religion and philosophy of life, and ethics.

Guidelines, there are differences as to whether it is the didactical aspects that are highlighted or student learning.

To sum up, we see that digital competence in the curriculum does not correspond with formal documents that form the premises for teacher education. Weak links between the curriculum and guidelines for teacher education imply that teacher education does not meet the needs of school. Furthermore, vague, non-binding guidelines give the responsibility for the development of local plans to promote teachers' digital competence. Regional and local differences emerge between and within the different teacher education institutions, which again means that it is not ensured that *all* student teachers are digitally competent. Local study plans may include digital competence to a greater degree than the National Guidelines. Furthermore, practices in local teacher education may differ, and this study does not refer to practices but rather discusses premises that formal documents lay out for teacher education. Thus, the recent criticisms aimed at teacher education (Tømte, Kårstein, & Olsen, 2013; Gudmundsdottir, Loftsgard, & Ottestad, 2014) appear to highlight an important issue. However, it is not simply a question of teacher education institutions failing to do their job. The problem is that formal premises for digital competence in teacher education have not been formulated.

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