What is the ‘problem’ that digital competence in Swedish teacher education is meant to solve?

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ABSTRACT
This paper explores how policy makers argue for the importance of digital competence in Swedish teacher education. A policy analysis of key policy documents from the government and from government-affiliated organisations from the time period 2011–2016 is conducted using Carol Bacchi’s ‘what’s the problem represented to be?’ approach. The paper critically examines underlying assumptions and particular viewpoints that underpin how the concept digital competence is formulated in key policy texts.

Digital competence is found to be a part of a globalised policy discourse that conceptualises education as a necessity for a competitive work force. Policy makers describe Swedish schools as unsuccessful in providing pupils with adequate digital competence and how this may cause Sweden to fall behind in global competition. Shortcomings in schools are considered to be caused by low digital competence being developed as part of teacher education. In the studied policy documents, the ‘problem’ that digital competence in teacher education is meant to solve is consequently an issue of economic growth and global competition. The strong emphasis on economic benefits and an instrumental perspective on technology expressed in the global policy discourse on digital competence leads to the need for a renewed focus on Bildung and civic competences.

Keywords
Digital competence, teacher education, policy analysis, global policy discourse

INTRODUCTION
The accelerating development of digital tools has provoked both policy makers and business people to envision major changes in society. Education and the school system are no exceptions: since the 1980s, great efforts have been made to furnish schools with computers and digital infrastructure (Cuban, 2001). For more than twenty years, political rhetoric in Sweden has envisioned Sweden as a leading IT nation, and the investments made in digital tools and training through national ventures between 1995 and 2002 are unparalleled in the history of Swedish school development (Hallsén, 2013).
For these reasons, it is not surprising that the Swedish government in 2011 formulated a national digital strategy, stating that ‘Sweden will be the best in the world at utilizing the possibilities of a digital society’ (Ministry of Enterprise and Innovation, 2011, p. 6). One important actor in the implementation of this strategy is the Digitalisation Commission who in a government report (Digitalisation Commission, 2014) emphasise that ICT must be ‘a natural part of education’, from pre-schools to universities, and that both teachers and teaching need development in this area (p. 11). The commission proposes that the requirements for the degrees within teacher education should be revised to ‘clarify and insert additional requirements for pedagogical and subject based digital competence’ (Digitalisation Commission, 2014, p. 206). This proposal has also been included in policy documents of the Swedish Association of Local Authorities and Regions (SKL) (2015) and the National Agency for Education (NAE) (2016). But if this proposal is the solution, then what is the problem that these policy documents imply needs to be solved?

To answer this question, inspiration is drawn from policy researcher Carol Bacchi’s ‘what’s the problem represented to be?’ (WPR) approach. The WPR approach begins with the assumption that what we claim we want to do about something suggests what we think needs to change, and thus how we constitute the ‘problem’ (Bacchi, 2012). In the tradition of discourse analytical research, the power of discourses over the objects of which they speak is recognised (Foucault, 1972). Since conceptualisations and definitions of digital skills shape education (e.g. Talja, 2005), it is important to critically analyse how key policy documents conceptualise digital competence (DC). The present study examines underlying assumptions and particular viewpoints, specifically a competitive and economic focus, that underpins how the concept of DC is formulated in key policy texts.

In Sweden, the public school system is decentralised and municipalities or private actors operate pre-schools and schools. Teacher education is offered by universities, financed and regulated by the government. This makes teacher education an important tool for the government to influence public schooling. Previous research has studied how arguments for digital tools in teacher education have been presented in government policy between 1994 and 2011 (Hallsén, 2013). However, how policy makers, such as the government, have argued for the importance of DC in teacher education following the latest reform of 2011 has not been studied previously. Two research questions guide this study:

1. How do policy makers frame the ‘problem’ that increased DC in teacher education is meant to solve?
2. What may the consequences of this way to represent the ‘problem’ be?

PREVIOUS RESEARCH

In a policy analysis of how the Swedish government argues for changes in teacher education and for the use of digital tools, Hallsén (2013) finds that teacher education in general is described as being one step behind schools. Efforts to strengthen the knowledge in teacher education of how to use digital tools to enhance learning is often legitimised by
stating that schools, and especially pupils, have come further in their use of digital tools. From the 1990's to today, society and state policy have expressed a strong belief in digital tools as something that will profoundly alter and improve schooling and teacher education, while confidence in teacher education has been weaker (Hallsén, 2013). Similarly, Haugsbakk (2013) points out how national policy documents in both Sweden and Norway reflect an instrumental perspective on technology: investments in technology will lead to better learning results, and this will support economic development in society. These findings illustrate what Cuban (2001) refers to as a ‘technological push’, where little consideration is given to the needs of learners, teachers or teacher education when increased use of digital tools is advocated: technology in itself is seen as a catalyst for educational change. In this rhetoric, technology is a symbol of change which is understood as something inherently good – despite indications that the use of computers in schools may not lead to increased efficiency (Cuban, 2001), or better learning outcomes (Elstad, 2016).

Enochsson and Rizza (2009) show how, according to students, the integration of digital tools in teacher education is often not satisfactory. In Norway, where DC is officially formulated as the fifth basic skill for all levels of school, several studies have investigated how DC is understood within and integrated into teacher education. The studies report insufficient DC among teacher educators, and that the use of digital tools in teacher education is less frequent and less developed than in schools (e.g. Instefjord & Munthe, 2016; Krumsvik, 2011; Lund, Furberg, Bakken & Engelen, 2014). These findings can be related to the idea that educating teachers will fulfil the promises of digital tools in education. Previous studies (e.g. Cuban, 2001; Gouseti, 2013; Selwyn, Gorard & Williams, 2001) indicate how this idea is common, since insufficient skills or interest among teachers are considered to be the main obstacles for the successful integration of digital tools in schools.

To stay competitive in global economics, education is widely considered a key factor, which explains the growing interest of politicians in controlling and reforming education (Ball, 2013; Lilja, 2010). Globalisation has also led to an increasing influence of international policies on national policy documents. Taylor and Henry (2007) describe this influence in terms of globalised policy discourses (cf. Sjöberg, 2011). The strong belief in digital tools as the solution to all possible problems within the educational system (see Selwyn et al., 2001) can be understood against the backdrop of a dominant globalised policy discourse. For more than two decades, government policies and international organs such as the EU commission and the OECD have described digital technology as redefining society and promoted education as a means for economic competitiveness (Brown, Lauder, Halsey & Wells, 1997; cf. Haugsbakk, 2013). In this process, marketing strategies of the ICT industry have shaped ideas concerning the redefining properties of educational technology (Nivala, 2009; Player-Koro & Beach, 2013). It is against this background that, for instance, the Key competences for lifelong learning (European Commission, 2006) should be understood. The key competences, including DC, are influenced by the work of a research group initiated by the OECD in 1998 (see OECD, 2005). The group used results from PISA tests to identify key competences and focused on quantification to provide secure measures (Liedman, 2008).

Indications that schools and teacher education are not successfully integrating digital tools can be related to the overly optimistic rhetoric of the dominant discourse that com-
bines technology, education and economic competitiveness. Player-Koro (2013) and Nivala (2009) argue for the need to critically examine the technological determinism and economic perspective expressed in the dominant discourse, which has promoted an unrealistic view of the promise of digital tools in education. Against this background, the present study aims to make a contribution by using the WPR approach to critically examine the problematisations in key policy documents that motivate the call for increased DC in Swedish teacher education following the latest reform in 2011.

RESEARCH DESIGN

The WPR approach is a poststructural methodology for policy analysis. Policy – such as decisions, guidelines or laws – is understood as a cultural product that implies that there are ‘problems’ that need to be solved: ‘Policies give shape to “problems”; they do not address them’ (Bacchi, 2009, p. x). The problems that are implicit in public policies are made explicit through investigating the assumptions and presuppositions that lie behind a certain policy. The goal is ‘to understand policies better than policy makers’ (Bacchi, 2009, p. xix). In this study, reports and strategies from the government, or government-affiliated organisations, are seen as authoritative verbal acts, expressing what is perceived to be the ‘official truth’ about, in this case, teacher education and DC. These documents are discursive ‘practices that systematically form the objects of which they speak’ (Foucault, 1972, p. 49).

Bacchi argues that problematisations – how something is represented as a problem – govern us. Therefore, we need to question taken-for-granted assumptions in government policies through a critical mode of analysis. The WPR approach offers a way to understand the construction of a policy through an investigation guided by six questions (Bacchi, 2009, p. 2):

1. What’s the ‘problem’ (…) represented to be in a specific policy?
2. What presuppositions or assumptions underlie this representation of the ‘problem’?
3. How has this representation of the ‘problem’ come about?
4. What is left unproblematic in this problem representation? Where are the silences?
   Can the ‘problem’ be thought about differently?
5. What effects are produced by this representation of the ‘problem’?
6. How/where has this representation of the ‘problem’ been produced, disseminated and defended?

The first question aims to identify implied problem representations. The second question draws attention to assumptions and taken-for-granted facts. Following Foucault (1972), what is undisputed in a certain problematisation is examined, together with the conceptual logic behind the problem representation. The third question is used to trace the history of the current problem representation. This can illustrate that things could be different, which destabilises taken-for-granted problem representations.

Question four aims to critically analyse circumstances that allow some problematisations to assume dominance while others are silenced. When a policy gives shape to a ‘problem’, other perspectives are simultaneously silenced; each discourse offers only a particular
and partial perspective (Foucault, 1972). One presumption in the WPR approach is that problematisations may function to benefit some and harm others. To address this issue, and to be able to discuss alternatives, the fifth question continues the critical mode of analysis by identifying and assessing the effects of certain problem representations. This interest in material effects is a response to a discourse-analytical tendency to neglect how discourses affect people’s daily life and how non-discursive elements interact with discourses (Bacchi, 2009). The sixth question examines how problem representations reach target audiences and attain legitimacy.

The six questions form an analytical frame, and depending on theme and research questions, the exact order or the emphasis on certain questions can vary (Bacchi, 2009). In this paper, the first three questions are in focus in the section Implied problem representations and their underlying assumptions, while questions four and five are discussed in the section Consequences of how the ‘problem’ is represented. Question six is partly answered below when the selected policy documents are described and analysed, but this study has emphasis on the first five questions.

MATERIAL AND ANALYSIS
I selected texts to address the aim to examine problematisations in government policy that motivate the call for increased DC in Swedish teacher education following the latest reform in 2011. I used search engines and a specialised search tool2 to search for policy documents, from the government or from government-affiliated organisations, that dealt with teacher education, DC and/or ICT. The following documents from the time period 2011–2016 were selected based on relevance and an appreciation of their influence on educational policy:

IT in the service of man: A digital agenda for Sweden (Ministry of Enterprise and Innovation, 2011)
A national digital strategy formulated by the government. The main goal of the digital agenda is that Sweden will be the best country in the world when it comes to utilising the possibilities of a digital society.

A digital agenda in the service of man – a brightening future can be ours (Digitalisation Commission, 2014)
A Government Official Report with a main focus on the area of schooling and teaching from the committee commissioned by the government to propose how the goals of the digital agenda can be realised. The committee released four thematic reports between 2013 and 2015, and a final report in 2016 with long-term proposals for the digitalisation of Swedish society.


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Proposal for a national strategy for the digitalisation of schools (SKL, 2015)
A proposal for a strategy for the digitalisation of schools with the vision that in 2020, Swedish schools should be the best in the world when it comes to utilising the possibilities of a digital society. The strategy was developed by a national forum for the digitalisation of schools, commissioned by the government and SKL in 2013. SKL is both an employers’ organisation and an organisation that represents, and acts on the initiative of, all of Sweden’s municipalities, county councils and regions.

Presentation of the task to propose national IT strategies for the school system (National Agency for Education, 2016)
A report from the NAE that presents the results of a task assigned to them by the government in 2015 to propose national IT strategies for the school system.

The four documents have differences in form and function, but are all formulated or commissioned by the government and, as will be shown, present a coherent line of argument from 2011 to 2016. The WPR approach directs our attention to how governments formulate ‘problems’, since this is reflected in legislation and other key ways of governing (Bacchi, 2009). While I find this view reasonable, it is worth noting that problematisations of non-government actors are not given equal consideration.

To identify implied problem representations and to examine the conceptual logic behind the problem representations, analysis began with an initial reading of the documents, and the identification of passages concerning digital tools and DC, both in general, and in relation to schools and teacher education. The analysis focused on identifying binaries or dichotomies to unveil how understandings of issues are shaped, and to identify key concepts and the meanings given to those concepts (cf. Bacchi, 2009). Certain ways to describe key concepts, and to attribute responsibility, guided a thematic analysis that allowed the identification of five recurring themes: digitalisation changes society profoundly and presents new opportunities and challenges; digital tools offer new possibilities for learning and teachers; digital tools present certain risks; shortcomings within the school system; and shortcomings within teacher education.

The identified text passages were then collected and marked according to theme. A second reading of the thematically categorised text passages then began, focused on identifying more nuanced sub-categories (for example, in what ways digital tools are described as positive – for education, for equality etc.), and structuring and condensing arguments. In this phase, the identification of recurring phrases and arguments presented in conjunction with the key concept DC, together with references to policy documents from the EU and OECD, guided an inquiry into how the problem representations had come about. This step of the analysis facilitates the discourse analytical ambition to question taken-for-granted assumptions (Foucault, 1972), as the identification of specific moments in time where key decisions were made illuminates how assumptions evolve. The WPR approach acknowledges that the researcher, embedded in the time and context of what is studied, cannot make judgements from an outside position (Bacchi, 2009). The steps of the WPR approach and comparisons with other studies contribute to the reliability and validity of the present study.
IMPLIED PROBLEM REPRESENTATIONS AND THEIR UNDERLYING ASSUMPTIONS

In this section, the first two questions of the WPR approach are answered by examining the five main themes identified in the analysis of the policy documents.

1. Digitalisation changes society profoundly and presents new opportunities and challenges

This theme describes a narrative where digital tools are considered to change society in a profound way. In the digital agenda, the government depicts the digitalisation of society almost as a force that cannot be resisted: ‘People affect, and are affected by, digitalisation whether they want it or not. Digitalisation changes all parts of society and turns old truths upside down’ (Ministry of Enterprise and Innovation, 2011, p. 12). These are drastic words with deterministic and iconoclastic connotations. Other policy documents are generally more sober, but overall, the profound and transformative changes caused by digital tools within all parts of society are emphasised in all the sources. In the digital agenda, all of society is said to benefit from digital tools, but economic growth is emphasised.

The changes that digitalisation brings are presented both in terms of new opportunities (see below), but also as new challenges. A key concept that appears in this context is digital competence. To benefit from the opportunities offered by digital tools, and to tackle the challenges, ‘digitally competent citizens’ are required (SKL, 2015, p. 2). DC is said to be necessary for full civic participation in society, but more specifically, the digital agenda points out that the main ambition is that ‘[e]veryone of working age should have good digital competence to be employable or to be able to start and run companies’ (Ministry of Enterprise and Innovation, 2011, p. 23). In the policy documents, innovation and development of products and services are also closely linked to DC. The focus on employability, innovation and economic aspects strongly resembles how DC is described by the EU (see the next section).

A sense of security and trust is also identified as important, both to create a general level of trust within society to stimulate innovation, economic growth and participation in society as citizens, but also to stimulate a wider use of digital tools. A lack of trust in digital tools, together with a lack of knowledge, are presented as the reasons why some people are not taking advantage of the possibilities offered by digital tools (Ministry of Enterprise and Innovation, 2011, p. 16).

2. Digital tools offer new possibilities for learning and for teachers

This theme includes a narrative about how digital tools offer possibilities for education. Two sub-themes are identified: possibilities for learning and for teachers.

Digital tools offer possibilities for learning. A repeated argument is that digital tools can offer ‘increased variation, collaboration and individualisation’ as information sources ‘become infinite’ (SKL, 2015, p. 4). Communicative and audio-visual properties of digital tools are also described as enablers of new forms of learning, for example through collaboration and multimodal features in pre-school and school. The Digitalisation Commission
also emphasise how ‘[o]ne of the most commonly reported effects of introducing computers or tablets in schools is that pupils’ motivation and commitment increases’ (2014, p. 172).

Digital tools offer possibilities for teachers. Digital tools are said to enable new digital learning resources and new ways of working as a teacher, with improved ways to communicate with pupils, parents and colleagues, as well as offering better efficiency in administrative work. By use of the key concept digital learning resource, emphasis is placed on how digital tools are resources for learning. The concept is sometimes used in relation to Open Educational Resources, the practice of sharing openly available learning resources among teachers, and sometimes as digital textbooks. Through more varied and innovative teaching, digital learning resources are described as a way to contribute to ‘the possibly most pressing issue of equality in Swedish schools, that the results of boys continue to deteriorate’ (Digitalisation Commission, 2014, p. 129). In a wider perspective, digital tools are envisioned to contribute to a general ‘improvement of results’ and better efficiency in schools (National Agency for Education, 2016, p. 4).

3. Digital tools present certain risks

Descriptions within this theme are the least commonly recurring among the five themes, and are not articulated in all the sources. Certain risks associated with digital tools are typically mentioned as a kind of disclaimer in conjunction with passages concerning enabling features: ‘ethical and legal questions are brought to the fore when social media and digital learning resources become part of the learning process’ (SKL, 2015, p. 2). Here, the key concept of digital learning resource is put in the context of ethical and legal matters. Among the ethical considerations are bullying and integrity issues. Bullying is said to take on new dimensions with digital tools, since they enable new forms of communication. Issues concerning integrity are mentioned in relation to how large amounts of personal data can be aggregated for use in learning analytics. The legal considerations mainly deal with copyright issues, and how the aggregation of personal data in cloud services complies with current legislation. Apart from these ethical and legal issues digital tools can be described as risks since they might be distracting: ‘Pupils complain of the distraction more than teachers’ (Digitalisation Commission, 2014, p. 173), and reportedly, social media and computer games can lure some pupils away from schoolwork.

Themes two and three can be understood as binaries In the previous theme, digital tools (or digitalisation) is portrayed as something important and beneficial for almost every part of society, and especially for teaching and learning. A contrasting view is offered in this theme, but potential risks or threats that digital tools could pose are generally marginalised in the sources.

4. Shortcomings within the school system

In this theme, descriptions of a number of general challenges for the Swedish school system have been gathered, such as deteriorating results in international tests (such as PISA), insufficient equivalence between schools, and a shortage of certificated teachers. In terms
of digitalisation, the policy documents state that schools must be able to take advantage of the opportunities that digitalisation offers. Otherwise, ‘European and Swedish education, and ultimately our industry and economy, risk losing in competitiveness against other parts of the world that forcefully and systematically invest in the digitalisation of education’ (Digitalisation Commission, 2014, p. 132). It is repeatedly stated that digital tools should be obvious and natural choices for teaching and learning in Swedish schools, but that schools generally fail to meet, and adapt to, an interest from pupils in using new technologies in school.

The main problematisation within this theme concerns how Swedish schools, despite large investments in digital infrastructure and good overall conditions, only achieve average results in international comparisons of use of digital tools in schools: ‘Sweden is one of the countries who have invested most in technology in schools, but is only ranked average when it comes to use [of digital tools]’ (SKL, 2015, p. 3).

In these quotes, results from international comparisons and the pressure of global competition are important discursive devices in the shaping of policy and of what constitutes the ‘problem’. By describing how Sweden is ‘only ranked average’, the competition metaphor is invoked: DC is conceptualised as a competition between nations. The policy writers argue that the mediocre results should be addressed in two ways: by providing more in-service education for teachers, and by adding more focus on digital tools in teacher education. This brings us to the fifth theme – shortcomings within teacher education.

5. Shortcomings within teacher education

This theme collects descriptions where teacher education is portrayed as in need of change. Policy writers state that municipalities are complaining of a lack of DC among newly qualified teachers, and that deficiencies in teacher education result in deficiencies among teachers (Digitalisation Commission, 2014, p. 166).

Reports of insufficient use of digital tools and low ‘ICT pedagogical competence’ in teacher education programmes are presented, and it is argued that ‘The swift and profound on-going societal development caused in part by digitalisation must also be reflected in teacher education’ (Digitalisation Commission, 2014, p. 206). Again, digitalisation is presented as a strong force that drives a rapid and profound development of society. Swedish schools are described as underperforming when it comes to use of digital tools, and one of the main reasons – and one of the most important determinants to change – is teacher education. In line with this view, the NAE asserts that ‘there is great need to clarify and develop the area digital competence in teaching and requirements of teacher education’ (2016, p. 23).

This argument is in line with findings presented by Hallsén (2013): both society and state policy describe digital tools as a way to improve both schooling and teacher education, while teacher education in general is described as something that needs to improve. In other words, a dual pressure to increase DC is placed on teacher education, since a lot of faith is placed in the promise of new technology, and little faith is placed in teacher education.
Summary of the five main themes

To summarise the five main themes, the policy documents represent the ‘problem’ that increased DC in teacher education is meant to solve in the following way:

While some risks are identified, digital tools are said to improve education through new forms of learning and more varied and innovative teaching. In a wider perspective, DC in the workforce is considered necessary for economic growth, and Sweden is seen as in risk of falling behind in global competition if schools fail to provide pupils with adequate DC. Swedish schools, despite large investments in digital infrastructure and good overall conditions, only achieve average results in international comparisons of use of digital tools in schools. Shortcomings in schools are considered to be caused by insufficient use of digital tools and low DC being developed as part of teacher education. The consequences of these ways to represent the ‘problem’ will be discussed further below, but first we turn to how these representations of the problem have come about.

How has the representation of the ‘problem’ come about?

The requirements for the degrees within teacher education stress that digital tools need to be used ‘confidently’ and ‘critically’ in pedagogical activities with children and pupils (SFS 1993, p. 100). These expressions, and the connection between DC and an economic and competitive perspective, can be traced back to a policy document from the EU, entitled Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning (European Commission, 2006). I argue that this is an example of how a globalised policy discourse from a supra-state agent impacts national education policy practices (see Player-Koro, 2013; Taylor & Henry, 2007). In the report from the NAE (2016), it is explicitly stated that the suggestions for national IT strategies for the school system should be built upon research, documented experience, the view of knowledge and learning expressed in curricula, and the 2006 recommendation from the EU.

Influenced by writings from the OECD on key competences (e.g. OECD, 2005), the recommendation from the EU asserts that globalisation presents new challenges and that ‘each citizen will need a wide range of key competences to adapt flexibly to a rapidly changing and highly interconnected world’ (European Commission, 2006, p. 13). The eight key competences, including DC, are all seen as equally important for ‘a successful life’ and ‘employability’ in a knowledge society. It is stated that DC ‘involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication’ (European Commission, 2006, p. 15).

This way of framing DC has inspired Swedish policy makers, even in passages where the concept is not used (as in the requirements for degrees within teacher education). When DC is mentioned, for example in the digital agenda (see above) and in the report from the NAE where DC is linked to pupils’ ‘innovative ability’ and to employability (2016, p. 19), the connection to the rhetoric found in the EU document is evident.

To conclude, several assumptions, key arguments, key concepts and specific phrases in the Swedish policy documents concerning digitalisation of schools and teacher education can be traced back to a globalised policy discourse found in documents from the EU and the OECD that combines technology, education and economic competitiveness (cf. Brown...
et al., 1997). This is notable, since these assumptions and arguments create the foundation for the framing of the ‘problem’ that increased DC in Swedish teacher education is meant to solve.

**CONSEQUENCES OF HOW THE ‘PROBLEM’ IS REPRESENTED**

What is left unproblematic in this problem representation?

The fourth and fifth questions of the WPR approach help us investigate the consequences of how the ‘problem’ is represented. The fourth question brings our attention to what is not problematised in a policy. When the problematisations in the policy documents represent DC to be a necessity for economic growth, and schooling as a key determinant in a situation of global competition between continents and countries, other perspectives are silenced. As discussed above, DC is in this respect part of a globalised policy discourse with a strong economic perspective focused on lifelong learning and employability. The familiar description of education as instrumental for economic growth highlights competitiveness on a global market and a neoliberal focus on the responsibilities of the individual at the expense of notions such as Bildung and civic participation (Cuban, 2001). Krumsvik (2011) argues for a stronger position of Bildung in higher education and emphasises how DC among teachers should include an ‘awareness of its implications for learning strategies and the digital Bildung of pupils and students’ (p. 45). However, Bildung is not mentioned in key Norwegian policy documents, nor in the analysed Swedish texts. In general, there is little room for other concepts, and perspectives, that could be used to describe use of digital tools in learning situations. One alternative concept is digital learning resources. This term conveys a certainty that digital tools are learning resources, thereby exemplifying the deterministic and unnuanced language of what Selwyn (2016) labels ‘Ed-Tech Speak’.

An alternative perspective is offered by the discourse on Media and Information Literacy (MIL). MIL is advocated by educators, researchers and policy makers such as UNESCO and the Swedish Media Council (Sundin & Rivano Eckerdal, 2014). The UNESCO framework for MIL for school and teacher education aims to strengthen media knowledge in relation to citizenship and democracy (Wilson et al, 2013). Information literacy, now integrated into MIL (Sundin, 2015), springs from the intersection of learning environments and library practices where a focal point is the interaction between learning and information seeking, and the critical evaluation of sources (see for example Alexandersson & Limberg, 2012). Compared to the discourse on MIL, the global policy discourse on DC promoted by the EU and the OECD is more concerned with economic growth than civic participation, democracy and critical thinking. Taylor and Henry (2007) suggest that policies from UNESCO tend to emphasise core humanistic values, while policies from the OECD instead reflect liberal market principles. It is worth considering what the different starting points might mean for how digitalisation is understood and implemented, for example when it comes to introducing commercial services to children and issues concerning data storage and personal integrity.

Something else that fails to be problematised in the studied material is the influence of comparative educational indicators, such as standardised international tests. These are considered critical quality indicators to assess the competitiveness of states, and conse-
quenty become important argumentative devices in the shaping of educational policy (Cuban, 2001; Haugsbakk, 2013; Lilja, 2010). Haugsbakk (2013) even suggests that shocked reactions and perceived external threats following the PISA results are the main drive behind linking education to productivity and advocating the pedagogical use of digital tools. The role these indicators play in shaping and reproducing the predominant economic perspective in the globalised policy discourse on DC warrants critical reflection, which is something that is absent in the studied material. The importance attributed to standardised tests should be understood in relation to what Liedman (2008) identifies as the main motivation behind the work on the key competences for lifelong learning: quantification. Secure measures are supposed to enable rational choices for educational policymaking, ultimately leading to a more effective workforce.

What effects are produced by this representation of the ‘problem’?

The fifth question of the WPR approach asks about the effects produced by a certain representation of the ‘problem’, including attributions of responsibility and material impact (Bacchi, 2009).

The economic perspective evident in how DC is represented in the studied material may privilege a certain view on digital tools as instrumental for employability and economic growth, rather than a focus on the pedagogical and civic dimensions. This can be seen as part of a larger trend where the main purpose of education is no longer to contribute to the civic good of society, but rather to produce competitive employees for a globalised job market (Ball, 2013). Lilja (2010) suggests that an economic and competitive perspective contributes to making education a priority for politicians and may potentially undermine the professional autonomy of teachers. Similarly, political and economic interest in DC – fuelled by results from international tests (cf. Haugsbakk, 2013) and marketing strategies of the ICT industry (Nivala, 2009; Player-Koro & Beach, 2013) – might undermine the professional role of teacher educators. The concept of competence may also stimulate quantification, since competence can be understood to denote a result, or a certain level of knowledge to complete a task, and not a process (Liedman, 2008). This may impede critical perspectives on the use of digital tools, such as search engines (cf. Sundin, 2015).

There is a tendency in the policy documents to take for granted the value of digital tools in pedagogical activities in pre-schools and schools. This echoes what Haugsbakk (2013) labels an instrumental perspective on technology predominant in both Swedish and Norwegian policy documents. Just as when previous ‘new’ technologies have been introduced in schools (see Cuban, 1986), technological determinism and technological optimism can trigger a technological push (Cuban, 2001). Historically, this has led to material impact in terms of large investments in digital tools, but also to less consideration for the needs of learners and teachers (Cuban, 2001). It may also prevent other, and possibly better, solutions to be examined and tested. Previous research has discussed DC in relation to teacher education in terms of ‘profession-based digital competence relevant to teaching’ (Lund et al, 2014, p. 282), elaborating on how technology can be united with learning theory and educational science. Investigating how DC is described in teacher education curricula, Instefjord and Munthe (2016) show that the use of technology is not highlighted. The
authors conclude that future teachers need to be taught how to use technology in their teaching to enable new learning strategies. However, these studies do not critically examine why it is important to use technology for teaching and learning.

When it comes to the attribution of responsibility, the representation of the problem places a great deal of responsibility on teacher education. Previous studies indicate that teachers are often portrayed as the main obstacles to the successful integration of digital tools into learning practices (e.g., Gouseti, 2013; Selwyn et al., 2001), and teacher education is also generally reported to fail in this respect (e.g., Enochsson & Rizza, 2009). Following these results, and results reported by the Digitalisation Commission (2014), it is tempting to attribute the responsibility to teacher education. At the same time, Swedish governments have historically been very eager to influence and reform the school system through reforming teacher education (Hallén, 2013). The limited success suggests that these efforts to change and improve teacher education might not be an easy or quick way forward. More importantly, by assigning responsibility to teacher education, the tools themselves, and their actual worth in learning environments, are not critically examined. In effect, we can see how the value of technology is taken for granted, and, at the same time, the discourse on teacher education as inadequate is reproduced.

CONCLUSIONS

When problem representations are clarified, we can shift our attention to their nature and consider how they are governing us (Bacchi, 2009). In the studied policy documents, the ‘problem’ that DC in teacher education is meant to solve is ultimately an issue of economic growth and global competition. DC is found to be part of a globalised policy discourse that conceptualises education as a necessity for a competitive work force (cf. Ball, 2013; Brown et al., 1997). Policy makers describe Swedish schools as unsuccessful in providing pupils with adequate (and quantifiable) DC. These shortcomings are considered to be caused by low DC being developed as part of teacher education.

These aspects of the problem representations – based on economic arguments at the expense of ideals concerning democracy, citizenship and Bildung – may alienate students and teachers, and have detrimental effects for the future development of teacher education, and consequently for schools and society. To avoid this, alternative perspectives such as MIL, research from the educational sciences and related fields, together with experiences from teacher educators and practising teachers, should be better considered by policy makers and in the public debate. The strong emphasis on economic benefits and an instrumental perspective on technology expressed in the global policy discourse on DC leads to the need for a renewed focus on Bildung and civic competences unless we, with a reference to Cuban (2001), want education to be the servant of the economy.

REFERENCES


