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Digital play as a means to develop children's literacy and power in the Swedish preschool

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ABSTRACT

This paper presents different angles on the subject of digital play as a means to develop children's literacy and power, using an online ethnographical study of Swedish preschool teachers' discussions in informal online forums. Question posts ($n = 239$) were analysed using the Technological Pedagogical Knowledge framework and the Caring, Nurturing and Teaching framework, with the aim of understanding how teachers intended to support children's literacy development with tablets. Literacy development can be understood as a social practice that needs to develop along with changes in society's demands on citizens. The results presented indicate that school subject oriented skills are predominantly present in the mind-set of these preschool teachers. When digital play is increasingly used for pedagogical purposes in preschools, that also means that preschools have expanded their opportunities to work with children's literacy development. For preschool teachers, it is important to discuss how literacy development can be supported in a contemporary media landscape.

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Background

In Sweden, many preschool teachers have the opportunity to let the children use tablets, if the preschool so chooses. A previous study of Swedish preschool teachers' use of online social network groups as informal professional development initiatives for discussing the educational use of tablets (Marklund, 2015) indicates that preschool teachers are developing their own understanding of how to approach digital play in preschools. In this article, 'learning' is incorporated into the concept of 'digital play', as play constitutes such an essential part of how teachers approach learning in Swedish preschools (Sheridan et al. 2011). Thus, 'literacy' is defined as a social practice that needs to develop along with changes in society. We thereby acknowledge the importance of letting children develop both traditional print literacy and the more multimodal aspects of literacy related to the concept 'digital literacy' (Gee 2012). Both these directions of literacy development are valid in the contemporary highly digitised Swedish society and in preparation for the increasingly, but not equally, digitised school context (Samuelsson 2014). The use of concepts like 'digital literacy' in educational discourse is a good example of how our understanding of literacy and literacy

development needs to develop along with changes in society's demands on literacy. The transformation of literacy development practices and the introduction of IT in educational contexts are not straightforward tasks (Lindahl and Folkesson 2012) and, as the questions in the studied online discussions also indicated insecurities of different kinds regarding digital play, this paper aims to present different angles on the subject of digital play as a means of developing children's literacy and power.

According to the OECD (2014a), Sweden has one of the world's most developed IT infrastructures and one of the highest levels of Internet penetration. Fifty-nine per cent of the population have tablets in their homes, and 87% of families with children have several computers, smartphones and tablets (Findahl and Davidsson 2015). The same report reveals that about two-thirds of two-year olds have used the Internet and that about one-third use it on a daily basis. Children who attend Swedish preschools are between the age of one and six years old, and the attendance rates are higher than the OECD average (OECD 2014b), even though preschool is non-mandatory. These higher attendance rates could be explained by the moderate costs. Furthermore, the increased emphasis on the pedagogical aspects of the preschool makes parents value preschool as an important learning environment for their children (Statistics Sweden 2014). The Swedish preschool curriculum was revised in 2010, resulting in an increased emphasis on learning (Skolverket 2010). Furthermore, the use of IT has also become increasingly common since the launch of tablet technology on the Swedish market around 2010.

In this background section, we draw upon Lafton (2012), who presents a need to look beyond the idea of socially constructed knowledge building when analysing digital practices in preschools. She identifies three aspects making up a possible analytic space: individual knowledge; discourse and materiality. These three aspects constitute elements that affect how preschool teachers build, shape and construct their digital practices. Lafton argues that the lack of available training for preschool teachers in the educational use of digital technologies contributes to making the individual knowledge of preschool teachers a prerequisite for getting involved in digital practices. Further, she highlights how this personal digital knowledge seems to be different from preschool teachers' knowledge about topics like children's upbringing, play and learning. This existing body of socially constructed knowledge within preschool practice, and the fact that digital knowledge is, to a large extent, personal, could, according to Lafton (2012), be one reason why digital practices are sometimes looked upon as additions to early childhood education instead of being a natural part of the practice. Lafton also recognises that preschool teachers interpret their social setting as a group, and that the context surrounding this group has both social and material dimensions. The three dimensions: discourse; materiality and individual knowledge, form the structure of the following background.

Discourse

Ljung-Djärf (2004) argues that in order to understand an always, but sometimes slowly, changing preschool practice, it is important to recognise that preschool teachers need to position themselves and their practice in relation to discursive patterns in society. The concept of media panics (Drotner 1999) may inform this understanding. A media panic is an emotional, rather than rational, reaction to the introduction of new media. These reactions have caused a number of obstacles which preschools will have to overcome before they can

fully involve digital play in their everyday activities. For instance, in 2011, the American Academy of Pediatrics recommended that parents should be informed about any screen media being used in children's education (Ernest et al. 2014). The risk discourse surrounding digital media has been in the foreground for at least two decades, so we may need a supplementary theory to explain the current risk perspectives. Kaspersen et al. (1988) formulated the framework of social amplification of risk, stating that risk assessment is processed via scientists, media, individuals and groups of individuals, among others. To exemplify, Lafton (2012) found that preschool teachers seemed to have an unspoken understanding among themselves that games constitute an arena exclusively for children, which in practice led to adult absence when children were playing digital games.

Lindahl and Folkesson (2012) argue that the norms present within the Swedish curriculum can be used as an argument to resist as well as to welcome the introduction of IT in preschools. The various ways in which this is interpreted largely depend on what norms individual preschool teachers consider as prioritised but also on their views of children. For example, the view of children as competent may make preschool teachers prefer educational affordances which allow children to show their competencies without too much adult intervention. When, on the other hand, teachers feel a need to supervise and instruct children about the technology, this can give rise to conflict. Thus, this tension between norms in curricula and norms held by preschool teachers can constitute an obstacle to transforming preschool practice. For example, Ljung-Djärf (2004) found that most arguments for the use of IT in preschools were related to the future well-being of the children. She claims that our way of talking about the future and future society works as a discursive pattern. Thus, strong visions about IT in our society are present in the mind-set of preschool teachers, who are in a position to enable these visions to become reality within the preschool.

Furthermore, we found that research on discourse in relation to power and control may be useful. Thus, Lindahl and Folkesson (2012) suggest that preschool teachers should become more flexible regarding the degree of control in learning activities, and they argue that preschool teachers need to develop strategies to create open-ended learning activities and enhance their ability to observe and respond to children's initiatives. Howard, Miles, and Rees-Davies (2012) also support these results. They found that open questions create good conditions for play and learning. Correspondingly, Lynch and Redpath (2014) claim that closed apps position learners as consumers while open apps position learners as producers of knowledge. They point out that the use of more open apps helps create learning situations that resemble the more fluent way that IT is being used outside the formal school context. Moreover, Sandvik, Smørdal, and Østerud (2012) emphasise the importance of exploratory conversations when IT is being used in educational situations.

Karila and Rantavuori (2014) studied preschool and primary school teachers collaborating to create new practices to make the transition from preschool to school smoother for the children. They found that the primary teachers had more influence on how these lessons were designed. The preschool teachers' knowledge was to some extent marginalised in this collaboration. Their knowledge about play for pedagogical purposes was often neglected or left out of the discussions, which illustrates how school education is dominant in relation to early childhood and care traditions.

Materiality

It is not always easy to distinguish materiality from discourse, as Lynch and Redpath (2014) point out. They address the fact that IT has a long history of being described as an enabler of innovation and change, a notion that also has been supported by governmental discourse for decades, and that the institutionalised roles, structures and processes of schooling seem to work against implementing technologies in the classroom. The cause for this, according to Lynch and Redpath, is mainly that the introduction of IT is changing the roles and relations adopted in institutionalised ways of teaching and learning. Sandvik, Smørdal, and Østerud (2012) argue that children's interactions with tablets in preschool can be looked upon as literacy events or situations that make demands on children's literacy. They further argue that traditional print literacy is no longer enough to understand articulation and meaning-making in our society. In their view, communication should be regarded as being multimodal, in the sense that it is not possible to separate written text, images, sounds and numbers in a society that is increasingly dependent on the ability to read screens. As a way of resolving the division between digital and analogue, Edwards (2014) introduces 'contemporary play' as an important topic of discussion in early years education. She describes how the context of children's lives can currently be understood as a digital–consumerist context. In this new context, children are identified as a part of the consumer market and this seems to influence the conditions for child play. Instead of play during which adult life is interpreted, their play is in a digital–consumerist context characterised by 'the possibilities enabled by the convergence between various products, digital media and digital technologies across a continuum of digital to non-digital experiences' (224). With this perspective, changes in society might be the cause of changed patterns in children's play. And what potentially could be understood by early childhood educators as a decline in the quality of children's play, due to children's increased involvement with digital technologies, might in fact be new ways of playing, aligned with contemporary society but misaligned with our current conceptions of play and learning. However, Edwards (2014) emphasises that it is currently not known how these changed patterns of play affect children's development.

A less discursive-centred theme in current research deals with what features of apps are most important in the support of young children's learning. Falloon (2013) studied five-year-old children's interaction and learning with tablets and found some important qualities. Apps should communicate learning objectives in ways that young children can access and understand; provide smooth or distraction-free pathways towards achieving goals; include accessible and understandable instructions and teaching elements; incorporate formative corrective feedback; combine an appropriate blend of game, practice and learning components; and provide interaction parameters that are matched to the learning characteristics of the target student group. Both free and purchased apps were found to lack one or several of these important components, and therefore it is suggested that more research with this focus should be pursued in order to provide app developers with better knowledge about how to design apps that can support the literacy development of young children. In fact, Merchant (2015) claims that the lack of well-designed educational apps and a perhaps too strong belief in the intuitiveness of the technology are concerns for future research and development. Furthermore, Palmér (2015) found that the same teachers interacted differently with children depending on what kinds of apps were used. Different apps were also found to influence child participation and dialogue differently.

Gee (2012) claims that success in the school context is highly dependent on talk in children's homes because oral language is the foundation of any literacy learning. If this foundation is present in the lives of young children, it is of less importance if the mentoring is done relative to a book, media or a video game. If it is not present, both books and digital media can potentially become passive, in the sense that consumption does not develop knowledge and skills important for the future.

Individual knowledge

Sheridan et al.'s (2011) study aimed to uncover preschool teachers' thoughts in relation to teacher competence and the curriculum. It reveals three dimensions of how preschool teachers view what teacher competence entails: competence in knowing what and why, competence in know-how and interactive, relational and transactional competence. They also found that the participating teachers had broad multidisciplinary knowledge that needed to be enhanced in some areas, for example, when supporting learning in mathematics, science and when using IT. Most of the preschool teachers seemed willing to support children in developing knowledge in a wide range of areas, but social and ethical development was often considered more important than focusing on learning language and mathematics.

Teachers' positions are a frequent theme in current research on IT and learning in general. In a preschool setting, Merchant (2015) observed how teachers assisting children working with a story-app changed their position. Instead of posing questions or challenging the child regarding the story, they became more of a support concerning the tablet and app functionality. In fact, Merchant claims that studying tablet use may have 'the potential to reveal how power relations and uneven distribution of capital are instantiated in everyday encounters' (11). The issue of power is further discussed by Karila and Rantavuori (2014) who argue that it is important to learn more about the processes involved when transition practices are developed. Gee (2012) argues that individuals can reach two different levels of expertise in both traditional literacy and digital literacy. Developing a level of 'academic' language in relation to traditional literacy, reading or writing or a 'specialist/technical' language in relation to digital media or digital technologies is emphasised as being important for the individual in order to be able to achieve success in the modern world using these literacies. Furthermore, the meaning of teacher competence is something that is continuously being reconstructed in relation to changes in society and shifting values in guidelines and curricula for the preschool, according to Sheridan et al. (2011). They bring attention to how a new curriculum for the preschool (Skolverket 2010) and a new preschool teacher education were quite recently introduced in Sweden, factors that could affect the meaning teachers ascribe to teacher competence.

Howard, Miles, and Rees-Davies (2012) found that adult mediation in relation to computer use in preschool had a tendency to affect children's play experiences positively. The preschool teachers in their study were able to manage their interaction with the children in ways that supported the learning process while also providing the children with an appropriate level of autonomy, choice and control when playing and learning with the computers. Aubrey and Dahl (2014) point out the importance of adult mediation when IT is being used to support learning in early childhood settings. They claim that adults can play a role in enhancing children's thinking. Their study revealed, however, that neither parents nor early childhood educators had considered this as a conscious approach to enhance children's knowledge

development in IT-related learning activities. Early childhood educators were also found to experience difficulties in determining an age-appropriate IT pedagogy. Bennett and Parise (2014) claim that our cultural practices have been computerised to a degree which will have future social consequences in our lives. They therefore argue that the results of technological advances should be integral parts of classroom activities. However, they also emphasise teachers' responsibility to make sure that the technology in question is introduced and used in a way which can develop the students' ability in critical reflection and make sure that what they learn will support them in their roles as citizens.

Sandvik, Smørddal, and Østerud (2012) argue that researchers and preschool teachers must work together to identify strategies for supporting learning with IT that will enable a balance between child-initiated and adult-led activities. They claim that the communicative role of the teacher and how the software is integrated in daily activities are relevant to the learning outcomes.

Purpose

The purpose of this study is to examine Swedish preschool teachers' online discussions regarding how they intend to use tablets and digital play in order to support children's literacy development.

Method

This study applied an online ethnographic method, inspired by netnography, a method that Kozinets (2010) claims can generate understanding of cultural phenomena. The aim was to provide insight into preschool teachers' intended literacy development practices using tablets and digital play.

Procedure

The Swedish equivalent of the word 'preschool' (förskola) was used to search within a commonly used online social network and a diversity of discussion groups about preschool-related subjects was found. Among these, two groups were strictly focused on discussing the educational use of tablets in preschool. Their similarities led to the decision to treat them as one set of data in this study.

Materials

The data consist of questions posed in two informal discussion groups for preschool teachers. At the time of data collection, the online discussions had been going on for a little less than two years and all posts initiating discussions were collected for further analysis. The posts collected for analysis ($n = 465$) consisted of questions ($n = 239$) and informative posts ($n = 226$). The present study focuses on a subset of the questions ($n = 151$) concerning either teaching-content related issues or pedagogical issues.

Participants

Together, these two discussion groups had 3386 participants (1320 + 2066) and the active participants had written 465 posts (240 + 225). The active participants who had initiated discussions with questions in these groups are to be considered as participants in this study. These participants should be considered as early adopters of technology and they are therefore not likely to be representative of the whole population of Swedish preschool teachers.

Ethical considerations

The study adheres to the ethical guidelines of the Swedish Scientific Council (Hemerén 2011), and the AoIR's guidelines on ethical issues (Markham and Buchanan 2012). The moderators of the discussion groups and the participants were informed about the nature of the study and the possibility to withdraw from it or have their posts excluded from the data-set. The moderators were contacted via direct messages and the participants via a message to each of the discussion groups, and no participants wanted their posts excluded. The information shared in these discussions was found to be non-sensitive and not potentially harmful to the participants.

Analysis

The participants' questions ($n = 239$) were first organised according to the Technological Pedagogical Content Knowledge framework (Koehler and Mishra 2009). This framework describes what kind of knowledge teachers need in order to teach efficiently with technology and the participants' questions were related to 'Technological Knowledge' ($n = 89$), 'Technological Content Knowledge' ($n = 76$) and 'Technological Pedagogical Knowledge' ($n = 75$). The questions that concerned content issues ($n = 76$) and pedagogical issues in relation to the technology ($n = 75$) revealed information about the preschool teachers' intended literacy development practices with tablets. Therefore, these questions ($n = 151$) were analysed using the following second framework.

Ljung-Djärf (2004) found that Swedish preschools have three different rationalities: caring, nurturing and teaching. Depending on how the preschool teachers drew upon these rationalities when using computers, the children ended up with different experiences of using computers in preschool. This second theoretical framework was used with the purpose of developing an understanding of:

- the intended ways to support children's literacy development with tablets,
- the rationalities preschool teachers draw upon when initiating discussions about tablets.

The framework of Ljung-Djärf (2004) provides information about what computer use would look like if preschool teachers drew on a caring, nurturing or teaching rationality in their work, respectively: what the content and aim of the learning activity would be, how the activity would be organised and what the learning environment would be like. In the present study, the questions did not provide information about how learning activities were organised, and the decision to assign a question to a specific rationality category of the framework was made according to the following aspects of Ljung-Djärf's (2004) rationalities:

- Caring rationality: The computer is considered as a leisure activity, where the main aims are having something to do and to practise taking turns. The computer is also considered a threat to other activities.
- Nurturing rationality: The computer is considered a nurturer, where the main aims are to stimulate responsibility, initiative and cooperation. The computer is also viewed as an available option among other activities.
- Teaching rationality: The computer is considered a tool for teaching and learning, where the main aims are to fulfil political visions and goals regarding equal conditions for learning. Computer use is also seen as an essential learning activity.

Each question was considered in relation to the described characteristics of the rationalities. The questions however rarely provided insight to all characteristics of the rationalities. Questions related to teaching content often provided information about the content and aim, the pedagogical intention to teach children certain content or skills using apps, which thereby led to the decision to assign them to the teaching rationality category. Pedagogically related questions were often placed into the framework based on the learning environment aspect of the rationality. For instance, most of these questions indicated that tablets were seen as an available pedagogical option among others, and therefore they were placed within the nurturing category. The remaining part of these pedagogical questions signalled that the preschool teachers had a critical or restrictive stance to perceived changes in their practice, and were therefore placed in the caring rationality category. Each of the rationality categories was thereafter analysed with a single step of thematic analysis (Clarke and Braun 2013) in order to find themes within these categories that could deepen our understanding of the intended literacy practices of tablets and digital play of Swedish preschool teachers.

Results

The following sections present how the preschool teachers' questions in the online discussions could be associated with a caring, nurturing or teaching rationality, drawing on the 'caring, nurturing, teaching' framework from Ljung-Djärf (2004). Each rationality contains themes that emerged in the data-set and the themes are exemplified with quotes.

Caring

A characteristic of caring rationality is to perceive contemporary media as a leisure activity and a threat to other activities (Ljung-Djärf 2004) and relatively few questions were placed within this category, probably because a majority of the preschool teachers in these discussions are in favour of introducing tablets in preschools and therefore do not consider tablets to be a threat to existing practices.

Convinced or reserved teachers and parents

The participants in these discussions have identified two groups of preschool teachers, those convinced about the benefits of using tablets in preschool and those who have reservations about introducing this technology in their practice, suggesting that some preschool teachers feel that aspects of their practice are threatened by the introduction of tablets.

Hi! I will lead a course about tablets at the preschool where I work. Any suggestions on how I can 'convert' colleagues who are a bit sceptical when it comes to using tablets in preschool? To make them understand what a fantastic tool this really is!

In a similar post, a preschool teacher would like to be advised on how to approach parents who think that their children's learning environment is threatened.

Hi! I work at a parent-led preschool and I would like to invest in a tablet. However, the parents are not convinced, so we need strong arguments.

The value of digital play

In some questions, traditional ways of supporting learning in preschool are being portrayed as threatened by the introduction of tablets.

What can children learn using tablets that they cannot learn in other ways?

Concerns are also raised that teachers will become more passive when using tablets.

My question to you is, how do you make sure that the tablet does not become a babysitter?

One preschool teacher responds to these discussions.

I also have a reflection ... many of you seem afraid that the tablet will become a babysitter. In what respects are building-blocks a better babysitter then? Aren't all the pedagogical materials we have in preschools there to complement each other, the children are surely interested in different materials ... so why are we then so afraid that the tablet will become a babysitter if we are not present?

The same preschool teacher continues:

I believe the problem is more related to our values and our way of perceiving technological development. If we are competent in our profession we will make our environment pedagogically diverse in a way which can support the development of our children!

Nurturing

A characteristic of nurturing rationality is to perceive the computer as an available option among others (Ljung-Djärf 2004) and a majority of the questions were placed within this category. The nurturing approach may be a consequence of these preschool teachers already being convinced about the educational value of tablets.

Apps as alternative pedagogy

These questions seem to be asked with the purpose of developing alternative pedagogical approaches, indicating that traditional learning activities might be presented to children in alternative ways.

I'm looking for apps in which one may play theatre.

Apps as an enabler of pedagogy

The preschool teachers are also developing a use of tablets that enables new pedagogical affordances, for example, tablets are being used to support pedagogical work with children who speak another mother tongue or children who have special needs.

Can anyone suggest apps in Spanish for children aged 3–4 years?

Insecurity among preschool teachers

Some preschool teachers seem insecure about how to approach tablets in their pedagogical work. This theme contains questions about overcoming this insecurity, along with questions aiming to reveal other colleagues' opinions and experiences of different apps.

I am curious how you work with digital media in your preschool. How do you work pedagogically with IT together with the children, and what kind of digital media do you use?

Teaching

A characteristic of teaching rationality is to perceive the computer as a tool for teaching and learning and, according to Ljung-Djårf (2004), computer use is looked upon as an essential learning activity where the main aims are to fulfil political visions and goals regarding equal conditions for learning. Relatively few questions were placed in this category, largely due to the nature of the discussions in the online discussion groups, discussions during which the posts did not always provide detailed information about the aims of the activity. However, the questions placed in this category had a clear teaching aim and were focused on different teaching contents, which indicate that preschool teachers are interested in approaching tablets in various ways.

Intended literacy development

Most of these questions concern ways of supporting language development and children's literacy in the Swedish language, but also offer children a possibility to stay in contact with their mother tongue.

I'm looking for good apps that can help develop the children's Swedish, both when it comes to articulation and understanding.

I wonder if anyone may suggest any good apps in Arabic that we can use to stimulate mother tongue learning?

Some questions indicate a strong focus on the school readiness aspect of intended learning activities.

I wonder if anyone may suggest good applications in mathematics, preferable geometry apps for ages 3–5 years.

Furthermore, we found questions regarding the use of tablets in outdoor education, music and drama as well as how to use tablets to develop children's collaborative skills and knowledge about feelings and empathy. In this respect, these preschool teachers seem open to a broad use of tablets, with varied learning objectives and diverse content.

Discussion

The purpose of this study was to examine Swedish preschool teachers' online discussions regarding how they intend to use tablets and digital play in order to support children's literacy development. The preschool teachers who participate in these discussions can be described as early adopters of educational technology. Jahnke and Kumar (2014) argue that it is important to research the initial understanding of teachers who are introducing tablets, as this may result in increased understanding among teachers who are hesitant about introducing tablets in their work.

Research on digital play in preschools may be said to have entered a second iteration of studies due to the introduction of tablet technology. In Sweden, digital play has previously been researched mainly in a computer context (Lindstrand 2015). The present study used these previous results to investigate whether tablets and computers are approached in different ways. Therefore, we used the caring, nurturing and teaching framework of Ljung-Djårf (2004) to examine how these rationalities were represented among the preschool teachers participating in online discussions about the educational use of tablets. Questions posed in these forums provided information about what learning activities the preschool teachers had planned to carry out with tablets. It thereby also became interesting to investigate what interpretations of literacy development were present in the mind-set of these preschool teachers.

The preschool teachers in our study discuss tablets and digital play with an emphasis on learning, and the discussions primarily concern language development or school-subject oriented knowledge and skills. The new Swedish preschool curriculum strongly emphasises learning in preparation for school. Thus, preschool teachers need to develop new ways of thinking about their practice (Jönsson, Sandell, and Tallberg-Broman 2012). In similar ways, the use of tablets could challenge preschool teachers to renegotiate certain aspects of their professional identity (Gee 2000; Marklund 2015). Traces of these parallel developments can be identified in the studied online discussions. At times, it seems as though questions might be related both to the new and stronger emphasis on the teaching role and to the insecurity associated with the introduction of tablets. Furthermore, the results of the present study indicate that there is a form of efficiency discourse among these teachers. They seem to use the support of colleagues to develop learning activities that fit the curriculum. They also use the discussions as a way to develop ways of working with tablets so that both preschool teachers and children will get the most out of this technology. Perhaps this is one reason why free play with tablets is rarely mentioned in the discussions.

In the discussions, it is also possible to identify insecurities regarding the teacher's role when tablets are used, and these questions often concern the degree of teacher presence needed when children use tablets. Some questions reveal that not all teachers know whether tablets should be treated like traditional materials that usually allow children more uncontrolled conditions to explore, play and learn. Studies confirm that these kinds of discussion are important, as preschool teachers' presence and ability to mediate the meaning-making process are important to the outcome of literacy events offered with the use of tablets (Aubrey and Dahl, 2014). From the online discussions, it is not possible to conclude how these preschool teachers arrange their pedagogical work with the tablets or how they interact with the children. However, other studies have shown a lack of awareness of the role of mediation among preschool teachers (Aubrey and Dahl, 2014; Lafton 2012). Nevertheless, the online discussions do indicate that many teachers are somewhat insecure about the affordances that tablets might bring. It is possible that this insecurity also concerns their ability to mediate and support meaning-making, as IT is known to change the adopted roles and relations within educational contexts (Lynch and Redpath 2014). In the discussions, there are only a few questions that directly address the mediator role. There are, however, quite a large number of questions where the preschool teachers seem to place a lot of trust in the inherent ability of educational apps to support children's literacy development. Perhaps this indicates a lack of awareness of their important role as mediators of meaning-making in tablet-supported learning activities. Howard, Miles, and Rees-Davies

(2012), Aubrey and Dahl (2014) and Bennett and Parise (2014), among others, stress that a mediator should use open instead of closed questions to help develop children's thinking. Some preschool teachers are concerned that IT might demand too much adult interference within a practice that in other respects wants to present an environment that children can manage by themselves (Lindahl and Folkesson 2012; Petersen 2015). However, Howard, Miles, and Rees-Davies's (2012) study indicates that children appreciate adult intervention in their digital play. Thus, preschool teachers may help improve literacy development among children who engage in digital play, if they decide to engage in dialogues with these children, instead of treating games as the children's own arena for actions (Gee 2012; Lafton 2012). Gee (2012) argues that interaction and mentoring in early life are the most influential factors for later success in literacy and content learning. Within the preschool environment, the teachers can take on a mediating role that can help overcome the reported shortcomings of current educational apps (Falloon 2013; Merchant 2015) and develop pedagogies that may enrich children's literacy development. Lindahl and Folkesson (2012) point towards the existence of such pedagogies regarding IT when they argue that preschool teachers need to develop strategies to create open-ended learning activities and to enhance their ability to observe and respond to children's initiatives.

The questions in the discussions reveal that the preschool teachers need feedback from colleagues regarding apps and what kind of apps might be suitable. This is confirmed by, among others, Aubrey and Dahl (2014) and Palmér (2015). Lantz-Andersson (2009) argues that technologies must be contextualised into the practice at hand and not the other way around. Even though many features of tablets seem well adjusted to preschools, tablets as such have not been developed with this educational practice in mind (Lantz-Andersson 2009). Sandvik, Smørdal, and Østerud (2012) claim that traditional print literacy is insufficient to understand articulation and meaning-making today. Therefore, they emphasise that children's interactions with tablets can be looked upon as vital literacy events. However, Marklund (2015) shows that preschool teachers often need to overcome barriers related to technology or materials when planning their learning activities.

Some questions express a need to discuss the value of digital play in preschools and how children can benefit from digital play. Samuelsson (2014) emphasises that Swedish children have different opportunities to develop digital literacies at home, which may be an argument for introducing tablets in preschool. The study also emphasises the fact that children in Swedish schools get different opportunities to get their digital literacies assessed in school. The latest statistics confirm that the use of the Internet to support children's learning in school varies a lot in Sweden, where some children use the Internet on a daily basis and some never use it for school work (Findahl and Davidsson 2015). Consequently, children face the risk that school will not see all aspects of their literacy as equally important, which in turn means that children might become differently empowered in the school context depending on which aspects of literacy they have developed during their early years. Janks (2010) argues that there will always be a dominant form of literacy within each secondary discourse that individuals enter, for example, when children progress from preschool to primary school. Awareness of how children's development of literacy correlates with the literacy demands of the next discourse that they will enter therefore seems important for preschool teachers to consider in relation to their use of tablets and digital play in preschools. The ways children's literacy development is supported will also influence children's opportunities to be successful, or powerful, when they enter the primary school context. Awareness

about dominant forms of literacy is also, according to Janks (2010), a prerequisite for rethinking the literacy practices within a certain discourse or context, for example, how literacy development is supported and viewed in preschool. The present study indicates that tablets are, to a great extent, considered as one available pedagogical option among others or as a tool for teaching and learning. Support for language development and school-related knowledge seems to be present in the mind-set of these preschool teachers. If these findings are in fact representative of the literacy practices with tablets in Swedish preschools, tablets could arguably play a vital role in any effort to maintain the balance between education and care in Swedish preschools (Jönsson, Sandell, and Tallberg-Broman 2012). The ways that school education can be understood as dominant in relation to early childhood and care traditions (Karila and Rantavuori 2014) further contribute to the importance for preschool teachers of reflecting on the tendencies towards more school-oriented learning activities. In fact, this might partly be an outcome of this imbalanced power relation between school and preschool.

The results of this study show that there are two groups of preschool teachers in Sweden, those who are convinced about the affordances of tablets in preschools and those who remain reserved about the introduction of tablets in preschool. Lafton (2012) provides insight into how discourse is likely to affect the way preschool teachers approach tablets and digital play. Regarding discourse, we know how our beliefs about the future and ways of talking about it also work as a discursive pattern contributing to realising these beliefs (Ljung-Djärf 2004). Political and societal discourse about IT may find its way to the written curriculum, which ultimately preschool teachers will have the power to realise within their practice. The messages preschool teachers receive from the discourse about IT can be very different depending on what voices they decide to listen to. The amount of time children should be allowed to spend in front of screens is often at the forefront of discussions about children and media (Smahel et al. 2012). In the analysed questions, preschool teachers seek advice regarding how to position themselves relative to the variability of the information about tablets, information that may be associated with media panics (Drotner 1999). On the other hand, discourse can also work as a progressive force in relation to the use of IT in educational settings, for example when Skantz Åberg, Lantz-Andersson, and Pramling (2015) suggest a wider definition of what has historically been incorporated in the concept of text. Also, Sandvik, Smørudal, and Østerud (2012) argue that communication should be seen as multi-modal. We would not like to take a stand against these claims; however, we would like to stress that even though the theoretical understanding of literacy and literacy development has expanded considerably due to the increased use of digital technologies, the power-related aspects of literacy development and literacy assessment in Swedish schools have not changed to the same degree (Samuelsson 2014). Preschool teachers therefore need to have a reflective stance regarding political, societal and media discourses in order to be able to develop ways of introducing tablets in the literacy development practices of preschools.

By applying the caring, nurturing and teaching analytic framework to the online discussion questions in our study, we found that preschool teachers draw on these rationalities in different ways in their approach to tablets, and in this respect, the results confirm the results of Ljung-Djärf (2004). The online discussions about tablets, however, indicate a concentration towards drawing on the nurturing and teaching rationalities, which might indicate an ongoing change regarding the pedagogical use of tablets in comparison to the more free-play oriented way that has previously been the approach to computers in Swedish preschools.

The preschool teachers in these online discussions, who are already convinced about the value of tablets in preschool, seem to be open to a broad application of the tablets within their practice. From the discussions, we understand that tablets are used for different types of educational contents and with different educational purposes. The results also show that these preschool teachers use tablets and digital play in order to create new learning opportunities, for example when it comes to the support of children who speak another mother tongue or to support children with special needs. However, even this group of early adopters of technology express concerns and insecurities. There seems to be a need for an increased understanding of both the experienced affordances and constraints of tablets as a means to support children's literacy development in Swedish preschools.

Concluding remarks

An important conclusion is that the pedagogically influential rationalities found by Ljung-Djärf (2004), caring, nurturing and teaching, are still found in the mind-set of Swedish preschool teachers when tablets are being introduced in their practice. Another conclusion is that the participants view tablets either as an available pedagogical option or as a tool for teaching and learning.

Being early adopters of educational technology, this group cannot serve as representatives of preschool teachers in Sweden. We argue that it is important for hesitant preschool teachers to consider the contemporary context of children's play and learning (Edwards 2014) and how digital technologies are an integral part of contemporary life (Findahl and Davidsson 2015). Also, we may continue to discuss whether and how tablets and digital play can be used appropriately in the contexts of preschools, with the purpose of enhancing the literacy and power of each individual child. We believe that a literacy and power perspective, where the literacy affordances of the contemporary media landscape are emphasised, can work as a fruitful middle ground between hesitant and progressive preschool teachers when digital play is being discussed in preschools.

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