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Domesticated Smartphones in Early Childhood Education and Care settings. Blurring the lines between pedagogical and administrative use

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ABSTRACT

In Norway's 'Framework Plan for kindergartens' digital tools are to be implemented for learning, play and creativity. Implicitly the concept of digital tools, or ICTs, tend to be tablets, computers, and interactive whiteboards, smartphones are as such not taken into account. However, we find that the smartphone is particularly interesting because it differs from the other types of ICTs used in Early childhood education and care (ECEC) institutions. Tablets, computers and interactive whiteboards, are all implemented as distinctly pedagogical tools, potentially fulfilling the framework plan, while smartphones have been implemented primarily as administrative and documentational tools. Yet, in this case study on the use of ICTs in a Norwegian ECEC we found that such administrative use of smartphones was blended with undercurrents of 'filler use' for pedagogical purposes. In this article we build on the literature on ICT's in ECEC by exploring the outcome such filler use of smartphones may have. To do this we draw on the domestication theory to describe the practice, symbolic and meaning dimensions in the enactment of smartphones in an ECEC setting.

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Introduction

In Norway, the understanding of children as competent beings as opposed to incompetent becoming adults, has become a fundamental part of policies and practises within early childhood education and care (ECEC) institutions (Franck and Nilsen 2015; Kjørholt 2005). Additionally, the implementation of information and communication technologies (ICT's) in ECEC is believed to enable children to develop an ability to critically evaluate information and sources for information from a very early age (Ministry of Local Government and Modernisation 2016). As a result, the *Framework Plan for Kindergartens* (2017) emphasises the need to include digital tools in learning, play and creativity. In this study, we explore how smartphones become enacted in an ECEC setting

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within an assemblage comprised of a group of children, a professional adult, and a smartphone. We also explore how the notion of children as competent or incompetent are enacted in the assemblage.

Digital tools and smartphones in ECECs

Previous research on digital tools in ECEC facilities focuses on different aspects of ICTs. Some explore ICTs such as tablets, computers and interactive whiteboards, and how they are implemented for pedagogical purposes (Henward 2018), asserting that ICTs shape learning, meaning making, and play (Lafton 2015). Another strand focuses on ECEC professionals, exploring how they understand processes of technology implementation (Blackwell, Lauricella, and Wartella 2014; Nikolopoulou and Gialamas 2015; Palaiologou 2016; Thorpe et al. 2015). However, research that focuses specifically on smartphones in ECEC is scarce. In Zomer and Kay's (2018) review of research on digital tools in ECECs they found none that focused on the use of smartphones. While there is a gap in the literature, there is research on smartphones in ECEC. This research tends to focus on the smartphone as an administrative tool, rather than a pedagogical tool. For example, how smartphones are used to register the presence or absence of children, communicate with primary caregivers, and document such things as the length and frequency of naps time, children's learning and progress (Lim 2017). In addition, focus has been on how smartphones are implemented to search for information, take pictures and to share information online (Aldhafeeri, Palaiologou, and Folorunsho 2016). As an administrative tool, the smartphone has also proved to facilitate making learning visible, by assessing and communicating learning from adults in the ECEC to parents (Parnell and Bartlett 2012). This literature illustrates that the smartphone is a useful tool in enhancing children-parents-pedagogue relationships through sharing documentation of children's everyday lives and learning in institutions. Yet, this strand of research is also characterised by the assumption that it is possible to make an a priori distinction between administrative and pedagogical ICTs, and little is known about the potentially pedagogical roles that administrative ICTs may play. This article contributes to the literature and explores the pedagogical roles that smartphones played in an ECEC, by deliberately blurring the lines between 'administrative ICTs' and 'pedagogical ICTs'.

Blurring the lines between pedagogical and administrative ICTs

Spending time in an ECEC institution in Norway that had a strong ICT profile we found it important to explore educator's spontaneous pedagogical use of administrative smartphones. In this ECEC institution, the smartphone had been implemented as an administrative tool. However, in everyday practices of use, it was enacted as a pedagogical tool, meaning that it had become an unquestioned and taken for granted part of everyday life in ECEC and was not limited to being an administrative tool. Moreover, the Framework plan refers to all digital tools and does not distinguish between specific technologies such as smartphones, tablets, or interactive whiteboards. Thus, we cannot rely on an a priori distinction between administrative and pedagogical ICTs in the ECEC but rather need to

explore the enactment of the smartphone in relation to the adults and children in the ECEC setting. Drawing on this insight we explore how smartphones are enacted as pedagogical tools in ECEC, and the consequences of this enactment for the construction of the 'competent child'.

Moving beyond the binary couple of the competent or incompetent child

In educational, psychological and sociological research focusing on children, there has, since the 1990s, been a shift in how children have been viewed, from 'the developing child' to the discourse of 'the competent child' (Brembeck, Johansson, and Kampmann 2004). This discourse emphasises 'children's agency, rights, and value in the present' (Franck and Nilsen 2015, 231). One of the pillars within childhood studies has been a focus on the 'being child' as opposed to the 'becoming child' (Qvortrup 1994), where the being child can be understood as the competent child and as a social actor actively constructing their own childhood, and the becoming child as lacking in competencies and as an unfinished and becoming adult. However, Uprichard suggests that it is not a binary term as both adults and children 'can be competent and incompetent depending on what they are faced with' (2008, 305) and therefore, a need to nuance the discussion. In addition, there has been a call to decentre the subject of 'the child' (Spyrou 2017) to give way to a more relational approach to explore the lived lives of children. One suggestion has been to turn to sociomaterial perspectives in order to open up possibilities to look beyond the presumed competency of the child and rather explore how actors, humans and non-humans, are co-produced in the meeting between them (Burnett et al. 2019; Prout 2011; Ryan 2012). Similarly, Sørenssen, Aarsand, and Hoveid (2019) argue that the binary of either a competent or incompetent child is reductionist, and points to the usefulness of taking a sociomaterial perspective to move beyond this binary as it highlights how competency is not something an actor has or does not have, but rather that competency is the result of interactions with social and material actors. A sociomaterial approach deliberately encompasses materialities like technology and what they become in the context of their relationships with their social surroundings and the practices they become part of (Jarzabkowski and Pinch 2013; Orlikowski and Scott 2008; Sørensen 2006). In this manner, a sociomaterial perspective enables an analytical movement beyond the socially constructed world to also encompass how humans and non-humans constitute each other (Spyrou 2019; Sørenssen and Franck 2021). With this perspective, it thus becomes possible to explore how technology participates in the construction of the competent or incompetent child.

Domestication, scripts and enactment

As stated, we set out to blur the lines between administrative and pedagogical ICT's by engaging with a sociomaterial perspective. To this end we draw on domestication theory (Haddon 2007). Domestication theory is a framework for exploring ICTs in people's everyday lives, and seeks to make sense of people's perspectives on, and actions in relation to ICTs, and to analyse and describe the ways in which use may shape technology and vice versa (Haddon 2017). Originally domestication theory was developed within media studies (Silverstone and Haddon 1996) with another strand in science and

technology studies (STS). Here we draw on the version of domestication that has evolved primarily within STS (Haddon 2006; Sørensen 2006). As a concept, domestication refers to how technologies, like pets, must be socialised when they enter new settings. From this perspective, the role of a technology, such as the smartphone, is not given beforehand but is always the result of the meanings that are attributed to the technology and its use in everyday user practices (Sørensen 2006). Even in cases when the technology is implemented for specific organisational purposes (Bergschöld 2016, 2018b).

Domestication studies in STS focus on three dimensions of everyday technology use. Specifically, the ways in which technology becomes integrated with practices, meanings and learning. The practice dimension revolves around the ways in which technology becomes, or does not become, part of practices through use. The meaning dimension focuses on the ways that meanings become or do not become attributed to the technology and its use. And the learning dimension concerns the ways that users learn about using the technology (Sørensen 2006). In the forthcoming analysis we use these three dimensions of meaning, practice and learning and how they can be understood when exploring the use of the smartphone in an ECEC setting. The practical dimension is about routines: for what purposes is the smartphone used and who is using it? The symbolic dimension is about the meanings: why is the smartphone being used? What does it mean to use the smartphone in this way and in these situations? The cognitive dimension is about learning. Knowledge and skills are needed to use the smartphone; however, the smartphone is also part of learning activities, learning about the smartphone. How does knowing shape use, and how do ways of using shape learning? There is thus symbolic work embedded in this, as people create symbolic meanings of artefacts. There is practical work, where users develop patterns of usage and integrate the artefacts into daily practices. And there is the cognitive work, where users learn about the artefacts and how they are put to use (Sørensen, Aune, and Hatling 2000). How does the domestication of smartphones with these dimensions shape how children are enacted in relation to smartphones in an ECEC setting?

To explore how smartphones are domesticated, we employ the concept of enactment. Enactment suggests that technologies are 'brought into being, they are *realized* in the course of a certain practical activity' (Woolgar and Lezaun 2013, 323). As such, the notion of enactment builds on the relational understanding that objects are not merely carriers of meaning but performed in relation with other actors (Law 2004). When considering how smartphones are enacted, there is a need to focus on the relationality for as Law and Mol state: 'an actor does not act alone. It acts in relation to other actors, linked up with them' (2008, 58). This implies that the role of technology is not determined by the design of the artefact, or the political ideals that become attached to them, but emerges in practices of use as the result of users' sense making of how the device can and should be used in the situated context (Berker 2011; Haddon 2006). In our case, this entails looking at how the smartphone is realized through the practices of children and adults in an ECEC setting.

Although we understand the use of the smartphone shapes the enactment of the smartphone, the smartphone is not a blank slate, nor a neutral tool. Akrich (1992) introduced the concept of script in the field of STS to examine how technological objects, their designers, and its users are defined by, and define each other. Or as Akrich puts it: 'technical objects and people are brought into being in a process of reciprocal definition in

which objects are defined by subjects and subjects by objects' (1992, 222). Technologies are scripted, they are intended to be used in a specific manner, however, there is a difference in how sturdy these scripts are, as Aune suggests; 'A strong script suggests a certain kind of use, a weaker script suggests a larger degree of flexibility' (2002, 390). In the meeting between adults, children and the smartphone in an ECEC setting, how strong are the scripts and how does the script of the smartphone and the search engine take part in defining the users?

As a consequence of the analytical framework we employ here the analysis moves between two framings of the smartphone where on the one side the technology is understood as something that was implemented for a purpose, but simultaneously acknowledged as something that changes after implementation through processes of domestication where it is enacted through practices and understandings. The difference between the intention behind implementation and what the technology eventually becomes may be minor, but it may also be so great that the technology fills another role entirely (Bergschöld 2018a). Importantly then, domestication alerts us to the fact that technology is never entirely 'done', and so it follows that the point of our endeavour here is not to explain what smartphones in Norwegian ECECs have become once and for all, but to provide a fine-grained description of the conditions that enables the enactment of the smartphone and what this can come to mean as the practice takes part in constructing children in relation to the smartphone. As the smartphone is put to use in different contexts and for different purposes, our aim is to examine, to quote Law and Lien; 'how objects come to *be* in a relational multiple, fluid, and more or less unordered and indeterminate (set of) specific and provisional practices' (2013, 365). The domestication process takes place in sociomaterial assemblages that are composed of heterogeneous elements, in this case, the script, the material smartphone, and the adults and children. These actors together produce the enactment of the smartphone.

Methodological and analytical approach

The empirical material presented here is construed from a variety of observations and video clippings made through ethnographic fieldwork conducted in 2017. In total, we have approximately 70 h of video recorded material. Altogether 35 children, ages 4–6 years, and ten adults working in the kindergartens have taken part in these recordings. The ethnographical site studied here was a municipal ECEC that has a strong ICT profile. They have tablets and interactive whiteboards available for the staff to use with the children. Most of the material was videotaped in the style of video ethnography (Aarsand and Forsberg 2010). In addition, the video recordings are supplemented by field notes made during field work, as well as collaborative field notes made as the researchers studied the videotaped interactions. Informed written consent was given by the parents, and the staff. Doing research with young children requires ethical sensitivity and the children were continuously informed during fieldwork about the research projects and their rights to decide whether they wanted to participate or not. All participants are given a pseudonym. The storing of digitised data has been approved by NSD, The Norwegian Centre for Research Data.

In the ECEC institution studied here, the smartphone was a digital resource that was constantly present. The smartphone was not privately owned but belonged to the ECEC

and was present in quite a different way than other ICTs implemented for pedagogical purposes. ICTs such as tablets and interactive whiteboards were only used during specific time slots scheduled beforehand and were not visible when they were not in use. The interactive whiteboard was kept in a designated room, and the tablets were stored in a locked cabinet. By contrast, the smartphone, implemented for administrative purposes, such as communicating with parents and taking attendance, was always present. It was held or carried around by the adults. In their hands or pocket, or at the very least – laying on a table or counter in proximity where it could easily be reached and heard. In this case, the smartphone distinguished itself from other ICTs through its omnipresence. While other ICTs were only part of specific and isolated practices, the smartphone was consistently present, and treated as a taken for granted partaker in all goings on.

Because it was always present, the smartphone was also used for a great variety of informal purposes, in addition to the formal purposes for which they were meant to be used. For instance, in addition to being used to communicate with parents and document attendance, it was also used for entertaining purposes, such as listening to music and audiobooks as well as taking pictures, and quickly checking facts, or searching for information during discussions with the children. Thus, the formal use of the smartphone was blended with undercurrents of informal filler use in spontaneous pedagogical practices. In the following we present two excerpts from our video ethnographic material which serve as context-bound typicalities (Halkier 2011) of how the smartphone was enacted in our data and analyse them using the three dimensions of domestication to consider the enactment of the smartphone and the potential pedagogical implications of this filler use.

Domesticating the smartphone

Our first excerpt begins on an early morning in a Norwegian kindergarten. Inside, a small group of children aged 3–6 years old have just finished having their breakfast. Charlotte, the childcare worker, was cleaning after breakfast, gathering plates and glasses from the table and putting them on a trolley to take back to the kitchen. While the children were waiting for her to finish, they were sitting playing with plastic building blocks.

One of the children, Frode, has finished building a figure and calls out: *Charlotte! Look at the golden hulk I built!* Charlotte stops cleaning and walks over to look at the figure. Other children have also finished their figures and show Charlotte the different types of Hulk they have built. Morten shows Charlotte that he has built a green Hulk and Bent proudly exclaims that he has built a hulk that is pink. Charlotte frowns slightly as the mention of a Hulk that is pink. She asks tentatively: *A pink hulk? isn't there just a red and a green hulk?* Several children shake their heads – *No*. Still looking bewildered, Charlotte asks again *'But there aren't any other colours than red and green right?'* Frode, looking at Charlotte speaks up *'no, there are many colours of hulks, there is a gold hulk, an orange hulk, a grey hulk ...'* Charlotte smilingly shakes her head, *'No, I really don't think there is'*. Frode protests. Rising to his feet, he clenches his fists at his sides and almost yells *'yes there is, there is a pink hulk!'*. Bent too protests *'yes there is! There is the pink hulk and the orange hulk!'* Charlotte picks up the smartphone from her pocket. Charlotte opens the browser and enters the website google.no while talking to the children *'hmmm, I'm still not entirely sure that I believe you'*. Quickly she types *'Hulk'* and presses the *'images'* option so that the children will be able to see the results of her search for themselves. *'Ok, so when you google "Hulk" the only thing that turns up is the green Hulk here'*. All the children lean in to see the screen better. Frode takes the phone

and scrolls through the pictures on the screen, frowning as he sees picture after picture of green hulks but no pink ones. As he reaches the end of the first page of results, Charlotte takes the phone back to help him navigate to the next page of search results and says: *ok, let's see if we can find any pink hulks on any of the other pages ... here let me see.* As Charlotte is managing the phone, Bent tries to persuade her *'there really is a pink hulk'*. However, Charlotte remains focused on the screen, and repeats: *No I really don't think there is.* Bent insists again: *'yes there is, there really, really is'* Charlotte continues to scroll through the pages of search results pictures to see if any other colour varieties of the Hulk turn up. Charlotte says: *Yes, you were right that there is one that is grey, but there isn't a pink one* Bent protests loudly and immediately – *NO! I've seen it!, there is one that is pink! I've seen it on children's television!* Charlotte: *On what channel did you see it?* But Bent visibly upset, his clenched fists a testament to his frustration just shakes his head, he doesn't answer. Charlotte puts the phone back into her pocket and goes over to a table where she fetches a digital camera. Picking it up, she holds it up for the children to see she starts talking about what it is and what they are going to be using it for later that day.

The practice dimension

Focusing first on the practice dimension, we see here that it is the adult who is the main user of the smartphone, she is the one who initiates the use. The purpose for the use here was to find out if there were pink Hulks and how many different colours a Hulk could be. Here the enactment of the smartphone effects how knowledge and practices are produced. The smartphone was enacted as an evidence of truth. Specifically, we see how it influenced how facts or 'truths' were constructed as being inherent in the smartphone; it just needed to be found. There was no nuance to this discussion, it became an either-or situation; there either is, or is not a pink Hulk. In the enactment of the smartphone in this example, instead of opening up for the potential multiplicities of the Hulk, this practice limited the possibilities. The logic here becomes; there are no pink Hulks on the screen therefore the pink Hulk does not exist. Yet, if one were to google 'pink Hulk' there are a plethora of images that depict a pink Hulk. The smartphone is not a neutral bystander or a simple teller of truths; depending on what you put in the search engine, the outcome does something different in the sociomaterial assemblages. The idea of the pink Hulk ceases to exist as a possibility and what is produced, is instead a dichotomy of what is perceived as true and what is perceived as false. This practice limits the possible outcomes, and the smartphone was here enacted as a restrictor, as an object which aided adults in finding facts. Although Bent was adamant in proclaiming that there was indeed a pink Hulk, his voice was deemed as lesser than the voice of the smartphone, or rather the Google search engine, in effect rendering the child as not competent in relation to the knowledge stored in the search engine.

The symbolic dimension

If we now turn to the symbolic dimension, focusing on why the smartphone was used, we can here see that Charlotte used it to establish 'facts' about the Hulk. Specifically, his colour. The smartphone as such becomes a 'truthteller', a carrier of knowledge in the form of unquestionable facts. Charlotte used the smartphone to search for evidence to support her knowledge about there not being a pink Hulk. In all the other instances of use other than administrative work, we found there was one commonality, the smartphone was used as an aid in discussions. The meaning of the smartphone thus became

a repository of knowledge that the user can access. This was done either to support claims, such as Charlotte did in the excerpt, in effect limiting the possibilities on how one could imagine the Hulk, and in effect disputing children's competence in the matter, or it could be used to open up and aid in spontaneous pedagogical events. One such event took place around a table after lunch:

Five children are sitting and playing with Polydron, a type of building blocks that have magnets so that they can build them vertically as well as horizontally. George takes a blue block up to his face and exclaims; *I can see the Charlotte is blue!* Charlotte asks; *What!? Am I blue? Nah, I don't think so!* George answers with excitement in his voice *Yes, you really are! And now you're yellow!* He says, picking up a yellow block and looking through it at Charlotte. Charlotte does not seem to believe him and George hands her several Polydrone blocks, *Look for yourself!* Charlotte holds up a blue one to her eye, *But, what!?!* she says with bewilderment to Georges obvious pleasure as he grins widely, Charlotte continues; *You ARE blue! Hm, if you put a yellow and blue together technically, you're supposed to be green.* She picks up a blue and yellow one and hands them over to George *Try it* she says. George holds the two up to his eye, *Is it green?* Charlotte asks. George says yes. Peter and John who are present at the table, stop building and start looking through the Ploydrones and start commenting on what colour they see each other as. Charlotte picks up the smartphone from her back pocket, enters google and types 'colour combinations and presses 'images'. She then holds the smartphone to her chest, exposing the screen to those around the table *Look, here are the colours, yellow, red, blue, and with those colours we can combine them and make new colours.* The children look at the screen and start to combine different colour, the same as on the screen. Charlotte and the children discuss different colours possible to make with the colours they have available in the Polydrones while constantly checking the smartphone screen.

In this example we can see how the smartphone was still enacted as a knowledge-box, however the outcome here facilitates further play and experimenting with colours, rather than what the closed use in the Hulk example did. Even though, the smartphone was also here used to look up information, it was not enacted as a clear-cut teller of truth and facts. In this excerpt, the smartphone was rather enacted as a reference or lexicon to, not correct the children, but rather as an inspiration for merging colours together producing new colours. In other words, the smartphone was here enacted as a door opener for different possibilities. This is what we call the smartphone as facilitator. Here the smartphone opens for what we can perceive as spontaneous pedagogical practices. This type of enactment can also be seen to fulfil the Framework plan for kindergartens from 2017 where it is stated that 'Staff should be aware of the children's interests and passions and enable learning in different situations and activities' (2017, 22). In this section, one could argue that the children's voices were both heard, as well as affected how the adult made use of the smartphone. The children and the smartphone were mutually enacted as both contributing to constructing knowledge through children's inquiring's and facts found on Google through the smartphone. Thus, while the smartphone was also domesticated as a teller of truth in this example, children's competence was not enacted as contrasting with the smartphone as a teller of truth, as it was in the Hulk example.

The learning dimension

Although with two different implications, both excerpts illustrate how the smartphone became enacted as a holder of truth. Turning to the last dimension, the learning dimension, we ask what skills are needed to make use of the smartphone? As the domestication

process does not solely happen when the ICTs are purposely used, this article explores how smartphones are enacted and what they come to be and mean happens in the unintentional practices. Adults are argued as having powers of definition in relation to children both in terms of defining values and also how children view themselves (Bjerke 2011; Clark 2011, 2012, Qvortrup 1994). Thus, it could be argued that the way the smartphone is enacted in an ECEC setting plays a part in how children make meaning of the smartphone and knowledge of what the smartphone is and does.

When discussing the Hulk, the smartphone was enacted as limiting to the children's voices as there was a negotiation on how many different types of Hulks there were. Thus, echoing researchers within childhood studies as Prout (2011) and Spyrou (2018, 2017), we see the need for exploring children's everyday lives decentring 'the child' as the subject of inquiry, and turn to the relationality and assemblages of what surrounds 'the child'. What room of agency is made available to the children in this case? When the children attempted to argue with the adult holding the smartphone, voicing that they had indeed seen a pink Hulk on television, this was not taken at face value, as there were no pink Hulks on the screen of the smartphone. The smartphone in the Hulk example was used to challenge the children's perception of what 'the truth' was, what actually exists in the fictional universe of the Hulk. The adult's knowledge base set the premises for how the adult used the smartphone, and the google search engine. This practice reduced the possibilities of being heard as a child, as they had no 'evidence' of the existence of a pink Hulk. As a result, the smartphone became enacted as a truth-teller and the children were granted no room for agency in exercising their arguments.

As part of the learning dimension within the domestication framework we find the importance of the skills required to make use of the smartphone. When searching both for the Hulk and for colour combinations, it was the adult that typed in letters. This of course has to do with the script for both the smartphone and the search engine, literacy is needed. The children in the ECEC setting cannot read or write yet, therefore, as the adults make use of searching with writing and not talking, this enhances the adults' privileges as having power over the smartphone as it is the adults and not the children who have access to execute searches. Additionally, the children did not have free access to the smartphone, it was always in the hands of the adult. This begs the question of the children's room for agency in the searching situation. The implication of this configuration of user identities is that while educators may choose to involve children in the search process, for instance by encouraging them to produce the search terms to be used, such an inclusion requires a dedicated effort to circumvent the manner in which the materiality of the ECEC smartphone delimits the children's active participation. Charlotte did involve the children as she encouraged them to partake in the results of the search. However, they were not part of the process where the search results were produced. As such, the story of the pink Hulk illustrates how the embeddedness of ICT's into institutionalised contexts like ECECs configures the identities of the actors who are able to use them, as well as they manner in which they may and may not be used.

The truth-teller enactment and the digitally (in)competent child?

In our data we saw how the smartphone was an unquestioned 'natural' part of the everyday practices in the ECEC. As illustrated in the analysis, the enactment of the

smartphone as a truth-teller was not part of a formal pedagogical practice where the children were to learn digital literacy or engage in digital practices, yet through its omnipresence and the undercurrents of filler use we described in the analyses, it nevertheless ended up fulfilling important pedagogical roles in relation to young children's learning about the critical evaluation of information and sources of information. As Woolgar and Lezaun point out, the notion of enacting 'also emphasises the generative power of the practices involved in the constitution of reality' (2013, 324). In this case, the undercurrents of filler use that enacted the smartphone as a truth-teller also effectively contributed to the production of the smartphone as an entity that produced seemingly unproblematic facts, rather than as a source of information that must be critically evaluated.

As shown in the analysis, the knowledge requirements related to reading and writing embedded in the interface and search engine requires specific skills to access and search for the 'facts' that were then interpreted and conveyed to the children by the adults. Generally, children in ECEC institutions cannot yet read or write and thus cannot draw out the knowledge from the truth-teller, or knowledge box smartphone. A question thus becomes, how are children constructed as competent or not in the meeting with the adults and the smartphone? In our data, the children were not understood as competent in the use of the smartphone. Both the script, and who had direct access to the smartphone reproduced a binary couple of adults as skilled and children as not, adults as competent, children as incompetent. When considering the colour of different Hulks Bent, however adamantly he asserted his knowledge of pink Hulks, his competence was questioned.

The perspective that children are competent and should be seen as human beings as opposed to unfinished becomings is today a pivotal part of how children are depicted within the ECEC realm (Kjørholt 2005). The Norwegian framework plan states that children should be 'heard and encouraged to participate in all shared activities in the kindergarten' (Framework plan 2017, 10), and that 'The use of digital tools must support the children's learning processes and help implement the principles of the Framework' (Framework plan 2017, 44). As our case illustrates, even technologies that have been implemented primarily as administrative tools, may become important actors in shared ad hoc pedagogical interactions. Smartphones in the ECEC setting are not just administrative tools, but also pedagogical tools that are active in the production of the competent or incompetent child. As such, they are not neutral in the pedagogical setting and cannot be treated as such.

In this case, the smartphone was used in interactions where the veracity of statements is contested, was not primarily used as a tool for the critical evaluation of digital sources of information, but as a tool with which it is possible for children as well as teachers to distinguish the veracity of verbal statements in ongoing pedagogical interactions and evaluate them as either true or false. Mertala also points to how the use of technology in daily administrative tasks 'should be recognised as pedagogically valuable moments for teaching children about computers, code, and the Internet' (2019, 64). Together, these studies suggest that further research on the interrelationships between children's learning, supposedly administrative ICTs and the dynamics between home environments and ECECs could potentially strengthen one another and are needed in addition to future studies that focus the enactment of ICT's in

ECEC institutions. Additionally, recognising that administrative tools are also pedagogical is an important insight for both researchers and practitioners to draw on in further efforts to realise the goals in the framework plan.

Conclusion

We have considered how the smartphone was enacted in relation to the political ideal that the implementation of ICTs into Norwegian ECEC's will enable young children to learn how to critically evaluate information as is stated in the kindergarten framework plan in Norway. The analysis illustrated how the integrated taken for granted use of the smartphone as a truth-teller obscures this. Against this background we have argued that practitioners and researchers need to be aware of how everyday taken for granted uses of administrative technologies like the smartphone affects how children become enacted as either competent or incompetent. In this case, the smartphone is enacted as a benchmark of truth. However, it is likely that other studies of the potentially pedagogical roles of administrative ICTs in ECECs will find more varieties of the enacted smartphone.

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