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Kindergarteners building a library of their own: Using apps to make digital stories and work towards lifelong learning in information literacy

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Abstract

This study investigates how children can develop information literacy (IL) skills even before they learn how to read and write. In the project we used a combination of participatory observation and action research-inspired trialling of digital tools. Kindergarteners were given iPads and access to the app Book Creator to create their own digital stories. The electronic books were gathered and made available to the other children in the class, making a custom local digital library for the kindergarten. This article suggests a new way of considering IL as an emergent literacy, or even perhaps *emergent information literacy*.

Keywords

children; digital literacy; information literacy; kindergarten; lifelong learning; Norway

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1. Introduction

It is interesting to question what a library is. Is it the traditional library of a room filled with old books? Could it be access to electronic resources alone, or does it also have to involve the competence a trained librarian can offer? One might say that electronic access to resources and literature on a tablet could be a modern type of library. This assumes an understanding of a library as a limited collection of information chosen and developed for a certain group.

This article aims to investigate how a library can be created and information literacy (IL) skills developed by children still not able to read and write. The authors argue that *emergent information literacies* can be a form of emergent literacies and consequently use of technology can help children to develop IL skills even at a kindergarten age. Focusing on emergent literacies and the children's interest of books and texts, digital stories or books were created. These books were made available to the rest of the children in the kindergarten, constituting a local digital library. The question we ask is: How can kindergarten children develop IL skills through creating their own books and further, their own library?

The increased focus on IL skills is emphasised by the United Nations Educational, Scientific and Cultural Organization (UNESCO). Media and Information Literacy (MIL) is defined as important skills both to promote freedom of expression and access to information. UNESCO further defines MIL as 'a set of competencies that empowers citizens to access, retrieve, understand,

evaluate and use, to create as well as share information and media content in all formats, using various tools, in a critical, ethical and effective way, in order to participate and engage in personal, professional and societal activities' (UNESCO, 2013, p. 32). MIL often focuses on educating educators because 'teachers may understand the information required for student learning better than the librarian' (Flierl et al., 2017, p. 125). That is why one of the focus areas in this study was to educate the kindergarten teachers in the use of digital devices to help the children learn.

The Norwegian framework plan for kindergartens increasingly requires pre-school teachers to help children 'exercise sound digital judgement and help the children develop an early ethical understanding of digital media' (Norwegian Directorate for Education and Training, 2017, p. 44). Furthermore, the staff shall 'exercise sound digital judgement with regard to searching for information, be conscious of copyright issues, critically analyze sources and safeguard the children's privacy' (Norwegian Directorate for Education and Training, 2017, p. 44). Through our action research-inspired project in a Norwegian kindergarten, we seek in this article to deepen the understanding of how children learn and develop digital IL skills.

2. Background and research questions

People born after 1980 are considered to be part of the group *digital natives*. Pre-school children today are growing up as '"native speakers" of the digital language of computers, video games and the Internet' (Prensky, 2001, p. 1). Many have made the assumption that there is a correlation between familiarity of digital appliances and digital competencies. This has however been highly discussed and 'does not, for instance, mean that these young people have any sophisticated critical understanding of how those media work to convey information, to influence opinion, and so on.' (Guo et al., 2008, p. 237). It can be challenging to promote learning of digital competence through digital devices as this demands certain skills from the person teaching. Therefore, we also focus on the kindergarten teachers' digital knowledge and competencies, as well as their confidence in teaching digital literacy. Library anxiety was described by Mellon in 1986 as students not knowing where to start their process of searching for information. A comparison can be made to kindergarten teachers not trained in teaching digital competencies and their challenge of utilising digital devices when engaging children with learning. For this reason, an introduction to devices and apps must be made available to kindergarten staff along with professional development training in using and teaching these digital tools. The authors of this article have their backgrounds in librarianship and sociology and social science didactics. Consequently, this is an interdisciplinary study that aims to observe how children learn and develop IL skills even before being able to read and write.

The questions we attempt to answer through this study are: How can kindergarten children learn to acquire IL skills through the use of digital devices, and, more specifically, an app on an iPad? As they move through the creative process and develop their electronic books and library to share with their peers, what questions arise? As they collaborate and contribute to their own digital collection how are they developing a socio-cultural learning environment and how is the IL landscape emerging?

3. Theoretical framework

IL has been defined and redefined over the years since the term was introduced by Paul Zurkowski in 1974. This is a trait that makes this field of research interesting, but also challenging. 'A characteristic of IL research and practice is that it suffers from polysemy, resulting in the inability of researchers and practitioners to adequately describe the core

elements that create the practice' (Lloyd, 2017, p. 93). Many librarians describe IL as locating, evaluating and ethically using information in such a way that it creates knowledge and understanding. However, IL is seldom considered to be an isolated phenomenon to be studied by itself. IL is most commonly considered to be situated and connected to its circumstances and context.

Annemaree Lloyd also considers IL to be more than its use in a purely academic context, and has introduced the concept of *information literacy landscapes* that are constituted through social, epistemic/instrumental and physical, corporeal information modalities which reflect the stable and established knowledge domains of a social site (Lloyd, 2003, 2006, 2010, 2017). This would indicate that IL is considered differently in a kindergarten landscape than in a school or in a workplace. These landscapes are created in social interaction as they reflect the established knowledge domains of a social site (Lloyd, 2017, p. 94), making the IL landscape highly situated and dependent on the context in which it is developed and unfolded.

Additionally, Lloyd states: 'Information literacy is a practice that connects us with information and knowledge about other practices that shape our setting and context. It manifests explicitly in our engagement with texts, and implicitly when we engage with others' (2014, p. 99). For kindergarteners, their IL is developed mainly in interactions and conversations with others, not with texts. Both experiencing and learning with others develops their IL, and sharing their own experiences in a way that makes sense to their peers also helps them develop their IL skills. IL is developed not by individuals, but through interacting with others, shaping the information landscape and moving towards specific knowledge (Lloyd, 2012, p. 774; Lloyd, 2016, p. 310).

> Information landscapes are infused with information from a number of sources. People form strong attachments to the space in their particular landscape and its socio-material dimensions and develop an intersubjective understanding of that space, of the practices and processes that maintain it … (Lloyd, 2017, p. 94).

Emergent literacy is a term that describes the skills children acquire at a young age before they have learned to read and write words. This may involve an interest in books, browsing through them, looking at pictures and so on, or the ability to describe or tell something. Our study shows that children use such skills when creating their own stories/books, something that is also evident in other studies (Schmidt, 2017; Fantozzi et al., 2013).

As children now are considered to be digital natives, they are introduced to technology before they learn to read and write, and thusly have to relate to both technology and vast amounts of information. 'The concept of "digital natives" was first proposed by Prensky (2001) as a generation of people born in or after 1980. He described digital natives as people who lives [*sic*] their lives immersed in digital technologies and that they learn differently from previous generations of people' (Ng, 2012, p. 1065). Prensky (2001) further describes people born before the 1980s as digital immigrants. Prensky's typology is highly contested, and based on newer research, White and Le Cornu (2011) rather suggest the term *Visitors and Residents*, where visitors use the Web as:

> one of many tools they can use to achieve certain goals; it is categorised alongside the telephone, books, pen and paper and off–line software. It is not a 'place' to think or to develop ideas and to put it crudely, and at its most extreme, Visitors do their thinking off-line. So Visitors are users, not members, of the Web and place little value in belonging online. (White & Le Cornu, 2011, section IV.1)

On the other hand, they describe residents as people who:

> see the Web as a place, perhaps like a park or a building in which there are clusters of friends and colleagues whom they can approach and with whom they can share information about their life and work. A proportion of their lives is actually lived out online where the distinction between online and off-line is increasingly blurred. Residents are happy to go online simply to spend time with others and they are likely to consider that they 'belong' to a community which is located in the virtual. (White & Le Cornu, 2011, section IV.2)

In this project, we find these terms useful to describe the different cognisance of the kindergarten staff and the children when it comes to digital skills.

Most Norwegian children have access to computers or tablets at home, even if the time they spend on these devices varies from 5-19 hours per week (Jæger, 2019, p. 11). Regardless, there is not necessarily a higher level of digital skills in this group. A study from 2010 claims that there is 'no evidence to support previous claims suggesting that current generation of students adopt radically [*sic*] learning styles, exhibit new forms of literacies, use digital technologies in sophisticated ways, or have novel expectations from higher education. Our findings show that, regardless of age and subject discipline, students' attitudes to learning appear to be influenced by the teaching approaches used by lecturers' (Margaryan et al., 2011, p. 438).

In a Nordic context, a number of studies have been conducted of kindergartens' digital practices and the use of new technology (Letnes, 2016; Bølgan, 2008; Bølgan, 2012; Haug & Jamissen, 2015; Lafton, 2012; Sandvik et al., 2012). Among other things, Tecce DeCarlo et al. study how children can develop IL in a technology-rich environment and point out that 'even young children can understand: how knowledge is organised [and] how to find information, which are the building blocks of becoming information literate' (2018, p. 274). A Swedish study on how digital tablets are used in pre-school teaching shows that there is a need for both improving the staff's ITC competence as well 'as to raise children's own perspectives on tablet use' (Otterborn et al., 2018, p. 734).

Mertala (2016) has conducted a study describing which ideas pre-school children have when it comes to the use of digital media technology. Mertala (2016, p. 208) interestingly points out the shortage of child-centred research as contradictory to the contemporary view of childhood. This study bears a design similar to ours in that it allows children to choose which ideas they wish to focus on. The data for this study were collected from the children of five kindergarten-based pre-school groups from a city in Northern Finland, and supplementary data were collected from their teachers. The children made drawings and were invited afterwards to talk to the researchers about what they had created.

Studies on how young children express themselves through multimodal communication processes are also relevant here. Hopperstad (2010) studied the drawing processes of five and six-year-olds focusing on how meaning is conveyed in children's drawings and found a 'distinctive form of literacy among the five to six-year-olds: the ability to convey meaning through a range of visual resources and sometimes in combination with other modes.' (p. 449). Another study of young children's illustrations emphasises that through the drawing process the children are 'exploring a range of communicative possibilities' (Cox, 2005, p. 124).

Einarsdottir et al. (2009) describe a study in which children were interviewed while drawing. The article emphasizes the value of drawings 'as a method for listening to young children's perspectives on their lives in early childhood settings' (Einarsdottir et al., 2009, p. 218). The children were asked to share their experiences of pre-school and starting primary school. They state that the discourse of drawing as meaning-making recognises the importance of context in children's drawings. Context includes the availability of resources and materials as well as social and cultural elements. Their conclusion is that they have noted the importance of drawing as a process, rather than the drawing product (Einarsdottir et al., 2009, p. 229). The study is comparable to ours in that it observes children creating and sharing content but differs because we have a deeper focus on the finished product rather than the process alone.

While much research has been done on how children use and interact with technology, little research has been done on pre-school children's IL skills. One study has been conducted on children between the ages of 6 and 8 and their information practices (Lundh, 2008), but this is a study that focuses on skills connected to reading and writing with special attention to information-seeking activities.

Young children in kindergartens are not yet able to read and write, but they are still experiencing IL issues related to assessing information they see online and even have the possibility of publishing books, images or videos themselves. According to Neumann (2018), using tablets, like an iPad, may be easier for children to manage because the interface does not require the same level of fine motor skills. Neumann's article describes a study of kindergarten children using apps to develop their emergent literacy skills. The children were given iPads with three apps covering letter matching, letter tracing and drawing. The study concludes: 'The children in the present study enjoyed using tablets and literacy apps to interact with letters and words in engaging and multisensory ways. The tablets provided children with a platform to take ownership of their learning and explore print using a stimulating and engaging touch-based digital tool' (Neumann, 2018, p. 245).

The theory of IL, emergent literacies and digital competencies put together provides a theoretical starting point for looking at emergent information literacies and investigating thusly how kindergarten children develop IL skills even before they are able to work with texts.

4. Method

The theoretical framework of IL and further emergent literacies have been applied to the method of utilising a combination of participatory observation and action research-inspired trialling of digital tools. This meant that we as researchers involved ourselves in the interaction and the development of the app at the same time as observing what was occurring (Fangen 2010, p. 13). Engeström (2001, p. 24) has developed a model for expansive learning. Postholm and Jacobsen (2011) have elaborated upon this in their 'action learning circle' (p. 18). Our project was based on these models and further developed into a six-step model:

1. Exploration: How can the research question be explored in the kindergarten?
2. Mapping the field: The researchers try to deepen their understanding of the local kindergarten's competence and challenges.
3. Involvement: Interactions with the field. Developing educational activities based on cooperation with staff and children in the kindergarten to develop IL skills.
4. Implementation: The educational activities are tested out and implemented in the kindergarten.
5. Evaluation: Meetings with staff and children in the kindergarten to evaluate the activities

6. Parts of the educational activities are implemented in the everyday practice of the kindergarten. New research questions arise.

All activities were developed in collaboration with the staff at the kindergarten. The kindergarten was selected because they contacted the University with a wish to make more use of digital tools in children's learning processes. The kindergarten was situated in the Agder county in a middle-class area. 80% of the children spoke Norwegian as their first language. The kindergarten was relatively small with only two classes and was therefore suitable for a small-scale case study. The kindergarten had one class with small children aged 0-3 and one for older children aged 4-6. We chose to focus on the older children at a pre-school age. These children also had their own room for pre-school activities, and we were able to meet with them and explain the project to them. There were six children in this group and all of them were eager to participate in the project. The kindergarten wanted to work with new digital learning methods, but the staff had little experience in doing this. They did, however, visit the local library on a weekly basis, where a range of digital resources were available. However, these were not sufficiently exploited either in the kindergarten or during library visits because staff felt hesitant about their own ability to use the equipment. The library was mainly used to borrow books, not for other types of equipment. In an initial meeting, we mapped out what digital resources the staff wished to use and their previous knowledge about digital tools, trying to map how they used digital tools in the kindergarten. One of the pre-school teachers said, 'It can't get any worse than it is today,' meaning digital technology use and digital competence in this kindergarten was at a minimum. She claimed one of the reasons was the age of the staff. All staff in this kindergarten were between 40-60 and can, according to White and Le Cornu, be seen as digital visitors (2011), or even digital immigrants (Prensky, 2001). The latter is highly disputed, but, in this particular case, the staff made it clear they needed to improve their digital skills, especially their IL skills. The kindergarten staff also emphasised that they wanted to improve their use of the local library as a resource.

During the first meeting we decided to test out iPads as a learning tool. Several Norwegian kindergartens use tablets to document experiences on outdoor excursions (Tandberg et al., 2019). Tablets are something which most kindergarten children are familiar with, and the kindergarten had also purchased this equipment for its own use, but it was underused due to a lack of competence. The iPads in the kindergarten were only used to show pictures or to play games on. Researchers point out that it is not the number of iPads that is the problem in schools or kindergartens, but rather the teacher's competence in the use of new technology (Jewitt et al. 2007; Johnson et al., 2013). Jernes and Engelsen (2012) also indicate that 'since the computer accommodates possibilities that are both greater than and different to analogue games and drawing, it would seem that such activity should be guided and assisted by educators, especially given the intention of inclusion of digital media in kindergarten' (p. 293, authors' translation).

'In fieldwork, a number of approaches are employed to directly hear and observe what the studied actors say and do' (Kalleberg 1996, p. 44, authors' translation). The project in the kindergarten lasted for two months. We had two meetings where we planned the project together. Then we spent two whole days in the kindergarten, implementing the project and getting to know the children and their daily activities. The kindergarten had weekly plans which we were allowed to study. These plans showed us what types of weekly activities they planned, for instance their use of the local library. After completing the project, we had two evaluation meetings.

During the project we spent time exploring how the children created their digital books and how they interacted with each other when using digital technology. We also included the children in planning the project and tried to incorporate their perspectives and wishes into the project. One goal was that they ought to choose what they wanted to focus on. In the first part of the project, we chose to focus on the pre-school children in the kindergarten and used the app Book Creator. Neither the children nor staff were familiar with this app. Book Creator is often used in schools and kindergartens and is seen as a user-friendly app. At the same time, a Norwegian study points out that it requires a lot of organising and adult supervision (Staksrud, 2019). With that in mind, we used the second meeting to train the staff in the particular app we were going to use and organised the children into small groups. We also planned the excursion together. The intention was for the children to create their own digital stories about their local community. We took the iPad outside with us and the children were able to film, draw, record audio and take pictures of whatever they wanted to include in the digital stories.

During the project we made field notes and observed interactions between the children and kindergarten staff. We also had meetings with the staff before and after the project, to first plan and later evaluate the intervention. Although we did not know this particular kindergarten and were also aware of our researching roles, our backgrounds as a former teacher and librarian enabled us to work with children and integrate ourselves with the everyday kindergarten life quite easily. We tried to build a respectful relationship with the children and employees while also being aware of the fact that we used the digital books as research material. We tried not to intervene too much in the children's activities. We observed these activities and participated in them when the children asked us to do so. At the same time, the project was led by us, and we also functioned as "teachers" when we introduced Book Creator.

Parents were informed in advance of the project and consented to their children's participation. To respect the anonymity of the children who took part in the project, photographs of the digital books were edited. After the project, and at the request of the children and staff, the books were also printed and used during the kindergarten's assembly period.

5. Results

5.1 E-books created by the children

The kindergarten children were provided with tablets with the app Book Creator installed on them and given the task of making their own digital stories about whatever they wanted. We ventured outside into the local community taking pictures of places they wanted to include, and they made drawings, audio stories and short movies which were also included in the book. All the children wanted to visit and photograph their own houses and gardens. Most of the children created books about themselves and their families in which they drew pictures of themselves, other family members and pets. As the drawings show, the children put themselves in the middle of the family, often a little larger than the other family members.

Figure 1: My family - image by Child 1, licensed under CC BY-SA

As the drawing above (Figure 1) shows, the child has placed himself at the centre of the picture. He has also written 'My family' as a heading. This child has drawn pets as family members. The two pets are smiling like the rest of the family. The family is positioned outside with green grass and blue sky. Hopperstad (2010) points out how children's drawings are a way in which children communicate. Through drawings, they can express their emotions and self-understanding. The children's drawings in the digital books express joy. They all have family members who smile and they all used different colours. The children are sharing information in other ways than text, making comprehensive stories for their peers. In a study from 2009, children's drawings are considered to be an important narrative about their experiences and feelings. Not only the actual drawing is considered important, but also the process where they draw and talk (Einarsdottir et al., 2009). This correlates to our study as the whole process is recorded in the e-books, and some of the children have recorded their own narratives.

The picture below (Figure 2) is a picture of one of the children's cat. The picture is drawn on the iPad, and the boy has used different colours. The cat is outside with a dark food bowl. Even though he cannot write, he has included a "text" about his cat. This shows how children connect letters with drawings and how this boy has learned that we communicate through written texts. The child is showing a clear understanding about how books consist of text and pictures to communicate meaning. It is also an example of how 'drawing activity is not isolated from other modes of sign-making, it is not an isolated behavior but a socially meaningful activity' (Cox, 2005, p. 123). By accident, and probably with the help of autocorrect, the child has also managed to write the word "frikveld" which means free night in Norwegian. The child seems to be attempting to communicate through the skills he has not yet mastered. The layout of the page is clearly inspired by picture books the child has encountered. The text is placed to the left of the page with two paragraphs and spacing, imitating the classic layout of children's picture

books. This is a typical example of emergent literacy, where we can see that the boy is familiar with and interested in books, and that he wants to create something in the same genre without yet having mastered the skills of reading and writing.

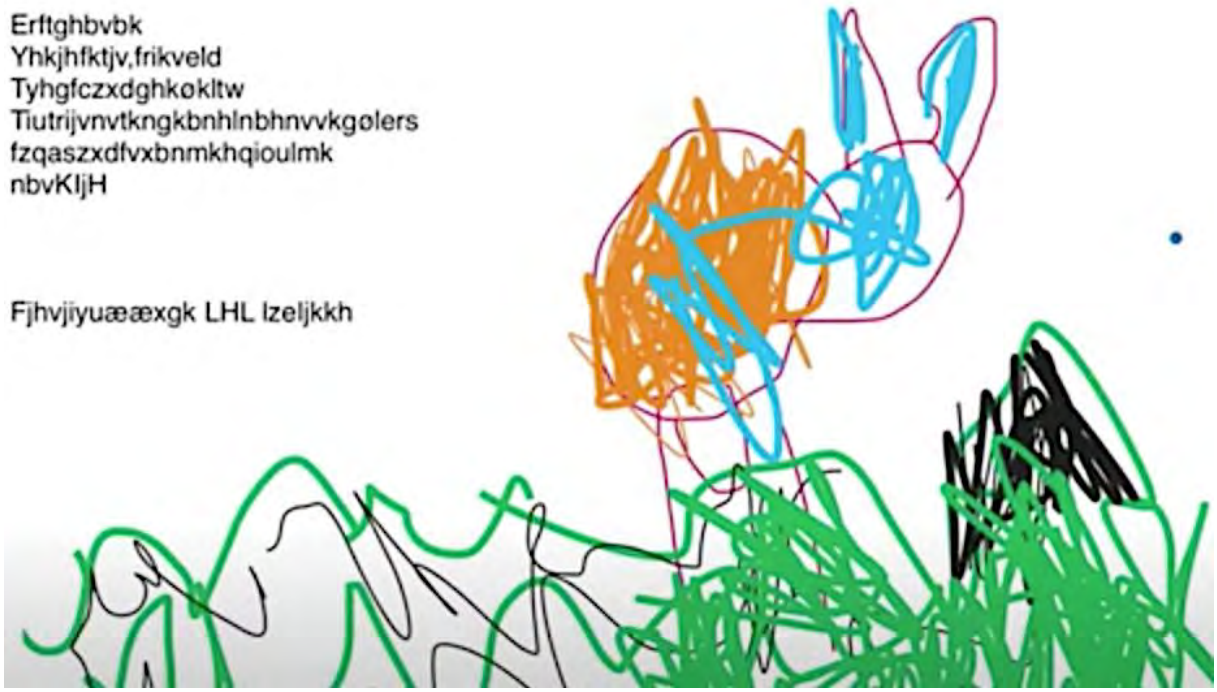

Figure 2: My cat - image by Child 2, licensed under CC BY-SA

Another way of communicating narratives is through speaking. One of the children chose to both draw and record an audio story about how his cat disappeared. In the story, he describes how the whole neighbourhood got involved in the search for the cat. The story has a happy ending, and the cat was found again. He illustrates this story with a drawing of the cat walking away (Figure 3). The other children (in the neighbourhood) participated in the search for the cat. The story illustrates how this boy perceives solidarity and support within his local community.

Figure 3: The cat that got lost – image by Child 3, licensed under CC BY-SA

In most cases, the books focus on activities in the local community and with families. One of the children wanted to include a picture of himself holding a fire hose at the local fire station. According to the staff, the kindergarten visits the fire station once or twice a year.

The children were also interested in showing pictures of themselves playing in one form or another. All the children took pictures of the local playground. Beyond their homes, the kindergarten and the playground seem to be the most important places for them in the local community. The significance of play, the local area's play opportunities and possible restrictions on play were also discussed during the excursion. Clearly, the road was a forbidden area for play, and there were also limits to how far the children could venture when they play. Play was limited to their gardens, the neighbours' gardens and the playground. The woods and the sea were play areas with boundaries. The children could not play alone there. The kindergarten was also an area where children sometimes went to play with older siblings in the afternoon. Some of the children had older siblings attending school, but none of them wanted to include the school as part of their presentation.

After the excursion in the neighbourhood the children started editing their books. They were eager to show each other the results and also discussed what to include or exclude. In line with Neumann's study, we also found that the use of an iPad made the children take ownership over the learning process (Neumann, 2018).

The editing process further relates to IL because the children discuss and present what is allowed and what is not. 'Look at my house,' one of them said, and showed the picture to the other children. Publishing pictures of themselves, their houses and friends in the book were followed up by discussions of publishing rights and privacy protection. These topics are highly complex and must be narrated in a way the children can understand. As they share stories and information about their families, they are faced with copyright issues and ethical questions. For example, they cannot publish photos of their families, but they can make drawings. Further, they also discussed whether they could include pictures of their friends in the book, as exemplified

here: ‘If they say ok, I can do that’, one of the children argued. The kindergarten staff took part in this discussion, and one of the kindergarten teachers told the children that their parents would also have to agree if they wanted to publish pictures of themselves or their friends. Through their interactions and conversations, the children were guided to reflect upon questions of copyright, privacy protection and the handling and presentation of information. The editing processes therefore facilitated a foundation for a discussion about respectful behaviour on the Internet and functioned as the children’s first steps in developing emergent IL skills. This can be seen as a socio-cultural approach to learning where an IL landscape is developed in the social interaction among kindergarteners, kindergarten teachers and the researchers.

5.2 Developing emergent IL through e-books

Most kindergartens have a bookshelf with picture books and children’s books that are read aloud, or that the children themselves can read or browse through. Also, it is common for kindergarten children to visit the local library on a field trip.

In addition to reading books, it is important for children to develop digital literacy and IL. They are expected to develop into adults who make sound digital judgements and apply these judgements to new information and knowledge independently. Kindergarten children primarily learn through play, and today playing on tablets is a large part of their everyday life. When children can access the Internet even before school age, there are associated risks. While children were previously supervised while playing outside, it is now both more important and more difficult to monitor what they do online during “digital play”. This is reliant on parents having some degree of digital literacy, which persists as an ongoing challenge.

Children in contemporary society are increasingly growing up relating to digital tools and an excessive amount of information. Not only is there a great amount of information; there is also a great amount of poor-quality information, leading to what Andrew Whitworth calls ‘information obesity’ (2009). Navigation through the online information jungle is demanding, with younger generations weighted with expectations about their ability to deal with this. It would therefore be logical to imagine that lifelong learning begins in kindergarten.

Lloyd describes IL as a collective activity that belongs to all types of communities, not simply academia. Different skills and literacies are valued in different contexts, and there is great complexity in how these skills and practices are acquired (Lloyd, 2012). This is made visible in our study though the kindergarteners’ discussions on their use of photos and drawings. Staksrud (2019) also points out the need for kindergarten staff to have knowledge of IL, especially copyright and privacy, for them to be able to share pictures in which children are visible and understand children’s copyright to the work they create at kindergarten. Staksrud (2019) emphasises that the involvement of children in deciding which images are acceptable to post on the Internet can instil understanding and the habit of asking those concerned before publishing pictures of them. Digital literacy and IL are closely linked, and staff are required to master both types of literacy when kindergarten children use iPads.

Creating the books presented the children with a number of IL relevant questions, such as: Where would they find the information they needed? What could they share and how could they do this? In doing this the kindergarteners are using their newfound knowledge to navigate the information landscape of their kindergarten with their peers.

To follow how IL is practised means that 'researchers must follow information as it is encountered, created, and circulated within a setting' (Lloyd, 2014, p. 101). In doing this, researchers often try to identify what Bates describes as 'looking for the red thread of information in the social texture of people's lives. When we study people, we do so with the purpose of understanding information creating, seeking and use' (Bates, 1999, p.1048).

The digital books the children created themselves can also play a part in developing the children's IL, by describing their encounters with the outside world beyond kindergarten. A similar experience is also described in a project from the United States where a pre-school teacher found it difficult to find decent factual books for children and decided to make her own alongside the children. Examples can be found on her blog (Meeuwse, 2020). This shows a close connection between IL and digital literacy. Digital tools enable the children to become content creators in addition to creators of a collection, or a library, that can be used by other children in their class. In creating content and further, knowledge that is shared, children are faced with inquiry-based learning that encourages them to reflect upon the information at hand and how to present it to others.

IFLA's guidelines for children's library services (2003) focus on lifelong learning, literacy skills and the library's mission to educate parents and caregivers in helping children become independent library users (IFLA, 2003). In another report from 2001, IFLA also communicates the need for "libraries without walls" to ensure access for all to their services, noting some services are best offered outside the library building, especially for those unable to visit the physical library due to disability or lack of transport (IFLA, 2001, pp. 10–11).

6. Conclusion and suggestions for further research

The children made digital stories using the app Book Creator. The books tell stories about things the children found interesting and considered to be important. Most of them included their local community and families. In presenting this information they face the question of what is acceptable to publish and how they could portray their families. For example, photos of family members were substituted with drawings. In their books, the children chose to combine different modes to communicate and create meaning. Each book is an example of how the children want to present themselves and what is important to them. Furthermore, the content and information the children created were to be shared with other children, making a collection of digital stories that can be considered as a local, digital library. Some of the children also mimicked the layout of traditional children's picture books by inserting letters and "words" to create a text that communicates meaning and looks like a picture book. Even though the children were not able to read or write, they were able to share content and information with their peers using their emergent information literacy skills. They were able to make independent choices of what they wanted to publish and how they wanted to portray themselves and their family. By creating books, the children developed IL skills without the ability to read and write, uncovering different problems and questions through their digital play. This can be described as the development of emergent information literacy skills. It would be interesting to further investigate how this collection could be used by other children in the same kindergarten and how this would further develop a digital book collection.

It would be interesting to further investigate how this collection could be used by other children in the same kindergarten and how this would further develop a digital book collection. In addition to this article, we have produced a study of the same project from a social studies didactics perspective (Trysnes & Moore, 2021), concentrating on its implications for pedagogy in the local community and new digital forms of learning, but it is clear that this project also

indicates the value of further investigation into the development of IL skills in pre-school children.

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