Digital media in Norwegian kindergartens

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Presentation of digital resources promoting multilingualism

• Finally: A presentation of a multilingual application developed for preschoolers and young students in primary school
• Based on Norwegian, Polish, Somali, Vietnamese and Sami fairy tales

• [www.trolliord.no](http://www.trolliord.no)
• AppStore: [http://www.grom.no/trolliordbutikk/produktkategori/app/](http://www.grom.no/trolliordbutikk/produktkategori/app/)
The Norwegian context
Children in Norwegian kindergartens

• Every child has a right to attend kindergarten
• Nearly full coverage
• Linguistic and cultural diversity, in particular in and around Oslo and other big cities
• A challenge that politicians want the kindergarten to be more “school-like” in order to secure language learning in the majority language.
Digital devices at home and in the kindergarten

• Research shows that parents are positive to children’s use of digital devices because of their potential for learning, (Björk Guðmundsdóttir & Hardersen 2012, Moinian 2011)

• Children are well experienced with digital devices from their homes (Björk Guðmundsdóttir & Hardersen 2012).
The curriculum in the Norwegian elementary school: digital skills as one of the basic skills

• Basic skills: Oral skills, reading, writing, digital skills and numeracy

• **What are digital skills?**

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

Framework for Basic Skills, Norwegian Directorate for Education and Training, p. 12: http://www.udir.no/contentassets/fd2d6bfbf2364e1c98b73e030119bd38/framework_for_basic_skills.pdf
The Norwegian Centre for ICT in Education

- The main objective of the centre’s work is the use of ICT for
  - improving the quality of education and
  - improving learning outcomes and learning strategies for children in kindergarten, pupils in schools and apprentices in primary and secondary education as well as students in teacher-training programmes.
  - [http://iktsenteret.no/english](http://iktsenteret.no/english)

- *Nordic Journal of Digital Literacy*
State of the art

• Growing knowledge about prechoolers and their engagement and meaning making with digital tablets and other digital devices in the kindergarten

• Slowly growing interest from public authorities in recognising ICT in modern early childhood education, but clearly a more rapidly growing interest concerning primary school
Presentation of two research projects in Norwegian kindergartens
1. “Digital tablets, interactive white boards and applications in the kindergarten”
AIM: to explore how children make meaning, transform and play while engaging with various applications, and with the interactive white board

2. “With Digital Tools Into the Text”
AIM: to explore different ways of working with demanding texts (one song text, one picture book) in a group of bilingual children
Data and context

• One and the same kindergarten springtime 2012 and springtime 2014. Different children.
• Ca. 90% bilingual children in the kindergarten
• Kindergarten equipped with interactive white board, often used for language training in Norwegian
• Teachers and other stuff are competenced and motivated in using digital tools, but not more than average
• Bilingual children aged 5-6 in a group of 8 in the first project, 12 bilingual children aged 5-6 in the second project
• 4 visits to the kindergarten in the first project
• 12 visits to the kindergarten in the second project
Theoretical fundament

• Socio-cultural perspectives on learning, mobile learning (Dewey 1938, Bruner 1966, Säljö 2010, Traxler 2011)
• Theories of multimodal literacy (Jewitt 2006)
• Social-semiotics and multimodality (Kress 2010)
• Theories of second language learning (Cummins 1979)
Methods for both projects

• Exploratory study, action research oriented
• Multimodally transcribed video material

• Project 2:
• In addition: A range of digital and aesthetic actions with the children and the staff
The first project

“Digital tablets, interactive white boards and applications in the kindergarten”

• Common to the devices: Touch screen technology
• Dewey’s slogan: “Learning by doing” is relevant
Four different episodes from the project

The episodes illustrate some key activities related to literacy and language learning:

• Guidance Sequences leading to transition from tactile to verbal actions (both the child and the adult are supervisors)
• Peer learning and "multitasking"
• Agreement on how to organise their tablet
• Interaction between different technologies

(Different applications are compared within these sequences.)
Interactive white board / *Smart Board*

- Hennessy (2011) explored interaction possibilities using interactive white boards - the direct manipulation of objects and the multimodal activities provide a strong support for collaboration and cooperation, which offers learning and growth opportunities (p. 483).
Enactive actions
The *iconic* representation

- To form images and visual conceptions of something. Knowledge about the world is stored and organised as images, and when fairy tales are told by adding images, they become easier to understand.

- Here: Children’s own images accompany *The Three Billy Goats Gruff*
Rhymes on the IWB: Playing with the language, while performing actions (enactive representation)

5 små apekatter hoppet i en seng En falt ned og slo seg hodet Mamma ringte legen, og legen sa: "Aper i senga? Det er ikke bra!"

4 små apekatter hoppet i en seng En
Social-semiotics – many types of "language"

• Many sign systems create meaning together (images, symbols, audio, graphic placement, verbal/linguistic signs) (Kress 2010)

• Potential for learning: Children can exploit the different systems when making meaning.

• However: Multimodal texts are not new in the kindergarten (Granly og Maagerø 2012)
Peer learning and "multitasking"
Agreement on how to organise the tablet, vocabulary training with “Se og si” (see and say)
Genre training: Making her own fairy tale with *Puppet Pals*
Interaction between technologies (tablet shown on IWB, a more "inclusive" screen)
The second project

“With Digital Tools Into the Text”
Research question

• How can digital tools and aesthetic processes with children open up for multilingual children's understanding of demanding texts?

• Taking photos from the book and from the children’s drawings, moving/dancing in a digital installation, listening to the book from the interactive white board, documenting an experiment with floating and sinking objects using the iPad, telling own stories in the iPad app Book Creator
Two demanding texts

• *Arkimedes og brødskiva* (Hans Sande og Gry Moursund) and *Firkløvervalsen* (Rasmus Rohde og Verdens beste band)

• Starting point: While the preschool teacher was reading and singing the texts, the children did not show any kind of understanding or joy.

• So: How could digital devices and aesthetic processes probably support agency and understanding?
The book is told from the IWB
Drawings from the book
The father in the picture book
Taking photos of the book and own drawings with the tablet
Taking photos
Inserting a photo in *Book Creator*
Co-operating in *Book Creator* about their own books
The digital installation – acting and being in the picture book, surrounded by slices of bread, hanging from the ceiling
Installation – to be in the text
Experiment: What floats, what sinks?
Using the iPad app *Book Creator* for literacy learning

- In a literate society, children have many experiences with written language prior to their entrance in school (Teale, 1986).
- To be able to read and write is no longer a precondition for young children’s interaction with digital devices. Through the interaction with new technologies, young children’s agency is highlighted long before they can talk, read or write (Jewitt, 2006).
Writing his own name in *Book Creator*
Writing her own name in *Book Creator*
Topic: Jealousy (from the song text)
Topic: Happiness (from the song text)
Results from the two studies

• The results suggest that the iPad, or other similar tablets, can be used in multiple ways as an instructional tool to support the teaching of emergent literacy in an early childhood classroom.
Results

• Digital tablets and their built-in applications can provide opportunities for preschoolers to engage in useful and purposeful literacy interactions (Sandvik, Smørdal & Østerud 2012)

• Preschoolers can easily navigate and use digital tablets independently (Beschorner & Hutchison 2013)

• The two studies indicate that children can develop emerging knowledge about print in digital contexts using an iPad, or a similar tablet, and that it offers unique ways to employ reading, writing, listening, and speaking within one context.
The affordances of the applications

- According to Kress (2010) affordances can be viewed as invitations to act and respond.
- *Book Cretaor* and *Puppet Pals*: Offers a lot of different affordances (Gibson, 1979) while ”Se og si” (see and say) is not as rich.
Future visions and recommendations

• Kindergarten teachers must consider how digital tools can be integrated in their pedagogical activities (Jahnke et al. 2014)

• Tablets and other digital devices in the kindergarten can promote literacy in the first and second language.

• However, applications must be critically reviewed

• Technology and multilingualism = true!
References


