

Rethinking the Computer Culture with Early Learners

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Introduction

The importance of Information and Communication Technology (ICT) as part of childhood environments has so far been largely ignored both in *Barnehagen* and in early childhood education/pre-school teacher education in Norway. The Norwegian word *Barnehagen* is used to describe the range of different types of provision for children from birth to six years of age, such as day nurseries, kindergartens and pre-schools. They all have an educational agenda.

This paper will focus on how ICT has become part of daily life activities in some Norwegian *Barnehager*. Early Learners are surrounded by ICT in their everyday experiences. ICT is often regarded as a synonym for desktop computers and activities and interactive computer games. However, when I talk about ICT, I usually refer to a wide-ranging definition of what is meant by ICT. In this paper, I will refer to digital tools working together with the computer such as the digital camera, printer, scanner and CD-burner, and to creative and playful activities. I will present children who investigate and develop ideas, fantasy and understanding.

National Strategies on ICT in *Barnehagen*

There is, at present, international interest in Scandinavian practices and policies in the *Barnehage* field. Some people look at the Scandinavian countries as forerunners of what contemporary practice could be, and what socio-economically strong institutions are able to construct (Rhedding-Jones 2004). Still, while public debate centres on how ICT is creating a new environment in which children are growing up and developing, the *Barnehage* sector has scarcely begun to discuss the issue. The Norwegian Framework Curriculum for the *Barnehage* (1995) draws attention to the importance of technical aids in everyday life. Still, technical areas have traditionally been given little attention by the *Barnehage*. The *Barnehage* does support a growing understanding of computer work if the *Barnehage* has a computer. But few have one. Since ICT is defined by its technical dimension, this can explain why staff members are sceptical towards computers in the *Barnehage*.

The Ministry of Children and Family Affairs is responsible for policies, regulations, professionalism and granting in the *Barnehage* field. For the last three years, the Ministry has carried out a program for quality improvement in the *Barnehage*. The notion of quality is difficult. What is quality? Who has the power to define quality? Can we trust research? According to Stephen and Plowman (2002), there is a scarcity of good quality

research findings on using ICT in educational settings for pre-school children, and claims rely more on assertions than on empirical studies.

The discourse involved in the Norwegian quality debates show that people have different views of quality, the challenges mount up and the Norwegian *Barnehage* will change in time (Søbstad 2004). In my opinion, *quality* raises more questions than answers. It is reasonable to ask if quality is mostly a rhetorical notion. There is a contrast between the notion of quality and the fact that *Barnehagen* achieve better quality with more children in each group, less staff members and less money. Even if the Norwegian government focus on quality, the discussion of quality does not seem to be linked to everyday practices of what to do with “minority children” (Rhedding-Jones 2004), or in my opinion ICT, both of which are challenges Norwegian *Barnehager* have to face. Today the government does not seem to look at ICT as a learning tool for early learners.

National Strategies on ICT and Early Childhood Education

To become a pre-school teacher, one has to enter the Degree Programme in Early Childhood Education. Entry to the programme is normally gained on the basis of upper secondary education. It is normally a full-time course lasting 3 years. Students are offered an introductory course in the basic understanding of ICT in such a way that they can manage a computer and the Web. They are expected to become familiar with the most common user programs. Until Autumn 2003, there was no instruction on how to use computers with children; nor did it include procedures for creative and multimedia programs.

However, a new Curriculum for Early Childhood Education (Utdannings-og Forskningsdepartementet, 2003) plans to instruct students in how to use ICT both together with children in the *Barnehage* and as an administrative tool. From now on, the various subjects will include ICT as a tool for “*organisation, communication, play and learning*”, and the coursework will be organised in such a way that the students use ICT with “*groups of children and in administration of the Barnehage*”. This should come into effect within the next two years. Apart from these provisions, there are no national standards for the knowledge and skills on ICT for Pre-school teachers. Moreover, the educators in early childhood education have little experience in how to use the computer with children and how to use it as an administrative tool in the *Barnehage*.

Projects on ICT

Research into the use of ICT with Early Learners in Norway is only just beginning.

In 2000, I wanted to find out about the use of computers in *Barnehagen*. I made contact with thirty of them through the Internet. Since they all had e-mail addresses, I assumed there had to be at least one computer in the *Barnehage*. I was right. However, none of

them made use of the computer with children nor did they intend to do so. "That's not for us", they answered. This was very disappointing for me.

Shortly after, I was invited to collaborate with university colleges in Spain, the Netherlands and Denmark in the European Development Project "MediaGuide," which received funds from the European Union's Leonardo Programme. This project focused on the educational opportunities afforded by computers and other digital tools, and how adults could interact with and help children and young people to use technology to produce and create, not only to consume. In Norway there was one problem. Almost none of the *Barnehager* involved had their own computer. This made it difficult to work together with the children at their place of work. However, by the end of the project, there was a group of Pre-school teachers who were competent, interested and eager to work digitally together with children, but without computers.

Then I became the Project Manager of IBM's *KidSmart Early Learning Programme* in Norway. This programme focuses on giving children who do not have access to a computer at home the opportunity to acquaint themselves with computers at an early age. Fifty computers were donated in 2003. *Barnehager* that enrolled children from minority linguistic backgrounds and where average family incomes were low could apply. They had to present an ICT-project and develop plans for computer training for staff members. Local steering committees were set up and were to have an overall responsibility for the project at local level. The owners of the *Barnehager* had to give their active support to the project locally.

What have Children and Staff done so Far?

Even if the Norwegian experiences are limited, I believe we have some exemplary practice on how to work with the computer and other digital tools in a creative and playful way. This kind of use of the computer is very different from using pedagogical and interactive computer games. Computer games can easily be something the children use, but it does not have to be of any interest of the staff members. From my point of view, a creative and playful usage of digital tools will support quality in early learning settings, in particular because staff members have to play an active part.

Due to the lack of national strategies on ICT, the members of the KidSmart project had to define their quality approach to the digital world. The digital camera has been the most successful investment so far and has served as a door-opener for many staff members with regard to the computer. It has opened up new opportunities for documentation that can reflect the changes in children's abilities and interests.

The children use digital cameras and take pictures. The oldest children are able to connect the camera to the computer. The pictures can be shown on screen and printed out straight away. They decide which pictures they want to work on or print out. They laminate the pictures so they can be used again and again for different purposes.

Simultaneously, the children are involved in documentation. They collect pictures, text and sounds. They investigate the different activities that are going on, their own thoughts and interests, and progress and development. Children and staff share these experiences with each other in the *Barnehage* and communicate experiences to parents.

Working with pictures, text and sound stimulates the children's language. Many children are not competent Norwegian speakers. The computer gives these children the opportunity to succeed in an arena where language skills are not the most important, and where the children exploit the visual possibilities of the computer. The oldest children can make their own jig-saw puzzles and memory-plays and become producers.

When these children sit in front of the computer at an early age, what will happen with regard to their social experience? A social space is created in front of the computer and children experience new social possibilities. Only on rare occasions are children alone at the computer.

Collaboration with Parents

Parents responded positively and supported the project when they understood that staff members did not focus on computer games but used the digital equipment for other purposes. In the afternoon, staff members put today's pictures in a PowerPoint, they roll the computer out of the cupboard and the parents can take a look at what has been going on that day. The pictures facilitate communication between parents and staff members. Staff members take care of the children's work/play products. Parents take part in the experiences of their children when the staff members put pictures, text and sound on a CD, or make a small newspaper for those who do not have a computer at home. In particular, parents with a non-Norwegian cultural background told the staff members that they learned a lot about what goes on in a Norwegian *Barnehage*.

Staff Training is Essential

There is general agreement among all the participants in these projects that training of staff members is essential. According to Dahlberg *et al.* (1999), quality can be understood as the meaning or value a phenomenon has to those who are involved. Initial practitioner training and ongoing professional development is therefore a vital and urgent requirement for a sensible implementation of ICT in early learning settings. In the KidSmart-project, each *Barnehage* started by carrying out a survey of its staff members'

ICT skills. Then they developed training plans to ensure that staff members had basic computer knowledge and skills. The training was based on the use of internal resources. The novice learned from the more experienced colleagues or even from a child. In this way, it was easier to understand what was happening, repeat it under supervision and gradually learn to manage alone and together with the children. And it was cheap. However, staff members now need to develop more varied and advanced learning skills and they need to take part in reflective processes if they are to use ICT to a greater potential and secure some kind of quality in this work.

The government has so far shown no interest in ICT. In the Norwegian context, we have to look to the staff members, to the parents and to the children and see how they co-operate to develop digital understanding, knowledge and skill. We have to be attentive to their experiences and feelings about quality and computer work. And their voices will hopefully be heard.

Quality can, however, not only be looked at in a local context. The development of a systematic training programme for staff members in the *Barnehage* should be a national responsibility, as it is for teachers in primary and secondary schools. During the last two years, 18,000 teachers have completed an extensive supplementary training programme on pedagogical use of ICT. An initiative was presented to the Ministry of Children and Family Affairs on this issue. The Ministry was asked to support a pilot project on a similar training programme for staff in *Barnehagen*. The programme for teachers would be modified and aimed specially at staff in *Barnehagen*. Two or three participants from a *Barnehage* would form a group, become members of an online community and would receive supervision. The programme would provide staff with appropriate knowledge and skills and include pedagogical arguments regarding the use of ICT with early learners. Then, staff members who have completed the programme would deliver training to colleagues in their own *Barnehage* and in their local area.

The Ministry, however, has rejected this offer. For the time being, the Ministry are working on a revision of the Framework Plan. They do not want to support such a project before they have considered how a new Framework Plan can become a tool for the development and assurance of quality. A committee has been appointed, and has also to consider the possibilities represented by ICT in the *Barnehage*. The committee will deliver their recommendations at the end of February 2005.

In my opinion, the Ministry of Children and Family Affairs are on the defensive in this case. If Norway is not to fall behind in the ICT-field, hopefully the Ministry in a year or two will grant money for a more established programme for staff all over Norway. And hopefully, such a programme can also become part of the future education of pre-school teachers.

Conclusion

In the future, the ability to use a computer with children will probably be an integrated part of every occupational group working with children in one way or another. We need new competency and we need to overcome myths and prejudice in this field. It is important to look into the experiences of institutions that really work with the computer in a qualified way.

In *The Theater Curtain*, a book about how children worked to make a new curtain for the old baroque theatre in Reggio Emilia in Italy, Vea Vecchi (2002:74) writes:

“Without going into the role that the digital revolution will have in the formation of today’s youth, we feel that in this current phase where digital technologies are being introduced into scholastic education, we need to reflect more deeply on the processes that a traditional education enables and facilitates and on those that are supported and nurtured by the digital world. Only in this way can we investigate an area that is still new for education: the connections created by interweaving traditional and digital strategies.”

Yes, staff members in *Barnehaven* and educators in early childhood education need to reflect more deeply on the processes that a traditional education enables and on those that are supported and nurtured by the digital world. ICT as part of children’s daily life activities challenges staff members to rethink the content and quality of childhood today. The pedagogy concerning the use of ICT in early learning settings must be further developed. It is important to ensure that public policy encourages and supports the use of ICT in early learning settings in Norway.

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