

ICT(s) and socialization: The role of the school and teachers

Contribution to OECD Expert Meeting, Oslo 2-3 June 2008

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Cultures of ICT use inside and outside school

My contribution is based on my longitudinal research on how children and adolescents use and interpret media texts (Tønnessen 2007; 2003; 2000). Following a group of youngsters from the age of four to fifteen, I have seen the recent media development in a generational perspective. The core informants in the study were born in 1989, and they were the first generation in Norway growing up with multichannel commercial television, personal computers, cell phones and broadband Internet connection. Thus, my meetings with them in 1993, 1995, 2000, 2002 and 2004/2005 in many ways turned out to be a study of the introduction of new media to the general public. The qualitative data from the five girls and five boys in the core group were supplemented with a broader perspective on the uses of and attitudes to media texts among their classmates.

In this presentation my focus will be on the relations between school culture and learning processes outside school in a gendered media market. After presenting an overview, my discussion will concern how boys and girls seem to relate differently to formal and informal paths of learning.

Background

The use of computers did not appear relevant in the first two waves of data collection when the informants were in pre-school¹. In 2000 when the children were 10-11 years old, ICT appeared as one of a broad range of relevant media technologies. Through their school teachers the children were asked to complete 'Media Diaries' through one week, commenting

¹ At the time when my informants were six years old (in 1995), school start was still at the age of seven. This changed to six from 1996.

on media experiences in general, and on certain media texts in particular. Among the specific questions were one about favourite sites on the Internet, and one about favourite computer games. In addition the students (114 students completed the diary) were asked about access to computers and actual use in their homes. The main impression from these data, was that although 9 out of 10 students had access to a computer at home, this was not a medium of interest for the majority at that point. Only 22 out of a total of 510 free comments (4 %) dealt with experiences with computers, and these comments were mainly about the challenge of playing games. Still the difference between boys and girls is evident even at this early stage: 28 % of the boys had a computer in their room, in contrast only 15 % of the girls had their own computer. And the boys spent an average of 50 minutes per day on the computer, while the average among the girls was 16 minutes a day.²

This situation was radically changed in 2002 when the main focus of the data collection was new digital media. The data collected consisted of written essays, focus group interviews and observations of activities in a computer lab. The students, aged 12/13 at the time, were asked to look into the future and write an essay describing which media they expected to own and use in their rooms when they turned 15. In the focus groups³ all the students seemed familiar with computers to some degree, but some of them – particularly girls – said they did not use it much. The reasons given varied: Some complained about old equipment with low functionality, others said they preferred other activities. The gender differences are clear in the essays: The boys tend to emphasize the development of the technology in and for itself, displaying their fascinations for stronger and faster machines and bigger screens. The girls also take for granted that technology will take huge leaps ahead in the time span of 2-3 years, but their fascination is mostly directed towards the social and aesthetic consequences of this development.

The impression that the computer was becoming a naturalized part of youth life was confirmed in a survey covering 236 students in 10th grade in 2004⁴. Only three girls claimed that they never used a computer. 93 % of the boys and 80 % of the girls stated that they used computers regularly (every day or 2-3 times a week). This question did not distinguish between use in school or outside school. The survey was followed up by in-depth interviews

² These average numbers hide great individual differences. Two thirds of the children (both boys and girls) did not answer the question about favourite Internet sites. Two thirds of the girls and one third of the boys did not respond to the question about computer games, indicating that a majority of the girls and a substantial minority of the boys were non-users at the age of 10.

³ One group from each of six classes, each group consisting of three boys and three girls.

⁴ The questionnaire was filled in by all the 10th grade students in the two upper secondary schools most of the core informants went to; 118 boys and 118 girls.

with the core informants. All the boys claimed to be active computer users, but only three of the girls. The two other girls had most of their computer experience from school.

This overview shows a very rapid increase in the use of computers over time, depending partly on age, partly on improved access. The access to computers as such increased most rapidly in Norwegian homes in the period from 1995 to 2000.⁵ But the growth in actual use had its most radical increase from 2002 to 2004. This seems to be connected with more interesting content in terms of software and constant online connection to the Internet. We may conclude that access to hardware is only the first step into the world of ICT, and that computer games seems to be the door opener for a majority of the boys. The girls follow as frequent users at a later stage of diffusion, and they are to a greater extent motivated by the possibilities for communication. The computer becomes important when it serves as an extension of their social lives.

ICT in school

In the focus groups interviews (2002) and the individual interviews (2004/05) the youngsters were asked about computer use in school. In 2002 I found that the use of computers in school was very much dependent on the interests of the teacher and the availability of equipment. Access to computers was a restricted resource; in all the schools visited the computers were placed in a separate room, and could only be used according to a fixed time table. For some of the classes this meant once a week, or whenever the teacher could plan ahead and book the room. In one of the schools the students were given a one week intensive course, but this was not followed up in regular school work. The quality of hardware varied from old computers with no cd-station, to relatively new machines. Only one of the schools was connected to the Internet by broadband. At the other end of the scale, another school did not have access to Internet on any of the student machines. Regardless of this all the schools restricted the use of Internet, partly for safety reasons, partly for practical reasons. The result was that the students mainly used the computers for writing, and to some extent to search for information in connection with project work.. Communication through e-mail or chat required permission from the parents, and even then it was only permitted in two of the schools.

Summing up the situation for use of ICT in schools in 2002 we see that the schools were lagging behind compared to the use of computers in the homes, both in terms of quality of equipment, and in terms of varied use. On the other hand we find that some of the girls who

⁵ Norsk mediebarometer, Statistics Norway. URL: <http://www.ssb.no/>.

did not use a computer at home, were introduced to ICT in school, albeit at a very low level of competence.

In 2004/2005 the students had moved into upper secondary school, and the access to equipment in some of the relevant classrooms was radically improved. One out of the ten core informants, 'Marit' told me that she did not have access to a computer at home. But her classroom was equipped with eight computers, and her teacher was particularly eager to use them, since he was the ICT responsible for the whole school. In this case, access in school was vital to ensure that this student got a chance to use a computer and find information for her school work on the Internet. This is practically the only computer use she mentioned in the interview.

For the other nine informants the computer was an integrated part of their daily life at this point. They used it for school assignments – and in some cases this was given as a reason for obtaining their own personal computer. But for all the boys and three of the girls the computer use outside school seemed far more advanced than the use related to school work. Four of the boys had spent their own money to buy a computer, and three of them showed an interest in constructing the hardware themselves. The same applied to only one of the five girls.

A gendered arena

As we have seen in the previous, there is a gap between the use of ICT in school and in leisure time. To some extent the school evens out the differences between active and more passive users of ICT. But at the same time the school use is restricted to receptive use of information and writing. We might say that the schools studied only replaced or supplemented the text book and the exercise book with similar texts in digital form. One of the boys commented on this in the interview. He claimed that his school gave ambivalent signals about using the Internet. On the one hand this was encouraged, especially in subjects like Social Studies. On the other hand he detected a certain concern that the students could be influenced by improper propaganda, and that they might be tempted to copy material from the Internet instead of entering into active learning processes.

The ICT related activities outside school require a much broader variety of competences from the active users. They engage in building the hardware, as well as downloading images, films and music. They contribute to net communities, set up discussion groups, and develop their social relations through chat and email. And the boys in particular

engage in computer games, developing strategic and social competences as well as computer skills. This is the part of the media culture where the differences between boys and girls are most prominent. In the survey conducted among 236 10th graders I found that boys and girls were equally interested in using the computer to search for information. But the boys favourite activity was playing computer games (44 %) while the girls favourite was chat and email (55 %). When asked what other activities they used the computer for, the variety was much greater among the boys. The girls mainly mention reception of film and music, while the boys present a broader range of activities including production of film and music as well as programming (hacking).

User cultures in school and leisure time

My data point to the fact that the knowledge of ICT and its use is developed mainly outside school in informal learning communities. This competence is to a great extent spread within the peer culture. The boys in my material in particular seem to relate to an alternative ‘educational’ culture outside the formal school system, and in many cases these arenas of collaborative learning are taken more seriously than ordinary school activities.

An example given by one of the boys in the core group may illustrate this. When I visited him in his room at the age of 15 in order to conduct the individual interview, he proudly showed me all his media equipment. Looking back to the focus group interview two and a half years earlier, he told me that he had been utterly embarrassed because of his lack of knowledge about computers at that time. Consequently he decided to deal with his problem by organising ‘computer parties’ twice a year together with a friend (a more competent peer, as Vygotsky might have put it). To him this became an important arena of learning, and at the age of 15 he claimed to know more about computers than his parents. He seemed confident at this point that he could communicate about computers and digital equipment without making a fool of himself, and this had noticeably improved his self esteem.

Joint efforts and private activities

There seems to be a gendered cultural divide in the learning processes connected to ICT, that may increase the differences between boys and girls⁶. In general the girls seem much more loyal to the school culture than the boys. They tend to integrate their media use with activities

and text forms valued by the school culture. One example is 'Liv', who was characterized as a typical 'screen child' in the pre-school part of the study. Throughout her school years she seems to be the girl with the most advanced computer competence who engaged in computer games from the age of 10, handed in an essay in colour print decorated with clip-arts at the age of 12, and bought and installed her own computer at the age of 15. Together with a schoolmate she won a prize for the best home page made to document a school project in 9th grade. Still she seems to underestimate her computer activities in the interview, while on the other hand underlining her book reading. It seems as if her feminine identity would be threatened if she had displayed her ICT competence more openly. Girls don't brag about their computer skills.

In contrast to 'Liv' we find 'Kåre', the most typical 'book child' at the age of four and six. Through the school years he becomes an eager player of computer games and this seems to develop his technical as well as textual competences in a way that is valued among the other boys. Since 'Kåre' lives in a family more occupied by traditional media than ICT, he has had to develop this competence together with other boys, for instance in a group gathering to link up their computers in order to play games together. He is still a lover of books, but his reading activity happens in solitude and is not valued by the other boys. His computer skills contribute to his masculine identity in a way that reading never could accomplish.

Another contrast in my material is found between the two children who showed little interest in symbolic representation of any kind in their preschool years, 'Marit' and 'Per'. At the age of 15 their lives seem to have taken quite different paths. Per has developed a keen interest in computers in close relations with his father and older brother. This seems to have given him confidence and motivation for future education. This sense of self esteem also spills over to texts in books: He is well into fantasy literature and has read all the *Harry Potter* books⁷, some of them in English. And he uses the Internet to pursue special interests that he cannot share with his friends, for instance his taste for punk music. 'Marit' in contrast, does not take an active part in learning communities, neither in school nor outside. She lives in a home with no computer, and only engages with computers when she cannot avoid it. Neither is she interested in reading, and her plans for further education are rather vague. In this case the engagement with computer culture in his free time seems to function as a door opener to a

⁶ The same goes for men and women: When I asked who they turned to for help when having computer problems, none of my informants mentioned their mothers. Some had competent fathers, uncles or brothers, a few also mentioned an older sister.

⁷ Five volumes at the time when the interview was conducted.

broader culture of learning for 'Per', while 'Marit' has not found any equivalent motivation for learning.

Computer culture contrasted with book culture

The longitudinal study of this group of youngsters who have grown up parallel with the development and diffusion of ICT in modern Norway does not support the common understanding that there is an opposition between modern digital culture and traditional book culture. The youngsters move freely between different media and activities, integrating and combining texts and technologies in their own ways. They are socialized into a school culture, which only reluctantly and in limited ways has taken advantage of the opportunities offered by new information and communication technology. Or rather: The girls are properly socialized into this culture while the boys seem to give priority to the peer culture connecting them to other boys and the informal learning processes developed in this setting.

In this situation it is thought provoking to compare the attitudes and practices boys and girls develop to computer culture and book culture respectively. It is common knowledge that girls tend to read across a greater variety of genres than boys. Girls may be happy to read typical books for boys, while boys would never dream of reading typical girlish books. Also girls enjoy discussing their reading in the school setting as well as with family and friends. In contrast the boys in my study tell me that reading is a very private activity that they rarely share with anyone else.⁸ This may be one reason why we find that the differences in boys' and girls' reading skills as measured by PISA seem to be increasing (Kjærnsli et al 2007).

The opposite trend seems to be valid in relation to computers, especially when it comes to computer games. Here we find that boys show interests in a much broader variety of genres than the girls. All of the boys in my core group had played the girls' favourite game *The Sims*. But only one of the girls had played the boys' favourite *Counterstrike*. And as we have seen above, the boys develop their computer competence within peer groups that function as communities of informal learning. The girls on the other hand, are careful not to brag about their computer competence, as we have seen in the case of 'Liv'.

Conclusion

Broadening the picture, we seem to face a society where higher education is dominated by girls. They stay loyal to school culture and follow the educational paths offered by society. At

⁸ The exception in my material is 'Kåre', who started out as a typical book child. But he states that he mostly discusses books with the girls in his class, since the other boys are not interested.

the same time we see that the boys still find their way to the best paid jobs, perhaps after building their competence through informal channels in playful ways.

In conclusion we can sum up the insights offered by my material: Schools and teachers vary substantially in terms of available equipment, competences and attitudes to young people's use of ICT; at least seen from the point of view of the students. In general they contribute only a limited part of the ICT competence developed by young users. Nevertheless this contribution may be significant for the girls who are reluctant users, even if the results are limited. On the other hand we have seen a potential for learning from and through computers reflected in user cultures outside school, particularly among young boys.

These learning processes seem to be dependent on attitudes to ICT deeply rooted in identity formation and the understanding of being boys and girls in modern youth culture. Short cuts to changing these attitudes may be hard to find. However, constant change is a feature of computer culture and technological development. New generations may react differently, as may even teachers, school leaders and politicians.

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