BRINGING ACTORS TOGETHER
- ICT, DISABILITY AND PUPILS IN SPECIAL SCHOOL

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ABSTRACT

Information and Communication Technology (ICT) is part of everyday life in various ways. This thesis focuses on the connection between disability and ICT among pupils with intellectual disabilities and on ways for researcher to study human and technology. The aim has been to study how ICT, agency and disability become constructed in a collective made up by actors such as humans (pupils with intellectual disabilities) and non-humans (computers, mobile phones, policy-documents).

Two studies at two schools (totally the studies included nine classes) in the Norrbotten area in Sweden were conducted as a way to disentangle the aim and research questions. The studies which underlie this thesis are based on observations and interviews among six pupils in three classes in their everyday schooldays. Additionally an analysis of Bill 2004/05:175 was conducted.

The thesis presents reviews of theoretical and methodological resources from disability studies, feminist studies and science and technology studies, Actor-Network Theory in particular, as well as an analysis of selected empirical material from the classes and Bill 2004/05:175. The analysis was conducted through themes, namely the following: introducing the classes, the schooldays and the school setting, the pupils’ everyday life in school, the policy and understanding about intellectual disability among pupils, using ICT during the schooldays, ICT in everyday life, the youths’ views of the computer, the ICT policies in Sweden and a sustainable ICT society for all.

The main findings present how pupils with intellectual disability live disability, how the pupils regard disability and technology (express disability and technology to be). The thesis additionally explores how the pupils talk about themselves as users and how this in turn also relates to policy practices (more specifically, on the expressions in various statements in the bill and its focus on use, user and access). Another concern is how disability becomes intertwined with technology. Moreover, the thesis explores how actors in a form of collective bear effects on the body and its intertwining with disability and technology. Additionally, it examines the ways the pupils see themselves and how they act. The study shows that forms of unity as well as differences regarding access and users of ICT are found in the practice of policy-making as well as in the pupils’ practices. The thesis additionally disentangles how one as a researcher can give voice to human and technology interaction when researching disabled pupils’ agency and subjectivity. Thus, the thesis explores ways for researchers to study human and technology without relying on boundaries between them while at the same time being responsible in her/his claims. Here the work draws upon work from feminist studies; an inspirational source is Donna Haraway and more specifically her concept of situated knowledge.

Key Words: Information and Communication Technology, ICT, Disability, Pupils with Intellectual Disability, Agency, Subjectivity, Hybrid Collective, Situated Knowledge.
FOREWORD

Writing a thesis includes a lot of actors besides the person writing it. There have been lots of human and non-human actors accompanying me during the years of writing this thesis. I would like to thank all these actors but due to the limits of pages this would be impossible so I will only be able to name a few.

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Luleå, April 2009
Rebecka
# Part One - Introduction

## 1 Introduction

1. **Aim and Research Questions**
2. **Background and Central Concepts of the Research: Special School, Disability and ICT**
   - 2.1 Narratives of the Research Area and the Research Interest
   - 2.2 The Research Project
   - 2.3 Building Bridges
   - 2.4 Special School
   - 2.5 Disability and ICT
   - 2.6 A Computerized School
   - 2.7 Access to and Use of Computers in Everyday Life

# Part Two - Research Standpoints

3. **Standpoints**
   - 3.1 Standpoint # 1 Disability
   - 3.2 Standpoint # 2 Actor-Network Theory - ANT
     - 3.2.1 Application of Actor-Network Theory
     - 3.2.2 Cracks in the Facade?
   - 3.3 Standpoint # 3 Feminist Studies of Knowledge and Science
   - 3.4 Standpoint # 4 Feminist Studies and Gender and Technology
   - 3.5 Standpoint # 5 Body, Dis/ability, Subjectivity and Agency

4. **Methods, Methodology and the Interdisciplinary Toolkit**
   - 4.1 The Research Settings - the Research Mountains
   - 4.2 Research Methodology - and Research Approach
     - 4.2.1 Interdisciplinary Toolkit
     - 4.2.2 Situated Knowledge
     - 4.2.3 Multi-Sited Ethnography and Qualitative Approach
     - 4.2.4 Interviews
     - 4.2.5 Observations
     - 4.2.6 Texts and Visual Documents
   - 4.3 Analyzing the Empirical Material
   - 4.4 Ethical Considerations

# Part Three - Pupils, ICT, School and ICT Policies

5. **Analysis – An Encounter Between Pupils, Disability and ICT**
   - 5.1 Introducing the Classes
   - 5.2 The Schooldays and the School Setting
   - 5.3 The Pupils’ Everyday Life in School
   - 5.4 The Policy and Understanding about Intellectual Disability among Pupils
   - 5.5 Using ICT during the Schooldays
   - 5.6 ICT in Everyday Life
   - 5.7 The Youths’ Views of the Computer

6. **Analysis of Bill 2004/05:175**
   - 6.1 The ICT Policies in Sweden
   - 6.2 A Sustainable ICT Society for All
   - 6.3 Summary

# Part Four - Dialogue

7. **Bringing Actors Together – Discussion**
PART ONE - INTRODUCTION

1 Introduction

Issues concerning use and access of Information and Communication Technology (ICT) among Swedish citizens are part of a history which can be seen as dating back to the early 1960s. An important starting point is Bill 1963:85 from the early 1960s, which laid a foundation for later bills concerning ICT. It was a policy which introduced how computers should be implemented in the Swedish society (Johansson, 1997:85). It declared, for example, that the use of computers for administrative purposes was a way to rationalise processes in the state administration (Bill 1963:85:49). Access and use of ICT are still to be found in today’s bills. For instance, Bill 2004/05:175:38-39,43 stipulates how access and use can be improved for the elderly, for women and men, people with disabilities and people from various ethnic groups. According to the bill all citizens should have equal access to ICT.

However, the statement that all citizens should have equal access to ICT sometimes misses out that the access and use of ICT happens in concrete practices. People who use ICT have their specific wishes regarding access and use based on their experiences and differences in ethnicity, class, gender and dis/abilities. For instance, a blind person might want to have the possibility to work with a keyboard using Braille language when she/he searches information at one of the municipality’s home pages. By having access to an accommodated hardware (the keyboard) she/he has possibilities to equal access to the information and to participate in the society. In policy-documents differences, such as ethnicity, disability, and gender, are at times acknowledged but then merged together, while at other times the differences are seen as entirely non-existing. An example of this might be statistics which present that disability influences access and use of ICT. The statistics classify people as users of ICT based solely on the fact that they are living with disabilities. The documents do not take into account the variety in the people’s disabilities, backgrounds or knowledge on ICT. The user is solely seen as someone being disabled.

In this thesis I focus on a group of people who are highlighted as of importance to Bill 2004/05:175, namely people with disability. More specifically, I set out to explore the interaction between pupils with intellectual disabilities and ICT. The thesis presents that the pupils live in relationship to ICT, other actors (teachers, parents, policy-documents, etc.) and disability which in various ways influence the way they see themselves (their subjectivity) as well as the ways they come to live and influence their lives, how they act in their everyday life (their agency). I want to stress that it is important to untangle that access and use regarding ICT is not solely about people belonging to a specific group of people where technology influences the person’s way to act or/and way to see her/himself. Rather, I want to emphasise that access and use of ICT is a matter of an encounter between humans and non-humans.
For me, (non-humans) policy-documents and technology and (humans) pupils with disability form a collective which influences the way the person sees her/himself and acts. Let me exemplify, documents like Bill 2004/05:175 sets up standards for both people and technological artefacts (cable, fibres, etc.). Thus, in order for Sweden to offer everyone equal access to ICT broadband is one form of prerequisite. In this encounter between documents, cables and people; the access, use, agency, subjectivity and dis/ability come into existence. No actor is more important than the other. Thus, ICT is not deterministic; rather it is all the actors who contribute to people’s use of and access to ICT.

When one starts to research issues around agency and subjectivity from an angle of encounters between humans and non-humans it becomes possible to see how we despite differences such as age, gender, disability also bear resemblance with each other. Thus, by not starting out from dichotomies that divide people it becomes possible to disentangle that disabilities come into existence based on a body interacting with other bodies. Access exists in close relation to how one acts and sees oneself. More specifically, one can say that access to ICT influences a person’s agency and subjectivity. In order to be part of a society with equal access we all encounter with other people and technology. We encounter these actors in various ways depending on age, gender, ethnicity and disability but importantly we all encounter them in one way or the other. How disability comes to matter depends on the relation we have to people and artefacts. Disability does not exist as a pre-given category; it comes into existence as part of relations between human and non-humans (cf. Elovaara, 2004:53).

Finally, my research additionally intends to connect disability research to feminist studies and science and technology studies. Such a merger might enable the disentangling of agency as effects of relations between being similar and dissimilar. By exploring agency from that kind of angle, disability and ICT can be seen as effects and not something pre-given. In the same time, equal access and use can be explored from an angle where similarities as well as differences exist among citizens. More specifically, it becomes possible to unravel that access and use can exist in various ways. Additionally, I think that by exploring access and use from a viewpoint where one considers similarities simultaneously as differences, people who live with disability can argue for a policy where things could be different.

1.1 Aim and Research Questions

The aim of this thesis is to study how ICT, agency and disability become constructed in a collective made up by actors such as humans (pupils with intellectual disabilities) and non-humans (computers, mobile phones, policy-documents).
The major research questions are:

- How do pupils with intellectual disabilities see disability and technology?
- How do the pupils use technology and see themselves as users of technology?
- How do policy documents, such as Bill 2004/05:175, express issues about use, user and access?
- How do technology and disability become interwoven within practices of hybrid collectives (human and non-human actors)? In what ways are agency and subjectivity a process of relations between humans and non-humans?

When talking about disability in the thesis I define it in a way which stresses the relationship between the body and the surrounding society. I regard disability not as something purely social or biological. Rather than seeing disability as starting out from these dichotomies I regard disability to be a collective where the body, the environment and technology co-exist and are effects of relations. Thus, the body in its interaction with the environment and technology form a relational part which creates effects which sometimes makes a person disabled. All of them contribute to what disability becomes. For instance, a person with a hearing impairment might have difficulties hearing what other people say in specific circumstances. By using hearing aids she/he can influence the way she/he hears. Disability thus becomes something which is an effect of relationship between the body (an impaired ear), the environment (people and artefacts in the surrounding) and technology (the hearing aid). Such a collective contributes in various ways to what disability becomes and how it is lived.

Moreover, in my ways to define and present the pupils I introduce them as pupils with intellectual disabilities and as such I diverge from the Swedish National Agency for Education which names pupils in special schools as pupils with learning disabilities. For me living with intellectual disabilities resembles living with learning disabilities in the way one needs to accommodate e.g. the schooling. However, learning disabilities do not always include the specificities which can be found in living with intellectual disabilities. Learning disabilities include among others pupils with cognitive disabilities such as Attention-Deficit/Hyperactivity Disorder (ADHD) or autism. These pupils sometimes have a need for specific adaptation of the school day similarly to pupils with intellectual disabilities. However, the way pupils with intellectual disabilities need adaptation might differ from someone who lives with learning disability. Thus, someone with learning disability might be able to use the same school material as pupils without disabilities. Distinct from that, a pupil with intellectual disability might need to have school material which explains things in a different way so they can get the same knowledge.

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1 See 3.1 Standpoint #1 Disability for a presentation of ways to disentangle disability.
2 The Swedish National Agency for Education is in Swedish Skolverket.
By exploring ICT I aim to capture informational, communicative and social dimensions which are effects of the relation between technology and users. For me ICT is both about searching for information and capturing communicational aspects (cf. Appelberg & Eriksson, 1999:15-16; Riis, 2000:17; Hernwall, 2001:12-13; Svenska dataterrmgruppen, 2007). I additionally regard ICT to be a form of technology in process (cf. Berg, 1994:96). Thus, the users of ICT shape what becomes technology. It does not exist as an already-made artefact.

I regard subjectivity and agency as relationships between people and artefacts. Thus, one’s understanding of oneself is shaped in one’s relationship to other people and technology. For instance, when my friend in the UK sits in front of the computer and chats on-line with me at the same time as she is recovering from a surgery; her subjectivity (how she regards and sees herself) becomes mixed. It is a mixture of sitting in front of a computer, chatting and visiting me virtually. She still has problems with her health but while visiting and chatting with me in a way which works in accordance with her bodily needs the way she regards herself to be is not solely about being ill. She can chat with me and via a web camera visit my home without the effort it would take her to travel to Sweden. Thus, how she sees herself is not only about her own body, it is a mixture of her relationship to other people and artefacts. This form of subjectivity might be seen as an effect of relationships to other people, for instance to various actors’ practices. This relational aspect additionally co-constructs similarities and differences to other people. Me and my friend are both users of various forms of ICT but we also differ e.g. in the way she has different accommodations such as a chair which suits her aching body. But we are similar since we both share a wish to communicate.

The relational aspect additionally contributes to agency, the way a person acts, lives and influences her/his life. Again, technology and humans are co-constructors of what agency becomes. Imagine that you are having problems with your breathing. You are having great difficulties to perform daily activities and it causes you lots of distress in your life. You decide to visit a local medical doctor who after various examinations and tests sets the diagnosis to be asthma and prescribes an inhaler. After some time after using the inhaler you feel that your life has changed. You are back to your ordinary life, out running and bicycling, but at the same time as you perform the activities you used to perform before starting to medicate you now need to use an inhaler, a form of technology which was not previously part of your life. Your ways to act happen in a relationship to your own body, its needs, relations to medical professionals and medical equipment.

To conclude, in this part an introduction to the thesis was presented. The next chapter in this introduction part familiarizes the reader to a background to the research area, the research interest and the research project as well as the central concepts of the research: special school, disability and ICT. The next main parts of the thesis are: the research standpoints (part two) and the empirical analysis of pupils, ICT, school and ICT policies (part three). The research standpoints present reviews of theoretical and methodological resources from disability studies, feminist studies and science and technology studies which influence the research.
Part two of the thesis additionally should be seen as a basis for the research approach which has been developed for the overall doctoral research work. The empirical analysis gives a report of the first step of the analysis of selected parts of the empirical material. The dialogue part (part four) presents a discussion and concluding part. The reader will notice that there exist recurrences within the thesis, mainly around description of the research project. The recurrences aim to make the chapters readable even separately.
2 Background and Central Concepts of the Research: Special School, Disability and ICT

2.1 Narratives of the Research Area and the Research Interest

As a way to locate and situate my research interest and how I entered the research area an introduction to my experiences and encounters with computers and disability is presented.

My first encounter professionally with computers took place during 1995–1998 when I worked (as part of my preschool teacher position) in a special school for pupils with intellectual disabilities. In our practices we had access to computers as a form of pedagogical tool. We used the computers as a way for some of the pupils to learn cause and effect. This meant for instance that when the pupil pushed one of the keys on the keyboard she/he could listen to music coming from the loudspeakers. Thus, pushing the key taught the pupil that it caused an effect such as music being played from the loudspeakers. However, the access to the computers was not without problems. Sometimes, we felt that we were successful but very often we felt that the pupils did not benefit that much out of working with computers mainly since the resources such as the mouse and the keyboard were not accessible in a suitable way for them. During the preschool teacher years I became interested in finding ways to use computers for the pupils because I felt that it might be a way for them to communicate. Perhaps it was the wind of the techno-optimism, which circulated in Sweden, that I was part of.

After some years of additional studies in informatics and systems science I gained a PhD student position at Luleå University of Technology. During my first year as a PhD student I conducted a study were I explored access and use among pupils with disabilities and their teachers. In that study I explored how ICT (e.g. computers) as well as tape recorders and wheel chairs were part of the everyday life of the pupils and the teachers’ work practices. This study made me interested in how technology got intertwined with pupils’ everyday lives as well as how the teachers in their practices considered this. Let me illustrate by an example how this looked like. As part of my PhD studies I am now visiting Ulla’s class and I am sitting in front of a computer with Ulla and her pupil Erik. Ulla helps Erik to switch on the computer programme. When Erik touches the mouse the computer is given a command to start the programme, which enables Erik to listen to music. Erik does not seem to enjoy this programme. He is more interested in looking at the mouse and tries to pull it to pieces by biting on it and hitting it on the table. After a while, he jumps down from the chair and dances to the music. While Erik continues to dance, Ulla switches the programme off and decides to take Erik back to the classroom and I am thinking of what I have seen and what I should do with this experience, how can I alter this? This encounter with Ulla and Erik was frustrating for me. I did not want to reproduce that Eric was failing in his use of the computer. I wanted more to present that the computer did not fit his need. It was difficult to know how to find ways to unravel this.
However, as part of my PhD study I got an opportunity to study at Lancaster University, United Kingdom. As part of that I had the possibility to discuss the previous encounter with Erik and Ulla with a lecturer. In our talk, we talked about failure and success in using technology, and for the first time I was able to see that perhaps what I saw as failure, both as a preschool teacher and as a PhD student, was not failure. The lecturer challenged me saying that perhaps the story about Erik is a story of the opposite, a form of success. She questioned my ideas about failure, success, access and use of technology. She challenged my thoughts so that I came to see this experience as a form of blurring of the relationship between technology and humans and that an alternative form of use was performed when Erik danced instead of touched the mouse.

This introduction to my experiences and encounters with computers and disability and the additional story tell the narratives of my research area, locating and situating my research project. Thus, it is possible to see that in the beginning of the research the focus was very much on technology which failed the pupils. More specifically, the previous presented story introduced how I got interested in how ICT (as well as other technologies) were part of the everyday life of pupils’ and teachers’ work practices. After a while I came to shift focus and became interested in ways to explore what the use is, for instance, how the use of ICT was part of the everyday lives of pupils with intellectual disabilities. Thus, rather than valuing use of ICT as better or worse the focus came to be more on what ICT might mean in disabled pupils’ lives. This lead to an interest in how to conduct research exploring how different actors (both humans - researchers, pupils with disabilities, teachers, policy-makers – and non-humans, e.g. technological artefacts) in their everyday practices construct a form of collective, where they jointly influence disabled pupil’s everyday lives.

2.2 The Research Project

The point of departure for the thesis is found in studies at two different special schools, Giga and Mega, in the northernmost region of Sweden, Norrbotten. The first study was conducted during spring 2002 and the second during autumn 2003 and parts of spring 2004. A special focus for the studies was on teachers’ and pupils’ everyday practices of using and accessing technology (mostly around computers as well as mobile phones). The studies consisted of interviews and participant observations among pupils and teachers in nine different classes. Simultaneously Bill 1999/2000:86 and Bill 2004/05:175 were read and analyzed. The reading of the bills was based on an interest in how the policy-documents articulate the interaction between technology, use, users, disability and equal access.

3 I wish to thank Vicky Singleton for enabling the discussion and disentangling of this matter.
* Assumed names.
2.3 Building Bridges

My study intends to build bridges without constructing boundaries. The building that I intend to do with my thesis can be seen as two folded. Firstly, I consider that in order to grasp the aim of researching how ICT, agency and disability become constructed in a collective made up by actors such as humans (pupils with intellectual disabilities) and non-humans (computers, mobile phones, policy-documents), one has to build bridges between various disciplines as well as use various methods. Secondly, like Moser (2003:36) I value that it would be interesting for scholars in disability studies, science and technology studies as well as feminist studies to find ways to work together in their various studies of disability, gender and technology. Thus, here I give a brief overview of the theoretical underpinnings, which my thesis builds upon.

From disability studies I present an overall view of the individual model and the social model of disability. Scholarly work concerning the urge to include medical and biological issues in the social model is additionally highlighted (cf. Shakespeare, 2006). I additionally introduce ways to define intellectual disability (Somander, 1997, 2005) and the principle of normalization (e.g. Kristiansen, 2000; Tideman, 2000; Nirje, 2003). Moser’s work concerning how the normalization, which takes place in society, simultaneously works as a way to create differences among people and is an effect of a relationship between people and technology, is also introduced (Moser, 2003, 2005). Another area of interest comes from studies which focus on children and adults with disabilities and technology (e.g. work by Lindstrand, 2002; Brodin & Lindstrand, 2003, 2004, 2007; Gardelli, 2004). Additionally, from science and technology studies, I draw upon work done concerning Actor–Network Theory (ANT). More specifically, I ask how can one conduct research without starting from dichotomies of humans and non-humans separately but rather work with humans and non-humans as constituting a hybrid collective. ANT is also valuable when exploring agency since it [agency] is something which is not solely located in a body but rather in relation to humans and non-humans and which gets materialized in practices. Inspirational scholars are: Callon, 1980, 1986a, 1986b; Law, 1986, 1992; Latour, 1988, 1999; Singleton, 1993, 1998; Singleton & Michael, 1993; Elovaara, 2004; Moser, 2003, 2005, 2006. I also consider that feminist studies can contribute with knowledge to both disability studies and science and technology studies. I present how knowledge and science have been debated in feminist studies, including feminist critiques of gender and science. I introduce Haraway’s (1991) concept of situated knowledge, which enables finding ways for being accountable for one’s research. Additionally, I present feminist studies of the relation of gender and technology. Finally, the relationship between body, dis/ability, subjectivity and agency is explored. Here I draw upon work from: Callon & Rabeharisola, 1998; Moser, 2003, 2005; Gardelli, 2004. The focal point from this work is that bodies, dis/ability, subjectivity and agency are performed in relation to humans and non-humans.
2.4 Special School

As a way to introduce the reader to a background to the special school this part of the thesis presents a short historical overview of how the special school has evolved. The main focus in this part is on how the school system works in Sweden today.

Historically pupils in special schools used to attend schools at the same institutional places where they also lived (cf. Areschough, 2000:3). Szönyi (2005:35-36) presents how the public opinion during the 1950s got an overview picture of the conditions at the institutions. It took until 1968 when the 1967 Act on special services for some mentally retarded was implemented that all intellectually disabled got legal right to education (Tideman, 2000:104; Szönyi, 2005:33). During the 1970s the special school came to be locally integrated with the regular compulsory school (Szönyi, 2005:36). Moreover, in the 1990s the municipalities came to take over the responsibilities for the special school from the county councils (Tideman, 2000:45; Szönyi, 2005:37). Part of the reason for the shift of responsibility had to do e.g. with the enabling of integration but also due to administrative and economical reasons (Tideman, 2000:45).

Today’s compulsory special school includes pupils who either belong to the compulsory school for pupils with learning disabilities or to the training school (Tideman, 2000:45; Skolverket, 2005, 2008c). Pupils who attend special school have compared to pupils in regular compulsory school a possibility to choose besides the compulsory 9th year an additional 10th year (Skolverket, 2005). The compulsory school for pupils with learning disabilities includes pupils with mild intellectual disability and they have almost the same subjects as the pupils in the regular compulsory school (Tideman, 2000:45; Skolverket, 2005). These are: art, English, home and consumer studies, physical education and health, mathematics, mother tongue, music, science studies, social studies, crafts, Swedish and Swedish as a second language (Skolverket, 2008c). The outline of the subjects is made more individual compared to the arrangements for pupils in regular compulsory schools. The pupils in the training school have due to their disability difficulties in assimilating the education given in the compulsory school for pupils with learning disabilities. Some of the pupils in these forms of schooling have besides their intellectual disabilities additional disabilities such as e.g. motoric, visual or hearing.

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4 The concept of special school is commonly referred to special schools for pupils who are deaf or hearing-impaired, pupils with language disabilities and who have multiple disabilities while pupils with intellectual disabilities are referred to as attending a special program for pupils with learning disabilities (Skolverket, 2005; Skolverket, 2007). However, the use of the concept of special school (as being used in the thesis) focuses on pupils with intellectually disabilities. It additionally works as an umbrella term for pupils: in the compulsory school for pupils with learning disabilities, in the training school and in upper secondary school for pupils with learning disabilities. For an overall picture of the types of school see Skolverket, 2005. The concept of special school (as being used in this thesis) can be translated in Swedish as särskolan including both the compulsory forms as well as the upper secondary form.
5 The 1967 Act on special services for some mentally retarded is in Swedish Omsorgslagen.
6 Compulsory school for pupils with learning disabilities is in Swedish grundskolan.
7 Training school is in Swedish träningsskolan.
The curriculum in the training school focuses on five areas of education: artistic activities, communication, motor skills (activity), daily activities and reality understanding (Skolverket, 2008c). The subject communication aims to develop the pupil’s ways to communicate while the artistic activity focuses on ways e.g. to express oneself in various ways (Skolverket, 2008c). The Swedish National Agency for Education presents the artistic subject in the following way: “The aesthetic subject area aims at creating pleasure and inspiration in creating, communicating and expressing oneself in different ways, using different materials, both individually and in groups” (Skolverket, 2008c). Motor activity includes ways e.g. for enabling communication with others and to participate in daily activities and it is a subject which takes into consideration pupils’ physical, mental and social abilities (Skolverket, 2008c). The daily activities subject focuses e.g. on ways to develop knowledge about oneself as well as oneself in relationships to others (Skolverket, 2008c). This is a way to enable independent ways to act and to develop knowledge of making plans (Skolverket, 2008c). Reality understanding focuses as Skolverket states on the following:

“The subject area aims at developing strategies and providing tools for handling daily existence. Experiences and social contacts should develop knowledge of the surrounding world and provide the conditions for developing independence and the ability to reflect, value and make choices.” (Skolverket, 2008c)

There exists a special form of education in the special school called individual integration (Tideman, 2000:46). This integration is available to pupils registered in the special school but who attend the regular compulsory school or the upper secondary school (Tideman, 2000:46). They are able to follow the special school curriculum while attending the regular school (Tideman, 2000:46).

The special school additionally includes pupils who have difficulties to attend regular upper secondary (Skolverket, 2005). They attend upper secondary school for pupils with learning disabilities8 (Skolverket, 2005). This form of school is non-compulsory. Upper secondary school also has various options for pupils with intellectual disabilities; the pupil can choose between attending national, specially designed or individual programmes (Skolverket, 2005). Pupils attending any of these alternatives in upper secondary school attend it for four years and the pupils have core- and program-specific subjects (Skolverket, 2005). The national programmes have 8 programmes which the pupils can choose among (Skolverket, 2008c). The Swedish National Agency for Education presents the individual programme as an alternative for pupils who cannot or do not wish to attend the national programme (Skolverket, 2008d). It can additionally be a way for preparing pupils to later on continue to national or specially designed programmes (Skolverket, 2008d). These programmes are also a way to meet the individual needs of the pupil (e.g. by focusing on limited numbers of subjects or part of subjects which the pupil can make use of) (Skolverket, 2008d).

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8 Upper secondary school for pupils with learning disabilities is in Swedish gymnasiesärskolan.
The Swedish National Agency for Education presents in a report that the amount of pupils within the compulsory special school has increased strikingly since the early 1990s (Skolverket, 2006:9). There additionally were differences between the amounts of pupils between various municipalities (Skolverket, 2006:19-20). One explanation might be that the municipalities have taken over the responsibilities for the special school from the county councils (Skolverket, 2006:5). The shift in responsibility happened during the same time as deteriorations in the municipalities’ economies as well as implementations of reforms in the care area and legislative changes in the disability area (Tideman, 2000:18). According to the Swedish National Agency for Education the differences between the amounts of pupils in the municipalities might have to do with differences in resource allocation systems and in the investigative procedures (Skolverket, 2006:5). Tideman argues that economic reasons, the lack of resources in the compulsory school and a growing interest in biological models of explanation might explain partly why the amount of pupils increases in special school (Tideman, 2000:19). Another explanation to the increase of pupils in special school might have to do with access to a higher quality of statistics (Skolverket, 2006:14). More specifically, previously a pupil registered in special school but attending compulsory school was not seen in the statistics as pupils in special school (Skolverket, 2006:14). This has changed and led to an increased amount of pupils in the statistics. Lack of investigative procedures concerning which pupils that should have access to special schools also meant that some pupils were registered in special schools despite that they did not have the right to special schools (Skolverket, 2006:15). There also exist economic reasons such as increased amount of money if the school has a pupil which is registered in special school integrated in the regular school (Skolverket, 2006:16). This might also explain the increase of pupils. Other reasons for an increased amount of pupils in special schools might have to do with changes in the grading system, a changed curriculum and increased demands on the schools for pupils to reach the goals (Skolverket, 2000:5).

According to a more recent publication by the National Board of Health and Welfare the amount of pupils in compulsory special schools has decreased after the school year 2004/2005 while the amount in upper secondary special schools has increased (Socialstyrelsen, 2008:23). The Swedish National Agency for Education outlines the decrease of pupils in the compulsory special schools (Skolverket, 2008a). During the school year 2007/2008 about 13884 pupils attended compulsory special schools compared with 14390 pupils during the school year 2006/2007 (Skolverket, 2008a). The reason for this decrease might according to Erson at the Swedish National Agency for Education be due to a decrease of the overall amount of pupils within all these ages. The regular compulsory school also experience decreases in the amount of pupils.

9 The National Board of Health and Welfare is in Swedish Socialstyrelsen.
10 Stefan Erson; Director of Education at the Swedish National Agency for Education, email communication 2008-04-23.
Erson additionally says:

“It is however important to separate between the amount of pupils in the compulsory special school and the amount of pupils who attend this type of school. The amount of pupils in the compulsory special school compared with all pupils in the compulsory special school and [regular] compulsory school has not changed since the previous years.” [My translation]

2.5 Disability and ICT

When studying the history of technology and disabilities it becomes obvious that it dates long back in time and that it follows the societal development. A precursor to the wheelchair has been found in Egypt and it dates to around 2500 years BC (Lorentzon, 2000:165). It was a sledge, which was drawn on the ground. It then took until the 1700th century when carts with wheels were used and this in turn made it possible for the user to move on her/his own way. However, it was not until the late 1900th and 2000th century that technology became more used for disabled persons. The focus in society on disability and technology has continued during the years, an example of this is the Swedish government, which in 1996 gave the Handikappinstitutet the mission to create an IT-program with the aim to create possibilities when it comes to acting and prioritizations concerning IT for disabled and older people (Lundman & Vessman, 1997:5).

Sweden is, as Ahl and Backman (2002:1) present in their evaluation, well represented when dealing with research, around technical aids, at its universities and colleges. But at the same time research about ICT and disability/handicap is neglected since the research in this area mostly has focused on developmental work (Ahl & Backman, 2002:1). Many researchers are of the opinion that computers are of importance for pupils and youths with disability, e.g. Brodin and Lindstrand. They argue that technology in various ways can affect the disability (Brodin & Lindstrand, 2003:53). More specifically, they state: “For children and youths the technology often is about a tool for play and communication as well as a tool for support in the school work” (Brodin & Lindstrand, 2003:53, my translation). According to Brodin and Lindstrand (2003:71) not many pedagogical programs exist when the children leave preschool. They furthermore highlight that parents experience a lack of programs suitable for their children in the transitions between the various stages in school (Brodin & Lindstrand, 2003:71). Another issue which is presented is that often children/youths with disabilities are stressed as one of the groups which will benefit the most by using ICT (Brodin & Lindstrand, 2007:65). Literature concerning disability and ICT among pupils (e.g. Pedersen, 1998:44-48) often seems to concentrate on pupils with dyslexia and programmes which might diminish the difficulties.

* My word in brackets.

11 In 1999, Handikappinstitutet changed name to Hjälpmedelsinstitutet. For more info see Hjälpmedelsinstitutet (2008). Hjälpmedelsinstitutet is in English the Swedish Institute of Assistive Technology (SIAT).
Brodin and Lindstrand (2007) additionally introduce that ICT is problematic. They argue that among parents and teachers there exists a huge need of knowledge concerning technology and ways to use it (Brodin & Lindstrand, 2007:65). This need does additionally influence the ways to work with children with disabilities who are a heterogeneous group (Brodin & Lindstrand, 2007:65). The ways to use the technology needs to be adapted to the individual, which becomes problematic if one does not know how to do it.

Gardelli has in her PhD project focused on adults with disabilities. She explored whether the use of ICT influenced the disabled persons’ ways to participate in society and if so in what way (Gardelli, 2004:5). She additionally studied under which conditions the participants incorporated ICT in everyday life, etc. She found out that the use of ICT partially was a way for the persons in the study “…to be someone, to tell, to be seen, to mean something for someone else, to be important and to have a task…” (Gardelli, 2004:220, my translation). She additionally found that ICT influenced the participants’ self-image. Her study further showed that it was not primarily disability but rather “…technological problems around aids, economical causes, absence of support, problems with authorities and to have enough of time in everyday life as disabled…” which influenced whether the participants continued to be a user or gave up being a user of ICT (Gardelli, 2004:223, my translation).

In 2005 the Swedish Institute of Assistive Technology12 published a report about the programme IT i Praktiken (ITiP), which had at its overall aim “…to demonstrate how IT can be of help for people with various disabilities by presenting practical applications and developing new products, services and methods” (Tjäder, 2005:3, my translation). Brundell (2006:12) further presents in her study that there exist differences (among the participants in the study) between people with disabilities (82%) compared with people without disabilities (86%) regarding access to computers. There are additionally differences when it comes to access to the Internet. 79% of the people without disability had access compared to 73% with disabilities (Brundell, 2006:17). There seems to exist, a digital divide between the groups (Brundell, 2006:19). Andersson (2003:6, my translation) explains the concept of digital divide in the following way: “Digital divide in this report refers to those differences that exist among various groups of citizens when it comes to the possibility to obtain and profit from information via the Internet.” She (2003:6) continues and presents disability, age, gender, income/education/occupation, geographic abode and ethnic background as forms of the digital divides. Andersson (2003:12) presents two hindrances for people with disability around the use of the Internet, namely one’s work and position in the society and inaccessible designed web pages.

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12 The Swedish Institute of Assistive Technology, SIAT, is in Swedish Hjälpmedelsinstitutet.
2.6 A Computerized School

In this part the intention is to introduce how the Swedish education system has been going through various phases when it comes to the introduction of computers. I present that computers have a history within the school system. Additionally some figures of access/use of computers in special schools in Sweden are presented. Finally the reader is given an introduction to the evaluation of the project IT in school\(^{13}\), which had as one of its missions to develop the competence among teachers around ICT from 1999 until 2001 (Alexandersson, Hurtig & Söderlund, 2004:5).

Computers are not a new phenomenon in society. It dates back to the Second World War when the first computerized machines were constructed for military purposes as well as for administrative tasks (Vehviläinen, 1997b:3). It took until the 1960s before the use of computers became wider. Johansson (1997) presents the history of computers in Sweden in his thesis “Smart, Fast and Beautiful: On Rhetoric of Technology and Computing Discourse in Sweden 1955-1995”. According to him the computers during the years 1946-1955 were mainly used as a calculating machine (Johansson, 1997:29). During 1955-1976 computers were seen as a way to rationalize administrative tasks (Johansson, 1997:31). In the years of 1976-1990 computers came to be characterized as more available to the Swedish citizens (Johansson, 1997:32). During 1990 and onwards the computers came to be seen as a communicative tool (Johansson, 1997:33).

Similarly computers and information technology within schools are not a new phenomenon. According to Riis (2000:9) computers and information technology have been part of the schools for almost 30 years. Riis explores the history around the computers and information technology. As part of that she introduces how in the end of the 1960s a motion which highlighted the need for introduction of computer in the schools was introduced at the parliament (Riis, 2000:9). In the 1980 curriculum for the compulsory school, studies of computers came to be part of the curriculum for mathematic in upper level of compulsory school (Riis, 2000:10). In 1984 it was decided that all pupils during their upper level of compulsory school should have access to 80 hours education in computer (Riis, 2000:10-11). A new project was conducted during the 1988/89-1990/91 (Riis, 2000:12). This project was conducted on 3 different levels (Riis, 2000:12-13). Firstly, on a national level, a group of experts worked and developed pedagogical software. On a more regional level, software was developed and it also had as its aim to influence the development within teachers’ education. On another level, at around 160 local school developmental projects, teachers worked with e.g. developing programs or adapting already existing programs and testing them on their pupils.

Since 1994 various projects have been established. For instance, the Swedish National Agency for Education got a mission to develop and be responsible for a Swedish school computer network and also to participate in the work around the development of a Nordic school computer network (Riis, 2000:16).

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\(^{13}\) IT in school is in Swedish IT i skolan (ITiS).
The same year the Knowledge Foundation\textsuperscript{14}, was set up. During the fall of 1994 it announced that it would invest around one billion Swedish crowns in the project IT in school (Riis, 2000:16). The project was abbreviated ITiS. ITiS had a mission of developing the competence among teachers around ICT from 1999 until 2001 (Alexandersson, Hurtig & Söderlund, 2004:5). 60,000 teachers participated and got access to an own computer and email (Alexandersson, Hurtig & Söderlund, 2004:5). Additionally the ITiS project had as its aim to improve the schools’ access to the Internet, e-mail addresses to all teachers and pupils, support for developing both the Swedish computer network and special efforts for pupils with disabilities (Ahl & Backman, 2002:1-2; Alexandersson, Hurtig & Söderlund, 2004:5). Teachers and teams working with pupils with disabilities got extra education during 2000 and 2001 (Ahl & Backman, 2002:1).

The Swedish National Agency for Education conducted statistical studies about access to computers in schools in 1993, 1995, 1997, 1999 and 2001 (Skolverket, 2001:1). The statistics concerning the numbers of computers used for teaching in special schools ran by municipalities or county councils showed that in 2001, 3082 computers were used in education and each computer was used by 3,4 pupils (Skolverket, 2001:19). 66% of the computers also had access to the Internet while 34% were connected to local networks (Skolverket, 2001:19). Between 1999 and 2001 the amount of computers for teachers’ use increased in special schools with 88% (Skolverket, 2001:7). This increase had connections with the investment of ITiS (Skolverket, 2001:7).

As shown computers are not a new phenomenon in the Swedish schools. Various forms of investments have been done in the schools to expand the use and access to computers among teachers as well as among the pupils. Special investments have also been done among pupils within special schools and their teachers. When it comes to the use of computers it varies from being a pedagogical tool to a tool for word processing among other things. Alexandersson, Hurtig and Söderlund (2004:5-6) present that ICT in the compulsory school often is used as a pedagogical tool, for instance, searching on the Internet, writing texts, producing illustrations by the use of multimedia programs. Ahl and Backman (2002:2) conducted an evaluation of ITiS by using methods such as questionnaires, interviews and study visits. They sent out questionnaires to teams working in schools, to staff which was hired to be resource personnel during ITiS and to teachers in the area of special school and special needs participating at a conference in 2002 (Ahl & Backman, 2002:3). The interviews were conducted with school heads and finally the evaluators made study visits to three schools (Ahl & Backman, 2002:3-4). From the questionnaires with the teams the evaluators found out for instance: that the teams valued the supervision from the resource personal very much, the computers were mostly used as a tool for writing and using pedagogical programs and the team was of the opinion that technical problems were the most difficult part in the use of computers (Ahl & Backman, 2002:16-17).

\textsuperscript{14} The Knowledge Foundation is in Swedish Stiftelsen för kunskaps- och kompetensutveckling (KK-stiftelsen).
From the questionnaires sent to the resource personnel the evaluators found out: that most of the resource personnel saw themselves as computer teachers, two thirds of them were men, the use of pictures was most frequently used in the project, the recourse personnel were of the opinion that the technology worked satisfactorily and they did not express any negative effects of the use of computers (Ahl & Backman, 2002:24). The interviews with the school heads highlighted that the ITiS project had been a form of an important start up for the use of computers at the schools (Ahl & Backman, 2002:25). The school heads also highlighted the use of computers for communication (Ahl & Backman, 2002:26). Ahl & Backman (2002:26) additionally found out that the education of teachers was also seen as important among the school heads. Finally, Ahl and Backman (2002:27, my translation) state: “The headmasters at the special schools express a stronger wish for technological support and gladly a computer technician that also has knowledge of computer pedagogy since special schools use special and complicated programs and pedagogical supervision is needed.”

As been presented above, ICT includes simultaneously, possibilities and hindrances when relating it to disability. Brodin and Lindstrand express for instance: “Computers and ICT may be the solution to support development in children in need of special support if the technology is used as an integrating tool in preschools and schools” (Brodin & Lindstrand, 2004:144). They present that ICT can support communication as well as be a mediator for things which are not present, a link between parents and school, etc (Brodin & Lindstrand, 2004:144). However, they do also stress the need for teachers to adjust the expectations of the children in a sound way as well as accepting that all kids are not interested in computers.

**2.7 Access to and Use of Computers in Everyday Life**

In this part I present through the use of statistics how the overall situation of computers and mobile phones for Swedish pupils and youths is.

During 2008 the Swedish Media Council\(^\text{15}\) conducted a study about children’s and youth’s everyday life with media and experiences of various instances of media (e.g. TV, computer and TV-game and the Internet) (Medierådet, 2008). The study included 2000 parents where the focus was on how they regarded their children’s/youths’ use of media (Medierådet, 2008:5). The part of the study sent out to children and youths consisted of a quantitative questionnaire which was sent to 2000 participants. 1000 participants were between 9 to 12 years old and 1000 were in the age of 12-16 (Medierådet, 2008:5). The study showed that that 48% of the participants had a computer, with/without the Internet in their rooms (Medierådet, 2008:21). Among the boys 53% had access to computers in their own rooms while the figure among girls was 44% (Medierådet, 2008:21). The report additionally presented that 87% of the participants have their own mobile phones (Medierådet, 2008:22). The use of mobile phones mostly was around sending text messages and calling (Medierådet, 2008:22). There existed differences between the use among girls and boys.

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\(^{15}\) The Swedish Media Council is in Swedish Medierådet.
The report states: “The girls state to a significantly higher proportion that they send text messages, multi-media messages and take pictures with the mobile phone compared with the boys” (Medierådet, 2008:23, my translation).

Statistics Sweden (SCB, 2005:49) presented a report which showed that in 2002/03 41% among boys and 27% among girls had their own computer. However it was more common for girls to have their own mobile phone, 78% of the girls had their own phone compared with the boys, 73% (SCB, 2005:49).

When the participants in the Swedish Media Council’s study were asked what they like to do when being online 73% of the participants in the study said chatting, 65% said playing games, 21% emailing, 34% for homework and studies (Medierådet, 2008:36). Another finding from the report by the Swedish Media Council dealt with what kind of games the pupils mostly like to play. It turned out that SIMs (both SIMs and SIMs 2) and World of Warcraft were the most popular (Medierådet, 2008:34). The Sims is according to Johnson and Toiskallio (2005) a form of single-player game where the user has the possibility to set up virtual characters and change their careers for instance. Today this game can be used with mobile phones (Medierådet, 2008:34). World of Warcraft is a form of computer role-playing game on the Internet where the players are connected to the same server meaning that the game can be played simultaneously by several players (Medierådet, 2008:34).

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16 Statistics Sweden is in Swedish Statistiska centralbyrån (SCB).
PART TWO – RESEARCH STANDPOINTS

3 Standpoints

In this part I will introduce some of the underlying theoretical standpoints which I aim to disentangle the research questions with. The standpoints to be introduced are: disability, actor-network theory (ANT), feminist studies of knowledge and science, feminist studies and gender and technology and body, dis/ability, subjectivity and agency.

3.1 Standpoint # 1 Disability

The Beam - By Elizabeth Mosely

As the mightiest river
Can grow from a trickle
So we, on our own so small and
insignificant,
So hesitant and unsure,
Combined can conceive, design and fashion
A magnificent dream.
A dream for the future,
Whose pulse is strong and sure,
Whose heart is true and valiant;
A light for all the world to see.
We are waiting
Waiting to release
The beam,
The energy,
The force that is within us.

The above poem by Mosely (2008) includes much of my view about disability. Firstly, it includes how people with disability argue for a view of disability where the personal meets the surrounding environment. Furthermore, it also includes a view where by using the personal, the beam and the energy, which Moseley writes about, the political effects (gendering, disabling and technological) as part of various practices also can be altered. So, in this part of the thesis I will specify and exemplify what I mean with disability.

When conducting literature reviews about disability it seems that there are two traditions of disability studies, one located in Britain and the other in the United States (Barnes, Oliver & Barton, 2002). Shakespeare (2004:8) even claims that there also exists a Nordic form of disability studies which is close to the British one.
While different schools or traditions of disability studies exist there are also resemblances between the traditions in the way that they grew out of the close connection between the academia and activists. For instance, the British disability studies have its origin within the UK disability movement, the Union of the Physically Impaired Against Segregation (UPIAS). In 1976 UPIAS defined disability as something that grew out of the relationship between people with impairment and the surrounding environment and as such the social model was born (Oliver, 1996:33). UPIAS explained disability in the following way:

“In our view, it is society which disables physically impaired people. Disability is something imposed on top of our impairments by the way we are unnecessarily isolated and excluded from full participation in society. Disabled people are therefore an oppressed group in society.” (UPIAS, 1976:14)

Another co-existent aspect can be found in the two traditions’ (UK and US based) view of disability. In the UK it originated in strong response to what usually is called the medical model or to use Oliver’s (1996:31) term, the individual model of disability. The individual model can be seen as regarding disability as a personal tragedy and also include medical and psychological viewpoints of disability (Oliver, 1996:31). Oliver (1996:34) presents the differences between the individual and the social model with the following figure:

<table>
<thead>
<tr>
<th>The individual model</th>
<th>The social model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal tragedy theory</td>
<td>Social oppression theory</td>
</tr>
<tr>
<td>Personal problem</td>
<td>Social problem</td>
</tr>
<tr>
<td>Individual treatment</td>
<td>Social action</td>
</tr>
<tr>
<td>Medicalisation</td>
<td>Self-help</td>
</tr>
<tr>
<td>Professional dominance</td>
<td>Individual and collective responsibility</td>
</tr>
<tr>
<td>Expertise</td>
<td>Experience</td>
</tr>
<tr>
<td>Adjustment</td>
<td>Affirmation</td>
</tr>
<tr>
<td>Individual identity</td>
<td>Collective identity</td>
</tr>
<tr>
<td>Prejudice</td>
<td>Discrimination</td>
</tr>
<tr>
<td>Attitudes</td>
<td>Behaviour</td>
</tr>
<tr>
<td>Care</td>
<td>Rights</td>
</tr>
<tr>
<td>Control</td>
<td>Choice</td>
</tr>
<tr>
<td>Policy</td>
<td>Politics</td>
</tr>
<tr>
<td>Individual adaptation</td>
<td>Social change</td>
</tr>
</tbody>
</table>

**Figure 1.**

Thus as the figure presents, the individual model focuses much on disability as existing and located within an individual, and at the same time also regards the causes to be medical or psychological limitations (Oliver, 1996:32). The social model on the other hand explains disability as coming into existence by the surrounding environment (Oliver, 1996:32).
While in its early days being in close connection with Marxism and historical materialism, the social model has been developed and today includes issues dealing with difference and culture (Thomas, 2002:48). An example of work following the tradition of difference is Morris’ (1996:1-16) research, which argues for the inclusion of gender issues to disability studies, as well as the inclusion of disability issues to feminist studies. The inclusion of gender is explored by various scholars and concerns various issues. Some of them focus on intellectually disabled women and sex (McCarthy, 2000), race and disability (O’Connor, Fisher & Robinson, 2000), intellectually disabled women and identity (Barron, 2004), obesity and its relation to the social model of disability (Harjunen, 2004), studies of mothers with intellectual disabilities (Traustadóttir & Sigurjónsdóttir, 2004), the relationship between gender and disability (Traustadóttir & Kristiansen, 2004), and gender and oppressive discourses on disability (Reinikainen, 2007).

Another field of study is the relationship between culture and disability which is highlighted in the work of Shakespeare (1999). His analysis of representations of disability on film can be seen as an example of this research focusing on how cultural systems in addition to the traditional disabling barriers are defined by the social model. Shakespeare (1997:224) and Corker (1998:39) are of the opinion that the materialist view of disability tends to miss out culture, loses human agency and that it additionally is deterministic. Another development following in the line of language, culture and difference is the post-modern view of the social construction of our world and as such also disability (e.g. Price & Shildrick, 1998). Proponents who argue for the inclusion of this theoretical tradition reject the modernist thought of the separation between e.g. body and mind, the cultural from the economic and impairment from disability (Thomas, 2002:49). Instead the previously mentioned concepts are seen as interwoven (Thomas, 2002:49).

Shakespeare (2006:2) has criticised the social model for neglecting medical problems and differences and limitations with the body. He argues in his book “Disability Rights and Wrongs” (Shakespeare, 2006) for alternative ways to examine disability. He says:

“Disability results from the interplay of individual and contextual factors. In other words, people are disabled by society and by their bodies.” (Shakespeare, 2006:2)

He states that the model is easier to use in political and theoretical work while more difficult to apply in everyday life since it is difficult in everyday life to draw boundaries between impairment and disability (Shakespeare, 2006:36). Shakespeare additionally regards impairments and disability as relational rather than as dichotomous, he says: “By relational, I mean that the disability is a relationship between intrinsic factors (impairment, etc.) and extrinsic factors (environments, support systems, oppression, etc.)” (Shakespeare, 2006:57).

The disability studies in the Nordic countries follow closely the development in the UK (Shakespeare, 2004:8). An example of this can be found in the use of language, such as the concept of handicap. The term handicap dates back to the 1600th century when it was used in some sort of betting system (Redaktionskommittén, 1981:7).
The person who placed a bet put their lot in a cap and thereafter a judge decided who
the winner was. The winner in his/her turn put the “hand in cap” and from that the
term was founded (Redaktionskommittén, 1981:7). During the 1800th century the term
was introduced in the sports world and then mostly as a way to reach a state of
equilibrium for the persons that competed against each other (Förhammar, 1991:19).
After the Second World War the term was changed from being something primarily
connected to sports and came to be linked more and more to disabilities (Förhammar,
1991:19). In 1965 a Swedish handicap committee was set up and in its final report,
“Kultur åt alla”, (SOU 1976:20) the first definition of handicap as something closely
linked to environment was found. Holme means that the publication of this report led
to a replacement of the word handicapped to the word disabled (Holme, 2000:70). For
her the replacement meant that first of all, people who had disabilities should be
regarded as people, secondly handicapped and finally handicapped due to situational
things (Holme, 2000:70).

In 1980 the World Health Organization (WHO) published its “International
Classification of Impairments, Disabilities, and Handicaps: A manual of classification relating to
the consequences of disease”, (ICIDH), (World Health Organization, 1980). The WHO
(1980:30) separated the concept of handicap into three sub definitions: impairment,
disability and handicap. The definition developed out of discussions over a long time
between scholars from different countries as well as from diverse disciplines (Holme,
instance, made a comparison between the WHO’s definition and the Swedish
definition of handicap. Further development in Sweden changed the view of handicap.
For instance, from the mid 1990s to early 2000 the laws in Sweden have been revised
in order to improve the lives of disabled people. For instance, in the 1990s Sweden got
a new law- Act (1993:387) concerning Support and Service for Persons with Certain Functional
Impairments” (Socialstyrelsen, 2006a). This law has lead to increased possibilities for
people with disabilities to affect their lives.

The World Health Organization (2001) has continued with its work around disability
and health and developed an international classification for exploring various areas
around health called “International Classification of Functioning, Disability and Health: ICF”. It states:

“ICF has moved away from being a “consequences of disease” classification (1980
version) to become a “components of health” classification. “Components of health”
identifies the constituents of health, whereas “consequences” focuses on the impacts of
diseases or other health conditions that may follow as a result.” (World Health
Organization, 2001:4)

Thus, the classification does according to the World Health Organization (2001:8-10)
not focus on classifying people; rather it aims to describe the situation each person
experience in various health areas.

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17 Act (1993:387) Concerning Support and Service for Persons with Certain Functional Impairments is in
Swedish Lag (1993:387) om stöd och service till visa funktionshindrade, LSS.
The definition focuses on areas such as bodily functions, bodily structures, impairments, activity, participation, activity limitations, participation restrictions and environmental factors (World Health Organization, 2001:10).

Gustavsson, Tossebro and Traustadóttir (2005:23) introduce Nordic disability studies as having links to the Nordic states aim to provide people with disability with aids and various services. They present the Nordic disability research in the following way:

“However, Nordic disability research began to develop as early as the 1960s, mainly in Sweden, but later in Norway and also in Finland, Denmark and Iceland. The emergence and development of disability research was, and partly still is, closely linked to the welfare state: to disability services and service systems, to new programmes and social reforms.” (Gustavsson, Tossebro & Traustadóttir, 2005:23)

The same authors present that in the mid 1990s the Nordic disability research started to explore new areas besides the research focusing on normalisation, integration and deinstitutionalisation (Gustavsson, Tossebro & Traustadóttir, 2005:29). Some of them focus on: cultural representations, deconstruction of social reforms, construction and reconstruction of identity, disability discourse, etc. (Gustavsson, Tossebro & Traustadóttir, 2005:30).

Another way to present disability studies, more specifically Swedish disability research is provided by the National Board of Health and Welfare (Socialstyrelsen, 2006b) which presents it as a discipline which elaborates issues around communication, education, democracy/justice, housing, accessibility. The agency further introduces that it is a research area characterized by an interdisciplinary approach, drawing upon knowledge from medicine, technology, behavioural, social and cultural sciences (Socialstyrelsen, 2006b).

When I started up my PhD studies I focused on the issue of people with disabilities in relation to people without disabilities, based on issues such as disabled vs. non-disabled and had a perspective of disability based on it being something located within the disabled person’s body. After some time when I was conducting my second empirical study I shifted focus, from how people with disability are disabled towards considering how people with disability become constructed as disabled by various practitioners (for instance by teachers, policy-makers and researchers as well as in relations to technology). Thus, disabled became something, which comes into existence as effects of relations. Moreover, after reading Shakespeare (2006) I came to see disability and impairment as existing in relation to one another. Thus, people with disabilities become disabled sometimes by their bodies as well as by the surrounding society.

Another scope of interest was for the inclusion of difference, thus, people with disability are sometimes seen as a group based on disability. I became interested in ways to include difference when talking about disability. Thus, despite sharing the effects of processes of disability which unites people as similar difference co-exist. However, at the same time as being interested in differences I am also interested in exploring similarities.
In order to follow differences and similarities simultaneously I explored the construction of disability from a view of disability as part of relations between humans and non-humans. Remember the example from the introduction of how a person with the use of Braille at a keyboard at a public terminal can have a form of access to the information society.

3.2 Standpoint # 2 Actor-Network Theory - ANT

In this part I introduce the way Actor-Network Theory18 (ANT) forms part of the underlying theoretical standpoint of the thesis. I give the reader an overall picture of some underlying principles of the approach. Continuing on from that some applications of ANT are introduced. I additionally give an account of how ANT is linked to my research. Finally some of the critiques of ANT are presented.

ANT is an approach, which developed out of the discipline of sociology of science and technology (Law, 1992:381), with contributions from scholars like Callon (1980, 1986a, 1986b), Latour (1983, 1987, 1988, 1999, 2005) and Law (1986, 1992). An early advocate of ANT, Callon (1986a) presents the approach in a text from 1986. He says: “The object of this paper is to present an outline of what is now called sociology of translation and to show that this analytical framework is particularly well adapted to the study of the role played by science and technology in structuring power relationships” (Callon, 1986a:197). For Callon (1986a:197-198), the sociologists’ way of explaining science and technology means that they grant themselves with a specific form of privilege, which in turn contributes to three main difficulties. The first difficulty is found in the way that the sociologists censor the scientists and engineers in their talks about social matters. For Callon, this censoring means that the sociology grants itself as a discipline with a privileged form of knowledge that resides over the natural science (Callon, 1986a:198). The second difficulty concerns theoretical matters. As Callon (1986a:198-199) stresses, there are also disagreements among sociologists concerning which ways to explain things. Callon states: “The theoretical difficulty is the following: from the moment one accepts that both social and natural sciences are equally uncertain, ambiguous, and disputable, it is no longer possible to have them playing different roles in the analysis” (Callon, 1986a:199). The third difficulty is more methodological. According to Callon, this difficulty means that the sociologists in their exploring of the scientific and technological innovations have realized that as part of the development of the controversies, the identity and the importance of various actors are at issue (Callon, 1986a:199). Callon states: “The observer who disregards these uncertainties risks writing a slanted story which ignores the fact that the identities of actors are problematic” (Callon, 1986a:199).

In order to avoid the previously mentioned difficulties, the advocates for ANT suggest the use of three methodological rules; agnosticism, generalized symmetry and free association (Callon, 1986a:200).

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18 The presentation of ANT is a simplification. It is an approach that has developed in various ways since its beginning in late 1970s and has been applied within various disciplines. Suggestion for reading is Elovaara (2004) who in her thesis presents an elaborated picture of ANT and its development. Another book, which gives a view of the concepts and underlying principles, is Latour’s book from 2005.
Singleton and Michael define these three principles in the following way: “The actor-network perspective rests on three tenets: generalized agnosticism – analytic impartiality as to whatever actors are involved in controversy; generalized symmetry – the use of an abstract and neutral vocabulary to understand the conflicting viewpoints of actors; and free association – the repudiation of a priori distinctions between the social and the natural or the technological” (Singleton & Michael, 1993:228-229).

The principle of free association means that the researcher must abandon a priori boundary that separates between nature and society (Callon, 1986a:196). According to the advocates for ANT, the boundary between nature and society is not the point of departure for the analysis but might be a result of the analysis (Callon, 1986a:201). The role of the researcher is thus to enable a presentation of how nature and society simultaneously are part of the problem under investigation. The work done by Law (1986) concerning the Portuguese expansion during the fifteenth and sixteenth century is an example of how the researcher by abandoning the boundaries between technology, nature and society can in her/his analysis present how all of these elements simultaneously contributes to the whole project of expansion. This abandoning leads to the principle of generalized agnosticism which means that the researcher in her/his investigation should not privilege social sciences over natural science nor censor the ways that the actors talk about themselves or the social world (Callon, 1986a:200). Thus, for the advocates of ANT, it is important when analysing to not construct barriers between social and natural but rather to be able to bring the social and natural together. Latour’s text about the work of Pasteur on the development of the anthrax vaccine is an example for how the principle of generalized agnosticism is used in ANT (Latour, 1988). Latour does not privilege the development of the vaccine by focusing on either the natural or the social sciences but rather shows that Pasteur was as much a social scientist as he was a natural scientist because of the way he included e.g. himself, the public hygiene movement, the microbes, etc. in the search for the vaccine (Latour, 1988). As a way of opening up the possibility to talk about the controversies as a mixture of considerations concerning both society and nature without re (constructing) boundaries between them, ANT uses the principle of the generalized symmetry -a form of neutral vocabulary. According to Callon and Latour this form of vocabulary allows the researcher to rely on a neutral vocabulary which further enables her/him to see that it is not purely social aspects or purely technological aspects, which influence the outcome of the phenomena under study (Callon & Latour, 1992). Consequently, in order for the observer of the controversies to speak about the phenomenon under study, without re (constructing) dualisms such as society/nature, micro/macro, human/non-human, etc., the advocates for ANT, have developed a specific vocabulary. In order to talk about the concept of actors and their interests, ANT uses the concept of actor-network, which according to Callon, Law and Rip is:

“Hence the term actor-network, for the actor is both the network and a point therein. It should also be noted that each point entity that is enrolled in an actor-network depends on its capacity to translate other actor-network (q.v.). A simplified entity that is nevertheless also a network in its own right.” (Callon, Law & Rip, 1986:xvi)
Callon explores the notion of actor-network in his study of the VEL (véhicule électrique), the French project to build an electric car by presenting how both humans (social movements, consumers, ministries) and non-humans (accumulators, fuel cells, electrodes, electrons, catalysts) become part of the project (Callon, 1986b:21-22). According to Callon all of these entities form an actor-world which: “…defines their [the entities’] identity, the roles they should play, the nature of the bonds that unite them, their respective sizes and the history in which they participate” (Callon, 1986b:24). Thus, the system under study is seen as consisting of actors that form as well as perform the systems. The actor-world is thus a process rather than a structure.

Agency and structure are for advocates of ANT not causes of dualism such as individual/society, human/non-human but rather consequences of their relations to each other (cf. Law, 1999). Implied in this is the central idea of relational materiality, which according to Law is an idea whereby entities take their shape as effects of their relationship with other entities (Law, 1999:3-4). The idea of relational materiality also breaks away from essential dualisms and, through that, shifts the focus from the differences between, for instance, humans and non-humans, as effects of relations to other entities, instead of arguing that the differences are found in some form of inherent qualities (Law, 1999:3-4). Thus, society is a mixture between humans and non-humans which creates a network of heterogeneity (Law, 1992:381). Law argues:

“It [ANT] says that there is no reason to assume, a priori, that either objects or people in general determine the character of social change or stability. To be sure, in particular cases, social relations may shape machines, or machine relations shape their social counterparts.” (Law, 1992:383)

However, proponents of ANT argue that divisions exist as effects or outcomes of relations (Law, 1999:3). Implied in the whole ANT approach is the principle that every actor acts and all entities perform.

3.2.1 Application of Actor-Network Theory

As mentioned earlier, one of the scholars who have applied ANT in her work is Vicky Singleton. In her thesis “Science, Women and Ambivalence: An actor-network analysis of the Cervical Screening Programme” she explores: “…the relationship between medical science and women” (Singleton, 1993:Abstract). In her work she relates the UK Cervical Screening Programme (CSP), to ANT and feminist studies of science (Singleton, 1993:Abstract). The CSP is seen as a network consisting of various actors, for example the government, women, general practitioners, the laboratory, cervical cells, and lay participants. One argument presented by Singleton (1993) in her thesis is to allow for fluctuation between stability and instability when telling ANT stories.

* My word in brackets.
* My word in brackets.
This is expanded in an article by Singleton and Michael (1993:228) which: “...aims to provide a modest elaboration of the actor-network approach - specifically in relation to some of the issues that arise when ‘indeterminacy’, ambivalence and multiplicity are injected into the actor-network analysis.”

As a way to contribute to an elaboration Singleton and Michael (1993) present how actors within a programme such as the UK CSP contribute to stability and consistency as well as ambiguity and messiness, and that these aspects are also what makes the programme sustainable. They say: “Moreover, this ambiguity suggests not only the possibility of fractures in the various associations, it can also sustain the network” (Singleton & Michael, 1993:228). The focus is on actors which play a part in the existence of the CSP. In their analysis of the CSP they rely on an analysis of policy documents dealing with the programme (Singleton & Michael, 1993). By exploring the policy document starting from 1966 they present how the history of the CSP is given in the document as well as how it contributes to defining various actors and their roles (Singleton & Michael, 1993). Some of these are according to Singleton and Michael (1993:235): “…hospital pathology laboratories, local health authorities, general practitioners, women, local authority and voluntary clinics and health visitors and midwives.” The women according to Singleton and Michael are playing a part as “consumers and recipients” (Singleton & Michael, 1993:236). Singleton and Michael say (1993:236): “Thus ‘woman’ is defined as a ‘consumer’, coming forward to her General Practitioner or local clinic to take up the offer of a CST [Cervical Smear Test].” As recipients the women are supposed to be encouraged to participate in the programme by the use of public advertisement as well as by being approached by various medical staff (general practitioners, nurses, etc.) (Singleton & Michael, 1993:236). Another actor is the laboratories who act as “diagnosticians” and as such they are supposed to detect cytological changes in its various forms (Singleton & Michael, 1993:236-237). For Singleton and Michael the general practitioners also play a vital part in the programme. The general practitioners according to Singleton and Michael (1993:238) play a part of being “persuaders and providers”. As such they are supposed to persuade women to undergo the test as well as being providers of the services of the smear test.

Singleton (1998:90) gives a further presentation of the CSP and how stability and continuity interact with controversy and instability in a text from 1998. In this text Singleton (1998:86) focuses on the role of the laboratory as an actor in the programme. For her the laboratory has a rigid role as well as consisting of instabilities. She says: “The central argument that is developed below is that an established, stabilized practice does not require stable and unequivocal entities as its constituents” (Singleton, 1998:86). Singleton gives an overall story of the history of CSP and presents the ambivalent picture around the programme. An example of the ambivalence concerns how some argues that is a good tool for detecting cancer while other sees the programme as malfunctioning (Singleton, 1998:90). She presents how the smear test analysis according to staff in the laboratory consists of instability mainly when dealing with report cards, samples, cell changes, recommendations, differences between and within women as well as the earlier experience of the screener (Singleton, 1998:91).

* My words in brackets.
According to Singleton the instability is something to be valued: “Moreover, I suggest that
the ambivalence of the laboratory is to be seen as a necessity and an inevitability, rather than as a
source of threat and breakdown of the CSP” (Singleton, 1998:100). She additionally says:

“In turn, laboratory discourse suggests that the ability of the laboratory to detect
precancerous cytological changes depends upon its ability to accommodate instability and
ambiguity. It seems that only by allowing and accommodating instability at the level of
the practice of its role does the laboratory manage to maintain stability at the level of the
CSP.” (Singleton, 1998:103)

After presenting the overall history of the CSP she relates it to the concept of actor-
network as used within ANT. According to Singleton:

“It is possible to conceptualize the CSP as an actor-network and to consider how it is
the result of the British government’s defining and associating a diversity of
heterogeneous entities to construct a particular process - a network of relations.
Importantly, the entities that are defined and juxtaposed are not just human or social
actors. The government also defines and positions nonhuman entities in particular
ways.” (Singleton, 1998:90)

Pirjo Elovaara is another scholar who draws on ANT and its later development Actor-
Network Theory and After (ANT(a)), in her research. She focuses on how various
actors, e.g. librarians, government bills, web-developers and project participants in their
everyday interact with information technology (IT), (Elovaara, 2004:17). In her thesis
she presents a detailed picture of the development of ANT towards ANT(a) (Elovaara,
2004:35-65). Elovaara additionally outlines in her thesis how IT gets its life in an
interaction involving humans and non-humans and that it gets shaped in different
spaces (Elovaara, 2004:13). One of the arguments presented by Elovaara is that IT is
both a social construction and a process (Elovaara, 2004:99). Elovaara (2004:99)
additionally considers that by exploring IT from that perspective it becomes possible to
move away from IT as deterministic. Elovaara also highlights how important it is to also
talk about different forms of IT and for her this is possible by situatedness (Elovaara,
2004:110). This is explained in the following way:

“I wish to emphasise the situational approach, as I believe that as a researcher it is not
possible to work in a ‘place of nowhere’ or to be an innocent viewer. What I wish to
achieve by situating information technology is an understanding of IT as doing,
something that is carried out in a physical place and by a physical person. As a result, it
becomes clear that there is not just one information technology, but many and different
information technologies.” (Elovaara, 2004:110)

ANT is for Elovaara further interesting since it moves beyond identifying actors.
Instead it highlights relations (e.g. processes) between actors (Elovaara, 2004:165).
She says:

“The main concern of ANT-informed research has been to follow how processes and projects, understood as networks, are stabilised while the relations between the heterogeneous actors are constructed as every single actor is enrolled in the network. ANT provides methodologies to explore how seemingly stable networks are always a result of local and situated circumstances.” (Elovaara, 2004:165)

From Singleton and Elovaara’s research I am interested in various topics. Firstly, I think that both Singleton and Elovaara’s work are inspirational due to their focus on interactions between humans and non-humans and the processes these interactions create. Singleton’s and Elovaara’s work bears resemblance by their focus on how programmes such as the CSP and IT get their life in interactions involving humans and non-humans and how they get shaped in different spaces. My work concerning the practice of (ICT), among pupils in special schools resembles both Singleton and Elovaara’s work. Especially since I, like them, am interested in exploring how a practice like ICT in schools consist of relationships between teachers, as well as other pupils, computers.

Following Singleton and Elovaara I am additionally interested in moving away from starting up research from the perspective of dichotomies such as disabled/non-disabled. For Elovaara, ANT opens up the possibility to talk about differences without relying on dichotomies or pre-existing categories. Remember how she refers to John Law and his concern about the relational aspects and says: “If there are such things as class, gender or various structures in the world, they are effects of network relations” (Elovaara, 2001:101). By starting from this perspective one becomes enabled to explore how the uses of ICT among pupils in special schools are effects of network relations (bills, teachers, families, etc.). These effects contribute to the ways the pupils becomes similar as well as different from users without any disabilities. Thus the network relations, to use Singleton’s word, construct the stability as well as the instability of the pupils’ use of ICT.

Additionally, I also consider Singleton and Elovaara’s works as examples of ANT’s way of dealing with politics. As Elovaara presents (see above) gender for instance is an effect of network relations. I agree with her, because based on reading Bill 2004/05:175, the access of technology in the Swedish setting focuses much on the rhetoric that all citizens should have equal access to ICT. It is stated as important that all citizens get the same access and are not being discriminated against differences based on e.g. gender, disability, ethnicity and class with regard to ICT. Based on such politics, one could argue that all citizens should have the same access. However, that means that the citizens are categorized in various groups based on gender, disability, ethnicity and class. And as such they are seen as having the same wish of access. Thus, it is rarely seen in the ‘should have the same access’ argument how people have different wishes, belong to various networks despite being seen as belonging to same categories. The citizen’s agency and subjectivity runs the risk of being lost in such politics.

19 See Singleton (1996) for her work around the suggestion of working with discourses around things could be different.
A citizen is being ruled over by the politicians and her/his individual wishes about technology, access and everyday lives are not taken into consideration. The relational aspect additionally becomes lost. On the other hand, a policy that starts by saying all citizens ‘could have the same access’ might contribute that the citizens have an agency and subjectivity which is taken into consideration. Thus, the access becomes negotiable and is e.g. not valued as better or worse from the outset. It is rather so that the access is dependent on the citizen’s wishes, and not based from the outset on her/him being categorized as having disabilities, belonging to a certain class or ethnic group. Thus, from this viewpoint disability and access are issues that come into existence in relation to other actors rather than being preset categories. Thus, processes among and between actors and their constructions of e.g. disability are still important to take into consideration in order to offer access to e.g. ICT. But it additionally means that it is not bad from the start to be disabled or having limited access. Singleton’s research is also vital here because if one starts from how stability and instability are part of a statement, all citizens could have the same access. Then it is also possible to include that in such a statement instability interacts closely with stability.

Finally, I value Singleton and Elovaara’s work as important when it comes to agency. For instance, they show by their research that agency is not something which is solely located in a human body. Rather, agency arises in relations to humans and non-humans and becomes materialized in practices. Remember Law’s statement concerning the ANT approach to explore agency:

“But it [ANT] insists that social agents are never located in bodies and bodies alone, but rather that an actor is an patterned network of heterogeneous relations, or an effect produced by such a network. The argument is that thinking, acting, writing, loving, earning- all the attributes that we normally ascribe to human beings are generated in networks that pass through and ramify both within and beyond the body.” (Law, 1992:384)

By considering that agency arises between humans and non-humans and becomes materialized in practices, it becomes possible to explore how use of ICT among intellectual disabled is a process of bodies interacting with other human and non-human actors. This is also a way to explore how disabilities, access and use between dis/abled users influence the user’s agency. Moreover, by starting out by exploring how ICT is an entity which gets constructed and becomes part of processes among various actors, one is enabled to explore what ICT comes to be concerning agency in the pupils’ everyday life. Consequently, by not starting out from the aspect of someone being something but from someone becoming something, it is possible to capture agency among both human and non-human actors that work disabling and enabling.

20 Compare with Singleton (1996).
* My word in brackets.
I agree with Moser when she says:

“A body becomes an able body through the enabling material practices it is involved in. Equally, a body becomes a disabled body through the disabling material practices in which it is involved.” (Moser, 2003:64)

3.2.2 Cracks in the Facade?

In the 1990s some of the tensions around ANT were raised (Fujimura, 1991; Star, 1991; Collins & Yearley, 1992; Haraway, 1997).

Firstly, the three underlying principles, generalized agnosticism, generalized symmetry and free association, which were explained by Callon’s texts about the conservation strategy of scallops in St Brieuc Bay (Callon, 1986a), the French attempts to develop an electric vehicle (Callon, 1986b), and Pasteur’s work around developing the anthrax vaccine (Latour, 1988) have been opposed in various ways. Collins and Yearley raised critical voices against ANT for being descriptive and non-political. They say: “The French actor-network model is philosophically radical, but when we ask for its use, it turns out to be essentially conservative- a poverty of method making it subservient to a prosaic view of science and technology” (Collins & Yearley, 1992:323). Feminists have also highlighted that the non-separation also brings some problems with it. As they have shown in their work the western world is built up around dichotomies of nature/culture, body/mind and male/female, etc. and they argue for the need to deconstruct these (Merchant, 1989). Other feminist scholars like Fujimura, argue that built into the deconstructing of dualism lays the question of how to take a stand (Fujimura, 1991). Fujimura thus claims: “That is, while Callon and Latour might be philosophically correct about the constructed nature of the science-society dichotomy (who represents nonhumans versus who represents humans), the consequences of that construction are important” (Fujimura, 1991:222). Fujimura (1991:222) continues and says:

“I want to examine the practices, activities, concerns, and trajectories of all the different participants-including nonhumans-in scientific work. In contrast to Latour, I am still sociologically interested in understanding why and how some human perspectives win over others in the construction of technologies and truths, why and how some actors will go along with the will of other actors, and why and how some human actors resist being enrolled.”

She continues and expresses: “As an analyst acting-not just observing-in the world, I want to take sides, to take stands” (Fujimura, 1991:223). So, Fujimura is critical of ANT, because for her, like other feminists, the world is build up around dichotomies e.g. oppressed versus oppressor. Dichotomies are dealt with in another way in ANT since they are not seen as pre-existing categories but rather as coming into existence by being in relation to each other. This does in turn lead us to Fujimura’s problem of how to take a stand, because if dualism comes into existence by being in relation to each other, the researcher can not decide beforehand which actors to follow.
As Singleton (1996) shows, in her work around the politics of ANT, the political work that can be done in ANT implies a shift from making political claims that things should be different, towards the claim that things could be different. Law (1992) says that underlying the ANT approach is that one does not start out with explaining for instance power. Instead he suggests:

“For instance, we might start with interaction and assume that interaction is all that there is. Then we might ask how some kinds of interactions more or less succeed in stabilizing and reproducing themselves; how is it that they overcome resistance and seem to become “macrosocial”; how is it that they seem to generate the effects such as power, fame, size, scope, or organization with which we are all familiar.” (Law, 1992:380)

Law continues and says: “For actor-network theory is all about power- power as a (concealed or misrepresented) effect, rather than power as a set of causes” (Law, 1992:387).

Other feminists have also raised some critique of the early ANT work. For, Star (1991:26) and Haraway (1997:34) the early ANT work were mainly on male heroes, big projects and issues around organization. Haraway is concerned with Latour’s work which she sees as being about the construction of Pasteur as a male hero. Star raises additional critique of Latour and Callon for not including the voices of those who are marginalized and excluded, and she considers ANT to be focusing on managerial issues (Star, 1991:26,29). Star exemplifies her critique with Latour’s focus on Pasteur’s work in which she claims that Latour misses out the hidden work done by the work of laboratory technicians, secretaries (Star, 1991:29). The issue of excluded voices has been explored by Moser (2003, 2005, 2006). In her work she has focused on people becoming disabled after traffic road accidents and how disability becomes lived in everyday life. However, Star’s critique is fair from the political perspective that Latour and Callon do not highlight issues around gender in their work. But, the invisible work from this perspective is in turn highlighted by Singleton’s and Singleton and Michael’s works around the UK Cervical Screening Programme (Singleton, 1993, Singleton, 1998; Singleton & Michael, 1993). In her work Singleton (1993) is aware of the power asymmetries that exist, and as such she focuses on how both humans (laboratory staff, women, medical practitioners) and non-humans (medical technologies, the cervical cell) are part of the construction of the cervical screening programme. Compared to the earliest work within ANT, Singleton focuses upon how things such as CSP are stable and durable while at the same time consisting of various forms of instabilities and controversies (Singleton, 1998). As Wajcman expresses, Singleton and Michael explore: “…the choice of a routine, mundane technology as opposed to heroic technoscience” (Wajcman, 2000:455).

In this part I set out to introduce ANT by presenting some of its history and its underlying principles and concepts. Following this I presented some scholarly work that draws upon ANT, gave an account of how ANT is linked to my research and finally some criticism of the approach was presented.
In this part the intention is to present a brief genealogy of feminist studies and feminist critiques of gender and science.

Knowledge and science have during the last thirty years been examined from different angles by feminist scholars. One scholar who has contributed to this work is the philosopher Sandra Harding. In the book “The Science Question in Feminism” Harding presents her concern that the feminist critique of science is a conflicting field (Harding, 1986:19). Additionally, she proposes that to change this, feminists should move away from dealing with questions of women in science and instead focus on scientific questions in feminism (Harding, 1986:29). Harding places feminist critique of science in a context concerning gender. She then presents the first research programme, the “equity studies” (Harding, 1986:21). For her these studies concern how women have been discriminated within e.g. education and work both historically and contemporarily (Harding, 1986:21). A study which can be seen to capture aspects from this approach is Fox’s examination of gender issues in engineering and science programmes at graduate level (Fox, 1998:201). I agree with Harding’s concerns regarding these programmes, especially her questioning if an increased number of women in science will change science (Harding, 1986:21).

Kessler’s research concerning intersexed infants and how medical experts through their practices construct gender (Kessler, 2001:161) can be seen as an example of the second programme. For Harding these “…studies of the uses and abuses of biology, the social sciences and their technologies…” oppose that science legitimises e.g. sexist, racist and homophobic research (Harding, 1986:21).

Following this, “…the critiques of biology and the social sciences…” (Harding, 1986:22) are unfurled. These programmes concern e.g. that science is patriarchal and not objective since it is e.g. men who select and define what is important to research (Harding, 1986:22). An example is Martin’s (1996) work concerning how the representation of the biology of the egg and the sperm in textbooks stereotypes gender. Martin exemplifies this for instance with the view of the female egg as passive at the same time as the sperm is active (Martin, 1996:106). Harding (1986:22-23) argues that the whole research process is value laden. According to Harding, selection and definition in science will always be in the interests of those with power (Harding, 1986:22). I agree with this critique, and as MacKenzie’s research concerning nuclear missile testing shows, technical facts are not isolated from politics (MacKenzie, 1999:356).

Harding then presents “…techniques of literary criticism, historical interpretation, and psychoanalysis…” (Harding, 1986:23). Schiebinger’s (1996) text about how Carl von Linné through his construction of terminology legitimised divisions can be seen as an example of these programmes. Schiebinger (1996:148) says: “Linnaeus’s term Mammalia helped legitimize the sexual division of labour in European society by emphasizing how natural it was for females-both human and non-human-to suckle and rear their own offspring.”

21 For a similar presentation see Moser (2003).
According to Harding, advocates for these programmes argue that by reading science as a text it becomes possible to disclose scientists’ values (Harding, 1986:23). Harding questions the value e.g. of these historical readings for today’s scientists (Harding, 1986:24). I claim that this critique is valid and that it is supported by Bratteteig and Verne who raise similar questions towards the use of this approach in their research field, informatics (Bratteteig & Verne, 2000:43).

Additionally, Harding argues for the importance to find epistemology programmes that can alter the understanding of how to gain knowledge (Harding, 1986:24). Consequently, she continues to display the epistemologies and begins with the “feminist empiricism” (Harding, 1986:24). Harding claims that the proponents of this approach suggest that more women and stricter use of the existing methodologies will alter science (Harding, 1986:24-25). According to Harding, these proposals are also what make this epistemology problematic (Harding, 1986:24-25). Then “the feminist standpoint” is introduced (Harding, 1986:26). According to Harding, advocates for this epistemology claim that women’s subjugated experiences imply that their knowledge provides them with the possibility of having a more complex understanding compared to men (Harding, 1986:26). Longino (1996:268) highlights difficulties with the epistemology. She says: “If no single standpoint is privileged, then either the standpoint theorist must embrace multiple and incompatible knowledge positions or offer some means of transforming or integrating multiple perspectives into one” (Longino, 1996:268). As an advocate for this epistemology, Harding has in later texts paid attention to this form of critique (Harding, 1996:242-243). Finally, “feminist postmodernism” is presented (Harding, 1986:27). It is presented how its advocates question the whole concept of universalism and that is also why she regards it as problematic (Harding, 1986:27-28). Butler opposes this sort of critique by arguing that it is not possible with a universal basis because women are different and experience different kinds of oppressions. She says: “The notion of a universal patriarchy has been widely criticized in recent years for its failure to account for the workings of gender oppression in the concrete cultural contexts in which it exists” (Butler, 1999:6).

From my experience of doing feminist research from the perspective of pupils with disabilities, concerned with their relation to ICT and professional practices as well as text documents, I strive to follow Harding’s suggestion to deal with the science question in feminism by using Haraway’s situated knowledge (Haraway, 1991:183-201). This form of knowledge implies a standpoint which is always political as well as ethical. The concept additionally stresses the relation between the researcher and her/his objects of knowledge. Moreover, Haraway argues that some sort of alternative feminist objectivity is needed in order to exchange knowledge (Haraway, 1991:190). For her this objectivity: “… is about limited location and situated knowledge, not about transcendence and splitting of subject and object” (Haraway, 1991:190). Consequently, I argue that one can use situated knowledge since it gives room for various differences and still keeps in touch with the material reality. In conclusion, my suggestion is to use situated knowledge since this will enable it to explore knowledge in a way which gives room for various differences as well as keeping in touch with the material reality.
3.4 Standpoint # 4 Feminist Studies and Gender and Technology

“Technology is part of our culture; and, of course, our culture, which is male dominated, has developed technologies that reinforce male supremacy.”
(Hubbard, 1983:vii)

“By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs. The cyborg is our ontology; it gives us our politics.”
(Haraway, 1985:66)

“The examples I discuss, taken from the media of everyday life (newspapers, advertisements, television programs, magazines), signal ways in which the “natural” body has been dramatically refashioned through the application of new technologies of corporeality.”
(Balsamo, 1996:5)

These quotes illustrate that technology is gendered. They present feminist positions concerning the relationship between bodies and technologies. The quotes are important for me since they have all shaped my own feminist research and my location within these positions.

Like Singleton (1996), I consider that the theoretical and political commitments in research are strongly interwoven. This interweaving of theoretical and political aspects also affects how we as researchers choose to study gender, body and technology. Thus, political work and knowledge production go hand in hand. From my experience of doing feminist research focusing on disabled pupils’ access and use of ICT in relation to human and non-human practices, I consider the feminist positions concerning the relationship between gender, bodies and technology as having importance for us today. In today’s society there is a strong rhetoric that says that ICT should be equally available to all. At the same time everyday practices show something different: the access and use of ICT differ due to societal differences such as disability, gender and age, etc. The argument of equal access does not take into account the relationship between gender, body and technology strongly because it locates the inequality within individual users rather than within a societal, cultural and technological context. In order to challenge this we need tools and I suggest that feminists have the necessary tools to do this. Thus, in this part I make an attempt to locate my own research within the feminist tradition. I present an introduction to the feminist positions about the relationship between gender, body and technology, and then I locate my research within this framework. Although my empirical research is conducted entirely in Sweden, my theoretical starting point is within Anglo-American feminist research.

22 Parts of this text have been published in Näslund (2003).
The feminist positions about the relationship between gender, body and technology can be seen as dating back to the early liberal feminists. An example is Mary Wollstonecraft, who focused upon issues of gender, knowledge and rationality (McNeil, 1987:15-16). The political implication of this liberal approach was for women to challenge male rationality by entering the same fields as men. Adam (1997:18) stresses that advocates for this approach regard e.g. technology in itself as neutral. In order to reach equality within science and engineering areas, the proponents of the liberal approach argue that a higher number of women is needed (Adam, 1997:18) and as Vehviläinen (1997a:12) puts it: “Women will gain equality only by going into (male) technology.” Gill and Grint (1995:7) regard this as a problem since men are seen as the norm that women need to follow in their relationship with technology. A difficulty with this approach is that it tends to see the individual and her/his choice as the problem, instead of regarding the relationship between gender, body and technology as part of the problem, and as such located in a social and cultural context. For Adam (1997:18) this approach tends to regard women as the faulty party since they are reluctant to enter technological areas.

In opposition to the liberal feminist approach, the eco-feminist approach appeared in the 1960s and 1970s debates about gender, body and technology. This approach raises critiques against the view that technology is neutral and that women are seen as the faulty party and as lacking knowledge. According to Gill and Grint (1995:4), advocates of this approach oppose technology, characterising it as a tool for men to “…try to dominate and control both nature and women.” An example of this approach is the Boston Women’s Health Book Collective (1971) which with their publication “Our Bodies, Ourselves” attacked the biological and medical science and healthcare system in the USA for being sexist and racist (Lykke, 1996:2). “Machina Ex Dea: Feminist Perspectives on Technology” (Rothschild, 1983) is another publication, which is in line with the eco-feminist approach: some of its contributors argue for a technology based on women’s values and rationality. Thus advocates for the eco-feminist approach look for a technology which is based on women’s own technology (Vehviläinen, 2000:21). For Gill and Grint (1995:5), eco-feminists argue that women are closer to nature due to biological matters and this: “…has led to a specific way of ‘knowing’ and experiencing the world, based on emotions, intuition and spirituality.” By turning back to nature they assign values to women, which other feminists have argued are grounds for oppression (Gill & Grint, 1995:5). Eco-feminism tends to become essentialist in the way it regards women’s knowledge, because as Vehviläinen (2000:22) argues: “Furthermore, there are differences among women and in women, and thus there cannot exist essential women’s knowledge, as eco-feminists claim.” Wajcman (2000:449–450) further emphasises that some feminist approaches opposed eco-feminists’ arguments of rejecting technology and arguing for a return to nature.

A shift in the feminist positions came during the later part of the 1980’s when there was a move away from the issue of gender and technologies as individual and biological issues towards seeing women’s relationship to technology as a result of social, historical and cultural constructions of technology (Gill & Grint, 1995:8; Vehviläinen, 1997a:13).
According to Henwood (2000:211): “These [advocates arguing for a more constructivist view of gender and technology] are less concerned with ‘getting women into’ technology than with understanding why and how women are so often excluded, why technology has come to be perceived as ‘masculine’, and how we are to understand and make sense of those that do enter technological education and occupations.” In contrast to the earlier approaches, the strength of this approach is that it aims to explore how masculinity and technology have historically been culturally connected (Gill & Grint, 1995:8). Wajcman’s research (1991, 2004) that focuses upon the relation between technology and gender represents this approach. Wajcman (1991:19) argues that a masculine culture interacts with a technological culture that is incompatible with being a woman. She says: “Therefore, to enter this world, to learn its language, women have first to forsake their femininity” (Wajcman 1991:19).

Various issues are dealt with within the technology as a cultural approach: some of the work by scholars working within this tradition has been on technology and desire (Stone, 1996), sexuality and gender within the media (Springer, 1996), the ways in which the Internet, cyberspace and virtual reality are intertwined with society and the individual (Turkle, 1995), and ways to create new meaning and categories (Haraway, 1985). Haraway has created her notion of the cyborg, which she regards as: “…a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction” (Haraway, 1985:65). For Haraway (1985:75) the notion of the cyborg is a way to question the concept of identities, differences, oppression and the body as well as giving feminists’ tools for debunking the myth of some kind of natural or unitary way. Additionally, Stone’s way of dealing with body and sexuality resembles Haraway’s in the sense that, for her, modern technology makes it possible to dispute traditional ways of looking at gender. For Stone: “In cyberspace the transgendered body is the natural body” (Stone, 1996:180). Gill and Grint (1995:12-16) stress that some of the critique of the technology as culture approach has focused on its tendency to sometimes neglect additional structures besides patriarchy, e.g. class, that need to be untangled in the relationship between gender and technology. However, this critique has been opposed by research conducted by Cockburn. Her research focuses upon how women’s exclusion from technology is a consequence of both gender and class hierarchies (Cockburn, 1999:178).

I would like to end by emphasising that, even though the feminist positions have different approaches, all of them argue for a united fight against oppression based on technological, gendered and bodily differences. My division of the positions as following a form of ideal type is a simplification: all of the positions overlap with each other and we can not easily say that any one of them has ceased to exist; rather I suggest that these varying approaches have evolved over time. I am indebted to the works of the eco-feminists and the liberal feminists for their important contributions to feminists working within the technology as culture approach.

* My words in brackets.
In my research, I try to map out how different cultural and social orders are intertwined with how pupils access and use ICT. I am also interested in exploring in what ways technology and bodies can be seen as acting within this network. The aim of my research is to study how ICT, agency and disability become constructed in a collective made up by actors such as humans (pupils with intellectual disabilities) and non-humans (computers, mobile phones, policy-documents). In pursuit of this aim, I have studied earlier feminist positions relating to gender, body and technology. When I started my research some years ago its focus was aspects of equal access and the use of information technology for people with disabilities. After reading feminist literature (Braidotti, 1994; Butler, 1999), I regarded disability as not the only thing that united the pupils. Instead it became important to regard the pupils as being constructed and constituted from aspects of differences (age, disability, gender). For me technology is linked to cultural and social expectations of a certain kind of access and use as well as with a certain kind of user in mind (not disabled or gendered), and as such technology cannot be treated as neutral. In line with other critiques towards the eco-feminist approach (Gill & Grint, 1995:5-6) I became critical of it regarding our bodies as biologically given. From my experience of working with pupils with disabilities I would argue that the relationship between their gender, body and technology is not always located in biological matters. The relationship between disabled and gendered bodies and technological use, for instance, is sometimes additionally constructed in the surrounding society, which makes them disabled in relation to their use of and access to technology.

After some literature reviews I read Haraway’s classical text about the cyborg (Haraway, 1985). For me the cyborg came to be as Haraway argues: “…a kind of disassembled and reassembled, post-modern collective and personal self” (Haraway, 1985:82). The notion of the cyborg was interesting in the way it enabled me to deconstruct the categories of access and use as well as users. As mentioned previously, for Haraway the cyborg is a way to break down the dichotomies of animal-human (organism) and machine (Haraway, 1985:69). I suggest that the concept of users as cyborgs is important because, from the moment when we start to regard users as cyborgs, we are also able to open up debates of different kinds of users. The cyborg is also important in research because it enables the opening up of the relationship between gender, bodies and technologies as something constantly negotiated and as such not static and fixed. I do not regard this as a utopian perspective because, as Braidotti (1994:108) claims, Haraway opens up the possibility of seeing difficulties with scientific rationality from both the perspectives of liberation and domination with the notion of the cyborg. Furthermore, it is important to incorporate the cyborg into future feminist positions about bodies and technology because it enables an opposition to the strong rhetoric in society about equal access and use. In fact, from reading Bill 2004/05:175, I consider that we will be able to use the notion of the cyborg to articulate the problems with the rhetoric in society about equal access and use. If we are all cyborgs and are therefore different as well as similar to each other, society needs to join us in the feminist struggle for a society where different technologies becomes available for different kinds of users.
3.5 Standpoint # 5 Body, Dis/ability, Subjectivity and Agency

All of the concepts of body, dis/ability, subjectivity and agency are to various extents part of disability studies, feminist studies as well as science and technology studies. My aim in this part is to present how some scholars regard them. Additionally I will present my relation to the concepts.

A scholar who has explored the relationship between technology and disability is Ingunn Brita Moser. She draws upon work from disability studies, women’s studies and feminist critiques of science and technology, science and technology studies, and feminist engagements with ANT (Moser, 2003:1-39). In her thesis “Road Traffic Accidents: The Ordering of Subjects, Bodies and Disability” she is interested: “…to learn something about disability (and indirectly, also about ability), as well as about bodies, machines, subjectivities, and their relations” (Moser, 2003:1). Moser explores from traffic accidents as a starting point, how one becomes disabled and how one lives disability. She is interested in everyday life and living disability in everyday life. A central issue in Moser’s work concerns subjectivity which she regards in the following way:

“Likewise, subjectivity, by which I understand a location of knowing, thinking and consciousness, is not seen as an inner essence but as a relational effect.117 It is shaped in particular ways and made possible in local material arrangements.” (Moser, 2003:31)

Moser additionally defines subjectivity as something that is not strictly bound to the human body and mind. It is rather built upon a principle of relationships between various kinds of actors, such as practices, technical aids, carers and policy documents (Moser, 2003:181). Examples of how subjectivity can work in practice are found in Moser’s work in various ways. An example of this is when Moser meets Jarle, a man in her study. He has an environmental control system and a computer. Moser refers to Jarle’s subjectivity in the following way: “…his subjectivity as well as his capacity to act, are made possible by and emerge in these embodied relations and arrangements” (Moser, 2005:672).

Moser is also interested in exploring as she says: “…the relations between subjectivities and their embodiments; bodily, machinic and material in the widest sense” (Moser, 2003:1). This is found throughout the thesis where she explores disability, bodies, technologies, subjectivities, asymmetries, the normal and natural, reflexivity and the politics of disability (Moser, 2003:2-4). She works with an amount of themes that are linked to her interest in the ordering of disability (Moser, 2003:4). These include e.g. normalisation, passion, and lack/fate (Moser, 2003).

Another scholar who has inspired me is Åsa Gardelli. She presents in her thesis the ways people with disabilities influence their everyday lives with ICT and the hindrance and possibilities, which are linked, to this.
Her study focuses on:

"...describing and analysing, and by that developing knowledge about, whether people with disabilities can influence their everyday lives with ICT as a tool. And if that is the case I want to examine in what ways they can do so and what this might mean for their lives." (Gardelli, 2004:4, my translation)

Gardelli’s study is based on an interdisciplinary approach i.e. by work from disability studies, pedagogy, psychology, sociology, health studies and technological studies. Gardelli has used multiple forms of methods, such as interviews, conversations with various actors (e.g. the participants, relatives, person of authority as places such as the Swedish Public Employment Service and the Swedish Social Insurance Agency who the participants had contact with), telephone calls, e-mail, observations, texts in various forms, videos and questionnaires (Gardelli, 2004:91-92).

Gardelli’s work shows how technology plays a role only when ICT becomes a useful tool (Gardelli, 2004). Other findings from her work focus on how the participants’ agency by the use of ICT has enabled it for them to influence their everyday lives, how their disabilities have changed and how some of them by using ICT have been able to study and acquire occupations (Gardelli, 2004:174-175). Finally, her findings also outlines that the participants have been able to influence e.g. their situation in society (Gardelli, 2004: 175).

Gardelli (2004:195) also presents that the technology, such as e-mails and web pages, has been part of the participants’ social interactions. The technology has additionally expanded the social networks (Gardelli, 2004:194). For some of the participants the technology enabled building up new relations, while it for some also was a way to be in contact with friends and relatives (Gardelli, 2004:194-195). Finally, Gardelli’s work presents the conditions that are of importance to be or not to be a user of ICT (Gardelli, 2004:212-213). She has found out among other things that changes in use have changed the way of being a user, technology and aids are of importance, and e-mail has additionally been of importance (Gardelli, 2004:212-213).

Callon and Rabeharisoa’s text from 1998 is also interesting due to its focus on the body as part of a hybrid collective. In the article, they aim to introduce the creation of the collective, the compromises that the collective and its members are prepared to make and through which the agency is formed and dispersed and finally they explore the setting up of communications between subjectivities and the world they get to know (Callon & Rabeharisoa, 1998:4).

As a way for them to present how the body is part of a hybrid collective they present a story of a patient returning home from hospital and how actors such as family members, physiotherapists, machines, and oxygen cylinders accompany the patient (Callon & Rabeharisoa, 1998:6-7). Thus, it is both humans and non-humans who circle about in the homecoming of the patient.

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23 Swedish Public Employment Service is in Swedish Arbetsförmedlingen.
24 The Swedish Social Insurance Agency is in Swedish Försäkringskassan.
The example of hybrid collectives is found in the presentation of how the home of the patient can be seen as a lengthening of a hospital. Equipment is needed, medical staff visits, etc. However as Callon and Rabeharisoa (1998:6-7) claim, despite similarities between the two places they are not replications. The presentation of the hybrid collectives bears resemblance with Moser’s work, for instance, in the way some of her participants’ subjectivities get constructed in relation to practices, technical aids, carers and policy documents (Moser, 2003:181).

Another example of the hybrid collective and its relation to the body is illustrated by the story of Laurent, a young man who has decided not to use tracheotomy as a way for him to prolong his life by enabling for ways to breath (Callon & Rabeharisoa, 1998:11). In that decision he, according to Callon and Rabeharisoa, also decides which collective to be part of. The example is also an illustration of different bodies. On one hand there is a body which is closely tied to medical equipment while on the other hand there is a body which is not connected to the device but which is closer to death than the one using the technical device (Callon & Rabeharisoa, 1998:11). These bodies additionally are connected to various figurations of collectives. By using the tracheotomy some of the parts of it are more close to technical equipment. The other choice relies on a collective that for instance consist of people suffering and visits at the hospital. Tracheotomy is additionally presented as not only being about the patient’s body but also about the collective body, and this device consists of both pro and cons. It is a medical intervention which eases breathing but at the same time restricts life for its users (Callon & Rabeharisoa, 1998:2). Callon and Rabeharisoa write: “In debates on the collective and in the propositions under discussion, the body is not reducible to an external reality about which the actors talk, and to a subject on which they eventually have to make decisions” (Callon & Rabeharisoa, 1998:15).

For Callon and Rabeharisoa the body also plays part in various forms of compromises around the use of tracheotomy (Callon & Rabeharisoa, 1998:17-20). According to them the collective-patient has to make choices (Callon & Rabeharisoa, 1998:20). Thus, in decisions regarding medical issues the person needs to investigate issues around whether to use technological devices or medicines and to relate the use to her or his autonomy (Callon & Rabeharisoa, 1998:18). The collective-patient additionally attributes other actors (e.g. machines, antibiotics) agency (Callon & Rabeharisoa, 1998:20).

Another issue dealt with in the article is of the investigation concerning the boundaries of the collective. The body plays an important part when it comes to the boundary of the collective (Callon & Rabeharisoa, 1998:9-10). As an illustration of this they present how the school of a pupil with Spinal Muscular Atrophy (SMA) in its way to adjust to the needs of the pupil is dependent on the body. Thus, in order for the pupil to have access for instance to the school canteen, the school needs to take the pupil’s abilities into consideration. Consequently, as Callon and Rabeharisoa (1998:10) argue, the body plays a vital part in the consistency of the parts in the hybrid collective. Callon and Rabeharisoa (1998:12) additionally highlight that when it comes to the shaping of the collectives the body plays a vital part.
They say: “The body is an essential part, for a particular collective implies a particular body, and a particular body implies a particular collective” (Callon & Rabeharisoa, 1998:12). A focal point is that the body is not more or less important than the collective which it is part of. An important issue that is discussed is how the bodies vary as much as the collectives they are part of shaping (Callon & Rabeharisoa, 1998:14). Callon and Rabeharisoa (1998:14) say: “Bodies as producing social links are as diversified as the collectives they contribute to shape.”

All of the previous mentioned scholars explore the concept of agency. Gardelli states agency to be about: “…actorship, discretionary power, to act and influence one’s life situation, more of empowerment and working power…” (Gardelli, 2004:153, my translation). One of Moser’s (2003:158) ways to define agency is the following:

”…agency is not a capability or property that belongs inherently in some exclusive human bodies. First, in addition to humans, many things act, and are attributed agency. And second, many things act together, as agency is made possible and emerges in practices and activities that precisely link many and heterogeneous actors and elements.”

For Callon and Rabeharisoa bodies, besides being part of the political, are also part of agencies. They state: “Yet the body, central in the political articulation of the collective, is also a key element in the configuration of agencies” (Callon & Rabeharisoa, 1998:17). They additionally say: “It [the body] is constantly constructed, overcome, abolished, remade and managed through practices, exercises and collective and individual trials” (Callon & Rabeharisoa, 1998:23).

I draw upon all the three scholars’ ways of regarding agency. For me Gardelli’s definition exemplifies how agency can be seen from a societal perspective. For instance, how the participants in her study have been able to influence their own life in relation to the surrounding society. She also presents how technology enables/hinders this. Gardelli’s definition has a connection to the human compared to non-human actors. Moser’s definition connects in a stronger way the human and non-human actors when dealing with agency. Thus, for Moser agency is not something that is solely found either in humans or non-humans, rather it is enacted in the encounter between human and non-human. Moser (2005:682-683) illustrates this by telling how Vidar (one of the participants in her study) goes downhill with his wheelchair and how in that performance his body interacts with technology so he safely gets down the hill. According to her this interaction is about control and agency. She says:

“What happens is that agency and control are moved, given away and allowed to flow between and across many elements and locations. Rather than being constituted as located and bounded in an individualized body and mind (or in a particular technology), they are enacted as heterogeneously embodied capacities, including, but not limited to, the body.” (Moser, 2005:683)

* My words in brackets.
Callon and Rabeharisoa’s (1998) way to relate to agency focuses mainly on how the body by being part of various practices, individual and collective trials, as well as by being an actor, is part of the constructions of agencies.

Thus, agency is valued for all scholars, but Moser, Callon and Rabeharisoa grant the relationship between human and non-humans as having stronger ways to interact with agency than Gardelli. I regard this as important since it enables it for one to see how agency is something which gets enacted in the encounter between individuals, collectives, policies, technologies, etc. This way of exploring agency enables it to move away from disability not solely located in an individual’s body but in a relationship between various elements. For instance, like Gardelli my opinion is that technology can simultaneously hinder as well as enable the possibilities to influence one’s own life in relation to a surrounding society. Like Moser, Callon and Rabeharisoa, I am of the opinion that agency is closely linked to various other actors besides technology and the individual’s body. Many elements contribute to how agency becomes enacted in everyday life.

Another concept that is important in my study is normalization. It is mainly Moser and Gardelli who explore the concept. According to Moser (2003) disability is ordered in specific ways. This does in a way resemble Gardelli’s work (2004) where she has included the aspect of how various processes influence whether one is disabled or not. For instance, Gardelli (2004:210-221) presents in her study that one’s body as well as relations to authorities influenced the possibilities to use ICT. She additionally presents by her work the issue around normalization as problematic, since it simultaneously works to include people with disability as well as constituting them as different (Gardelli, 2004). This is an aspect, which Moser also highlights concerning the politics of normalization. For her a politics, which is based on normalization and compensations, relies on disability as different (e.g. lack and deviance) as well as reproducing it as such (Moser, 2003:301). When dealing with normalization Moser traces what is happening with the disabled subject and the body when it is organised from the principle of normalization. She also explores how this is done in practice. In the process of normalization Moser (2003:144) argues that there are various forms of practices, which participate in the process of normalization. An interesting example of how normalization is found in everyday life is Moser’s description of how an electric wheelchair can be seen as a form of politics around disability in everyday life. Moser (2003:153) exemplifies it by saying: “It [an electric wheelchair] links the ordering and enactments of goals of disability policy to the enactments in everyday life.” For instance, Jarle, one of the participants in her study, uses an electric wheel chair. He drives around with the wheel chair, which is provided to him by the social security. His use can be seen, according to Moser (2003:151), as a way to compensate for his lack of ability to walk. Additionally the normality, which is produced in documents of disability policies, gets translated into bills and continues to various forms of public services as well as to participants in the area of technological aids. It is in this process that Moser (2003:153) considers that the wheelchair is a “…piece of disability policy…”

* My words in brackets.
Somehow the aim of including everyone into the policy of use for all relies on a principle of normalization. Most people would probably agree that everyone should be included in the concept of access and use for all. Additionally, most people would probably agree with the policy makers that specific aids need to be provided for people with disabilities in order to achieve these goals. However, one could ask, does everyone want to use and have access to ICT based on the argument that everyone should have the same access? How are differences and similarities to be included? What is implied in a concept such as user of ICT? How can one see people with disabilities as non-deviant and at the same time introduce bodies with differences? All of these questions are related to the concept of normalization in various ways. And, as a way to trace ways to research the use of ICT and its relation to pupils’ school practices and policy-documents, I value that Moser’s work might be a way to explore that access and use of ICT is a process of normalization. Her work is for me a way to open up how normalization is a process of making different and similar. Similarities exist between gender, ethnicity, class and disability but there are also differences, which co-exist. An example is that in Bill 2004/05:175 the differences which are included, focuses on the categories e.g. gender, ethnicity, class and disability. But the bill does not include the possibility of difference between people within the categories. It structures the categories as being about similar needs and efforts to be made.

Moreover, Moser presents how subjectivity is based on a principle of relationship between various forms of actors. This is also interesting when one explores use of ICT. Sometimes the society defines (perhaps unspokenly) that technological use is something which one does for one’s own sake and by oneself. This is an example of how the use is black-boxed. It also implies that a user in Swedish society, besides being a woman or a man is a non-disabled person, coming from middle class and having Swedish ethnicity. This additionally implies that difference is created. And if you are a user of technology that in your use interacts with a teacher or assistant you are a different user and at some occasions you are even seen as a non-user. At the same time there exist an argument that a user has the same needs and wishes for an ICT society. It is for instance, stated that disabled people need similar efforts in order to be a participant in ICT use.

Furthermore, issues of politics and the body are discussed by Callon and Rabeharisoa (1998:9-17). They present that the body is political in what they call (micro) public space (Callon & Rabeharisoa, 1998:14). This is exemplified by a patient’s discussion concerning how he can get help to have a bath. In this discussion, the hybrid collective as well as bodies of the patient and other people are negotiated (the need, the body of his wife to support him, technical equipment, etc.) (Callon & Rabeharisoa, 1998:15). Again this resembles Moser’s (2003) work, especially concerning how a wheelchair is political (constructing normality). It also bears similarities with Gardelli’s work regarding how technology such as computers has influenced the way some of her participants increased their social life (Gardelli, 2004). Thus, the participants, the computers and other people in the network contribute to an increased social life. For Callon & Rabeharisoa, Gardelli and Moser, the body, people and technology negotiate and contribute to making politics of for instance normalization, agency and subjectivity.
Other topics, which have inspired me from the work of Callon and Rabeharisoa, Gardelli and Moser concern: becoming disabled, ways to explore hindrances and possibilities concerning ICT and possibilities for change, boundaries and negotiations of hybrid collectives and everyday use of ICT.

Firstly, from Moser’s work which focuses on becoming disabled I’m interested in her argument that disability is not something one is but rather something one becomes. I regard this as an opening up for talking about intellectual disability and use of ICT as something which one becomes, rather than something being about intellectual disability and ICT use as being something. Being born with for instance Downs Syndrome is something which becomes a way of living rather than something which one is. A user of ICT is not something which one automatically is; rather it is something which one becomes when interacting with technology for instance computers. A focus on being a user of ICT from a starting point of intellectual disability compared to becoming a user of ICT from a starting point of intellectual disability enables it to include various and similar forms of users, and an opening up of what use is. The pupils in my study use ICT as a tool in their everyday life both in the school and outside school. In a way they do not need any special efforts to become users, they already are. At the same time they need technology to be adapted to their needs, which enables them to use it in a functional way.

Secondly, Gardelli is interested in finding ways of exploring the possibilities and hindrances, and the measures that are needed for a change. I am interested in ways to write about possibilities as existing in mutual ways, not as being about dichotomies. A possibility of a society for all implies possibilities for all but also hindrances at the same time. ICT is not only about something being either or rather either and. I do not have such a strong claim for change. I am interested in exploring how to include changes from a minor starting point. Perhaps to look at how ICT might enable mixture and unity more that it does today. Perhaps use can mean something more than sitting in front of the computer and writing. What about the people who in one way or another resist or who are not interested in being part of the ICT-society? One might say that no one can stay outside of the ICT-society. Why is that so? Might it be that their agency is not taken in consideration for how to be a participant in the ICT society for all?

Thirdly, Callon’s and Rabeharisoa’s work is for me an opening up to include the negotiations, which surround a hybrid collective. The ICT policy needs to negotiate with pupils in special schools if it will reach its goal of becoming a sustainable ICT society for all. The ICT policy is also of importance for the pupils in order to be able to get resources in their everyday schooldays so they can use ICT. Technology is also part of the network, which enables everyday use.

Fourthly, Callon’s and Rabeharisoa’s work concerning the boundaries of the collective is interesting. The body plays an important part when it comes to the boundary of the collective and the outer world (Callon & Rabeharisoa, 1998:10).
Thus, I am interested to explore how the body plays a vital part in the practices around ICT as well as the parts of the collective, for instance, to explore how some pupils rely on technology or/and teachers to cooperate with them during the school day.

Finally, there also exist additional similarities with Gardelli and Moser’s works and my project mostly regarding how technology (ICT in my study) is used in everyday life. I think that the interests in the participants’ use in our studies are a focal connection point. We are interested in a similar way in how people with disabilities are influencing their life with technology. But my starting point differs though, since it starts from everyday life in school and outside school based on being a pupil with disabilities.
4 Methods, Methodology and the Interdisciplinary Toolkit

Yes, there is goal and meaning in our path –
but it’s the way that is the labour’s worth. (McDuff, 2005)

The above line has meant a lot for me during the writing of this thesis. I have found it really valuable to bear in mind, especially in this part where I write about how the views and opinions that one as a researcher uses in the research are mutually shaped by previous experiences. For me there is a need to situate and locate my research by placing it in a context of how my previous experiences have contributed to the research; however, placing this in context has not been easy. Especially since the boundaries between previous experiences and the research every once in a while gets blurred. Besides locating and situating the research, this part introduces the underlying methodology – the research approach of the study. Furthermore, the researcher’s views and opinions of the world and ways to acquire knowledge about the world also contribute to the research methods and the way of analyzing the empirical findings. As such this chapter also outlines the research methods and the ways of analyzing the empirical material. It finally ends with an introduction to the ethical considerations which have been taken into account in the study.

4.1 The Research Settings – the Research Mountains

When doing research I have often returned to visual metaphors and/or popular literature. One of the metaphors is my view of the research settings as a chain of mountains. For instance, I saw the two Swedish Bills: Bill 1999/2000:86 and Bill 2004/05:175 as mountains that I climbed. I read their history which dates to Bill 1963:85. In the reading I focused on how the documents construct ICT as being about technological equipment: computers, cables and programs. But simultaneously the documents state that ICT is about the interaction between technology and humans, based on the argument that there is a form of technological potential which people should make use of to improve their competence and knowledge. Furthermore in my reading of Bill 1999/2000:86, a central theme was how ICT would interact with school practices. In my reading I was interested of how schools would: “…be provided with not only more technology but above all qualitative pedagogical tools, which offer good possibilities to, in accordance with the curricula’s overall aim develop teaching towards a more pupil-active way of working, which among other things strengthens the pupil’s ability to an own search for knowledge, critical valuation and own standpoints” (Bill 1999/2000:86:55, my translation). Another interest dealt with the statement:

“For the purpose of increasing the possibilities of schools to with the support of IT reach the stated goals of knowledge, the state should continue to give support to first of all pedagogical staff. The use of IT in the school puts new demands on the staff in the school.” (Bill 2004/05:175:108, my translation)

25 This is a translation of Karin Boye’s poem I Rörelse. The poem was written by Boye and published in 1927 in the collection “Härdana: dikter”

46
The other mountain I climbed was special schools for pupils with intellectual disabilities. This form of school in Sweden is part of the regular compulsory school and upper secondary school (Skolverket, 2005). Pupils who are unable to attend regular compulsory school and upper secondary school due to intellectual disabilities attend special schools for pupils with intellectual disabilities (Skolverket, 2008a). 22,577 pupils attended special schools for pupils with intellectual disabilities during the school year 2007/08 (Skolverket, 2008b). In my climbing I was interested in the access and use of ICT among pupils with intellectual disabilities in special schools. An additional focus was on how the pupils’ agency and subjectivity get co-constructed in the encounter between pupils, practices, technology and documents. Furthermore, an underlying interest was also based in a theoretical perspective of disability and technology based on an interest in opening up agency and subjectivity from a perspective of bringing together feminist studies, science and technology studies and disability studies rather than focusing on only one of the above perspectives.

When choosing the specific schools (Giga and Mega) to conduct my empirical study at, I thought of places where I had previously been/worked. Thus, very much like conducting a trip to the mountains, I planned to visit a familiar one. So, I got in contact with two teachers by calling them. After that we set up a date where I could come and visit their two classes. After some time I explored a need to explore another setting, another mountain, - a school, which I was not familiar with. So I contacted another teacher via telephone in another municipality in the region of Norrbotten, Sweden. After the first meeting we (each of the teachers and I) sat down and planned for future dates when I could come and visit the classes. At that time we also talked about the interviews I planned to conduct with them and some of the pupils. Furthermore, since I was interested in ways to find out how the teachers and pupils worked with the computers they were asked to video record some instances when they worked with the computers. The teachers at the schools forwarded information about my study to the parents, the pupils and to other members of staff. The pupils and their parents were given a letter with information about the study and a form of letter of consent. I also was in contact with the headmaster of the schools in order for them to know that I was doing research in the classes. This first encounter with the classes was conducted in the spring of 2002.

The second study was conducted during autumn 2003 and spring 2004 at the same schools, Giga and Mega, with the same teachers and three additional teachers. In this part the teachers and the headmaster were contacted in the same way. Furthermore, a letter was sent out to the pupils where they and their parents either gave or rejected consent. Later in research a more formal letter of consent was distributed to the pupils. A letter of consent was also distributed to the teachers and to the other members of staff at the school. In this study I followed the same procedure when collecting my empirical material. I interviewed the teachers, some of the pupils and observed the school day by participating in the activities during the day26.

26 The teachers were one of the main actors at the beginning of the study, but as time evolved I decided to leave their material out and instead return to it in the overall forthcoming PhD. However, in order to get a picture of the empirical studies I find it of importance to introduce that they are important actors in the study despite not being part in this thesis.
The studies were performed similarly. I was in contact with teachers, headmasters, other staff, pupils and parents in various phases. The methods used were also similar between the two studies, such that I used mostly interviews and field notes from the participant observations. But they also differed. For instance, during the first study I asked the teachers to video record some situations with the pupils where they used ICT. In the first study I also asked the teachers to answer a sheet containing questions about their work, etc. Finally, the teachers were also asked to write down positive experiences from their work by using ICT. In the second study, I was more interested in getting access to documents such as local policies like individual syllabus and the local school syllabus. The focus for both studies was to develop knowledge about the pupils’ conditions and possibilities to participate in the use of technology but also on teachers’ work practices concerning ICT in schools.

In the nine classes which were studied, one or two teachers worked and had joint responsibility together with pupil assistants for a group of pupils. The teachers were middle-aged and had been working in the field for a various lengths of time. All of the teachers had their first education as either recreation instructors or as preschool teachers. They have all worked as recreation instructors/preschool teachers for some years before studying to become teachers in special schools for pupils with intellectual disabilities. All of them had studied by distance education to some extent to become teachers in the field.

The pupils (both boys and girls) varied in ages from around 7 to 21. Their disability took various shapes. Some had besides their intellectual impairment also physical, visual or hearing impairments. Some of the pupils had wheelchairs while other walked with other aids. Some also had personal assistants which formed a part of the team around them.

All classes were surrounded by various forms of technologies (wheelchairs, lifts, other personal assisting technology, tape recorders, TV, etc.). The access to computers was pretty much the same, all classes had computers while it differed between how old they were and what/how they were used.

The two schools were locally integrated in regular schools, one in a regular compulsory school and the other in an upper secondary school.

4.2 Research Methodology – and Research Approach

This part of the thesis introduces the research approaches – the underlying methodology that is used in the thesis, the interdisciplinary toolkit of the study, situated knowledge, multi-sited ethnography and qualitative approach and the methods for the empirical collection: interviews, observations and textual and visual documents collections.
As mentioned above, the research aims to make multi-layered contributions. By using an interdisciplinary approach for the research, I aim to produce knowledge, which highlights the interconnectivity of political, methodological and epistemological contributions and their linkages with the issues of disability, technology, agency and subjectivity. To produce such knowledge it is necessary to explore different methodologies. More specifically, since the research deals with issues which are problematized in disciplines such as feminist studies, disability studies and science and technology studies, an interdisciplinary approach will be of importance. Since the research will follow humans and non-humans (Haraway, 1985; Callon, 1986a, 1986b; Johnson a.k.a Latour, 1988; Law, 1992) - such as disabled pupils in their everyday school activities, their interaction with technological artefacts, and written documents - and develop knowledge about them, there will be a need for interdisciplinarity in the collection of material. So, the research uses different research methods: ethnography (Marcus, 1995), interviews (Fontana & Frey, 1994), collection of visual and textual data (Mason, 1996) and observations (Adler & Adler, 1994). These methods will provide me with extracts from collected textual documents (policies, interviews and field notes) and visual material (video clips). Furthermore, since the research draws on sources from various disciplines by using different methods and is intended to make political, methodological and epistemological contributions an interdisciplinary form if needed.

In order to produce knowledge on various grounds (different methods and methodologies) as well as disseminate the findings in a range of ways (textual and visual) for the different kinds of audiences, such as academics, policy-makers, teachers, and last but not least pupils with disabilities, which the research aims to reach, an interdisciplinary approach is important.

By combining the semi structured interviews, participant observation, collection of visual and textual data the research aims to explore the ways the agency and subjectivity of pupils with disability are made durable by different complexities found in networks of humans and non-humans, expressed both in talks, texts and performed in everyday practices. Furthermore, the research will present that in issues concerning disability, technology, agency and subjectivity, both humans and non-humans are part of tensions, which needs to be addressed by a political goal that things could be different (cf. Singleton, 1996).

Additionally, by combining a situated knowledge approach with ethnography I aim to highlight certain responsibilities of the researcher. In fact, Van Maanen (1988:1) stresses that ethnographic research carries with it both intellectual and ethical responsibilities since it, by its (re)presentation of cultures by various forms of writings, makes non-neutral claims. Van Manner claims that ethnography carries political issues in the researchers’ power to represent the culture under study (Van Maanen, 1988:4-5). This power perspective is for Stacey problematic in relation to ethnographic method (Stacey, 1991). For her, ethnographic method might put the informant at risk of being deceived by the researcher, who might treat the informant purely as data (Stacey, 1991:113).
Another problem Stacey highlights with ethnography is that sometimes its methods conflicts with a feminist way of doing research by its: “…dissonance between fieldwork practice and ethnographic product” (Stacey, 1991:114). To challenge this, Stacey (1991:117) argues for an ethnography that is partially feminist rather than a grand narrative form of feminist ethnography. I consider that Stacey’s claims about a partial form of feminist ethnography and responsibility are important, and consequently for me to be responsible in the knowledge claims, a combination of the multi-sited ethnography (Marcus, 1995) with Haraway’s situated knowledge (Haraway, 1991:183-201) is suggested. This combination will enable me to make responsible knowledge claims from a located and situated place.

4.2.2 Situated Knowledge

In my research I am particularly interested in how our world is a result of processes between social, political, cultural, economical, ethnic, disability and gendered intersections. Thus one of the goals of my research is to highlight how disability and ICT intersect and as such is a process which interacts with people’s agency and subjectivity. Consequently as a researcher I choose which interactions that are highlighted and as such I am also part of the construction of the possible intersections that simultaneously are hindering and enabling. Situated knowledge is a perspective that corresponds with my way of thinking.

Situated knowledge grew out of work by the feminist techno-science researcher, Donna Haraway (1991). The situated knowledge perspective is a form of feminist objectivity with emphasizes the importance of making knowledge claims which are partial rather than universal (Haraway, 1991:195). Knowledge is built on some type of responsibility where the researcher needs to locate her/himself in the field of study (Haraway, 1991:195). Further, the responsibility in one’s knowledge claims also makes it important to include various differences, whilst keeping in touch with material reality. In this regard thoughts, feelings and experiences are seen as valuable to be included in the research. For example, when exploring the intersections between disability and technology and constructing knowledge about them, at first I locate my pre-knowledge of the field, my previous experiences, thoughts and feelings. Thereafter, I relate my pre-knowledge and the previous experiences, thoughts and feelings with the empirical material. In this relation I look upon how the knowledge about disability and technology encounters with my previous experiences. I do additionally understand that the knowledge is produced in my research in relation to other actors. This relational aspect is in turn important in order to create situated knowledge claims. Haraway (1991:198) says: “Situated knowledges require that the object of knowledge be pictured as an actor and agent, not a screen or a ground or a resource, never finally as slave to the master that closes off the dialectic in his unique agency and authorship of ‘objective’ knowledge.” Thus, the researcher as well as the object of knowledge creates in a relational aspect knowledge which becomes situated.
An example of the situated knowledge perspective can be found in that I experienced how I had a dual role when I visited the schools. Sometimes I was considered to be a technical expert who was doing research, meaning that I was asked to install programs and give technical solutions to the staff. At other times my previous work experience as preschool teacher was considered among the staff and the pupils in our encounters. Thus, often the staff made statements like: “You must remember this from the time when you worked here” and so on. This made me aware quite early on in the empirical collection of the research of the need to reflect on how I could be responsible for what I saw based on the situated knowledge claims by shifting between the roles. I want to stress that during the two studies when I met up with the pupils and staff I experienced that I shifted between the various roles. Sometimes I was in the classes in the role of a PhD student whilst simultaneously relying more on my former position as a preschool teacher. When being a PhD student in the classes I asked questions and conducted observations and interviews. While at other times I encountered the pupils and staff from the perspective of being a preschool teacher. An example of this role shifting was that I for instance aimed to work closely with the pupils when I observed their work. I sat down at their desk observing as well as talking about the task they were undertaking. At the same time as observing what they did, I approached them by taking a standpoint from a preschool position. For instance, if the pupils had a lesson in math and were supposed to solve a mathematical task I asked them how they liked the task and how they would solve it, at the same time as I also at a latter phase tried to talk them through how to solve it. I was not hired as a preschool teacher, but as a way to talk and work with the pupils I returned to experiences based on my previous occupation. Sometimes these shifts enabled me to work closely with the pupils, while at other times it hindered me from exploring the practices in a deeper sense. I have found the role shaping as a challenge and I appreciate Elovaara (2004:77) when she states:

“\textit{I had moved inside and by doing that I had created an outside I could observe and write about. At the best moments, I could interpret and understand the world outside.}”

Here I can say the same. As a researcher I have often experienced that I lived in the world in between. Sometimes it has been beneficial while at others it has been more complicated.

The situated knowledge was a leading star. It was of importance when I conducted the interviews. For instance, in the interviews with the pupils I shifted between being a PhD student and a preschool teacher. So, when interviewing I drew upon the experiences I had of working in special schools. This influenced my questions in such a way that I worked in a dialogue with the pupils to get answers in the areas of interest. The shifting roles between being a preschool teacher and a PhD student was sometimes of great value but also difficult. It was important when I conducted the research with the pupils since I recognized that sometimes when I asked my question I needed alternatives to the act of asking, and then I made use of my previous preschool teacher role for instance, by asking the pupils to draw pictures of computers, as a way of opening up our conversation and making the computer more concrete.
However, the shifting roles were also difficult in the interviews, especially with the pupils, since I sometimes asked questions as I would have done if I was a preschool teacher. This lead me to sometimes ask and continuing to ask questions, rather than waiting for them to express their own words from the beginning. It was additionally difficult when the pupils drew pictures, since I did not ask them so much about what they painted during the drawing. In a way I regard that this is also a way in which I used to work when I was a preschool teacher in the special school. I did not want to interrupt the pupils so much. I did at the same time ask them to draw pictures where I gave them instructions. For instance, I asked them to paint how they thought the computer looked like and what they used to do with the computer, rather than letting them draw pictures of the computer without any task given in advance. This was also how I used to work in my previous practice. I do however regard that in a way this was of value for some of the pupils since it gave them some directions of what I wanted them to do.

Furthermore, I also switched between the preschool teacher and PhD student roles when I visited the classes. So, when I entered the classroom I asked the staff and the pupils to see me as a person who were there to work and not just observe, and I felt that was quite easy for me since I often knew what was expected of me. There also existed difficulties with the observations in that the setting was familiar to me, so sometimes it was difficult to question the practices which I was being part of during my fieldwork. It was simultaneously of value that I was familiar to the setting since it also gave me access to be in the schools. Some teachers in the study expressed that they would not have allowed me to be in the classes if I had not had any previous experience of special schools. I also experienced that I had a good contact with the pupils since I was familiar with the school settings.

The situated knowledge claims also contributed to the interests of how one can handle politics which is part of conducting research. Based on my previous experience of being a member of staff in special schools, I had heard comments like the one from Björn Rosengren, the former Swedish Minister of Industry, Employment and Communications in 2000, where he claimed:

"The most important task today is to ensure that everyone will benefit from these advances. The use of IT allows both men and women to realise their creativity and develop new skills." (Ministry of Industry, Employment and Communications, 2000:Foreword)

Elsewhere, policy-makers argued in a similar vein that access to ICT should be enhanced for people with disabilities and to the elderly (Bill 1999/2000:86:29-30; Bill 2004/05:175:142-143).

For me Rosengren’s statement and Bill 1999/2000:86 and Bill 2004/05:175 include what I see as an argument for equality. For me, the equal access argument runs the risk of seeing the individual and her/his choice as the problem rather than regarding issues around access to ICT as part of a relationship between gender, body and technology, which is located in social and cultural contexts.
Thus, this experience has led me to an interest in how I as a researcher can be responsible in my claims and make political contributions by arguing for a politics that things can be different and how the researcher can within her/his knowledge claim include various differences whilst keeping in touch with a material reality. So, my research aims to contribute politically by producing knowledge, which shows that things could be different – rather than assuming that they should be different (cf. Singleton, 1996). By arguing this political point, policy-makers could be encouraged to open up to concepts such as equal access through the inclusion of differences. Haraway (2004:199-200) explains in her book “The Haraway Reader” that for her knowledge is a practice which does not exist mainly through/in disembodied ideas and concepts. She says:

“Knowledge is embedded in projects; knowledge is always for, in many senses, some things and not others, and knoweres are always formed by their projects, just as they shape what they can know. Such shapings never occur in some unearthly realm; they are always about the material and meaningful interactions of located humans and nonhumans-machines, organisms, people, land, institutions, money, and many other things.” (Haraway, 2004:200)

For Haraway situatedness does not identify with location. She says:

“Sometimes people read “Situated Knowledges” in a way that seems to me a little flat; i.e., to mean merely what your identifying marks are and literally where you are. “Situated” in this sense means only to be in one place. Whereas what I mean to emphasize is the situatedness of situated.” (Haraway, 2000:71)

4.2.3 Multi-Sited Ethnography and Qualitative Approach

To make situated forms of claims I use a variant of multi-sited ethnography (Marcus, 1995), which for me works in accordance with a perspective of situated knowledge based on the partial perspective, which Clifford argues is employed by ethnographers (Clifford, 1986:7). As a way to explain ethnography I borrow a definition from Hammersley and Atkinson (1995). They say: “In its most characteristic form it involves the ethnographer participating, overtly or covertly, in people’s daily lives for an extended period of time, watching what happens, listening to what is said, asking questions- in fact, collecting whatever data are available to throw light on the issues that are the focus of the research” (Hammersley & Atkinson, 1995:1). I would like to stress that I do not follow Hammersley and Atkinson’s definition since I for instance did not follow the participants in my study for a long time.

The research uses different research methods: ethnography (Marcus, 1995), interviews (Fontana & Frey, 1994), collection of visual and textual data (Mason, 1996) and observations (Adler & Adler, 1994).

27 I would like to say that the study is not ethnographic per se. Rather I am inspired by the ethnographic methodology and the methods commonly used within the approach.
Marcus argues that among researchers in interdisciplinary disciplines such as media studies, feminist studies, science and technology studies, cultural studies and the theory, culture, and society group, a new form of ethnography is under construction, the multi-sited ethnography (Marcus, 1995:97). I follow Marcus’s suggestion of a multi-sited ethnography, which for him is a form of ethnography that enables the researcher to follow people, things, metaphors, plots, stories or allegories, the lives or biographies and conflicts (Marcus, 1995:106-110). I do however diverge from Marcus because due to constraints such as time limits I do not intend to follow plots, stories or allegories, nor the lives or biographies. To make knowledge claims based in multi-sited research, I need to use certain tools or methods.

Since the research will follow humans and non-humans - such as pupils with disability in their everyday school activities, their interaction with technological artefacts, and written documents - and develop knowledge about them, I find it difficult to study and described it in quantitative terms. As such, I have chosen a qualitative approach to generate data. While talking about qualitative approach it is important to understand as Flick states: “Under the umbrella heading of qualitative research, various research approaches are summarized which are different in their theoretical assumptions, in the way they understand their object and in their methodological focus” (Flick, 2002:16).

Furthermore, when choosing between different research methods the researcher needs to consider what she/he is searching to answer (Silverman, 2000:1). A qualitative approach often suits studies which focus upon the interpretation, understanding and experiences as well as the production of the world (Mason, 1996:4). This means that one studies phenomenon in their natural settings in order to interpret and understand how people experience them (Denzin & Lincoln, 1994:2). In order to be able to conduct research in this way, qualitative research uses a number of methods: interviews, observation, textual reading.

Silverman (2000:8) presents a table of some of the main features of qualitative research.

1. A preference for qualitative data- understood simply as the analysis of words and images rather than numbers.
3. A preference for meanings rather than behavior- attempting ‘to document the world from the point of view of the people studied’ (Hammersley, 1992: 165).
4. A rejection of natural science as a model

**Figure 2.**

28 Silverman has adapted the model from Hammersley (1992).
In my case the qualitative approach is underlying the choice of the specific methods I draw upon: observations, interviews, and visual and text analysis.

<table>
<thead>
<tr>
<th>Methods</th>
<th>Study</th>
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<tbody>
<tr>
<td>Observations</td>
<td>Study # 1 and Study # 2</td>
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<tr>
<td>Video Documents</td>
<td>Study # 1</td>
</tr>
<tr>
<td>Interviews</td>
<td>Study # 1 and Study # 2</td>
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<tr>
<td>Drawings</td>
<td>Study # 1 and Study # 2</td>
</tr>
<tr>
<td>Textual Documents</td>
<td>Study # 1 and Study # 2</td>
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Figure 3.

The justification of the qualitative approach is closely connected to the Silverman themes (see Figure 2). For instance, the specific methods were used as a way to understand how people in their practice construct disability and access and use of technology. As a way to understand this I rely on analysis of words and images rather than numbers. Further in order to get a view of naturally occurring data I relied on observation rather than experiment. In the interviews I used semi structured forms. I had specific themes I was interested in exploring but in the way the pupils expressed them. Thus meaning was more important than behaviour.

4.2.4 Interviews

The interview as a method is more complex as it may seem in the beginning. Fontana and Frey (1994:361) say: “Asking questions and getting answers is a much harder task than it may seem at first.” Interviews can be used in many different ways and also for different purposes (Fontana & Frey, 1994:363). Later debates regarding interviews as a method have mostly focused upon the ethics of research and the power perspective the interviewer has (Fontana & Frey, 1994:363). Furthermore, interviews can vary in forms such as e.g. structured, semi structured to unstructured interviews (Fontana & Frey, 1994; Yin, 1994; Mason, 1996; Flick, 2002:74-95). The research presented here is based on interviews where one has themes that one is interested to study. The interviewer answers the question that the informant asks her/him and further the interviewer is influenced by personal feelings from the information she/he gets from the informant (cf. Fontana & Frey, 1994:366). Thus, in my intention to give the pupils voices concerning issues around ICT, I used semi structured interviews. I interviewed six pupils individually at their schools. Thus, in the first study three interviews were carried out with three pupils individually. In the additional study three pupils were interviewed individually. I used certain themes such as childhood, education, interests, media, etc29. After some time I realized the need to find alternative ways of interviewing since it sometimes was difficult for the pupils to articulate their views verbally. I thus returned to my previous work and decided that I would combine the interviews with a session of drawing.

29 See APPENDIXES for an overview of the themes.
By combining interviews with drawings, my intentions were to find better ways to listen and to understand the pupils’ views of use and access to technology. Consequently, the interviews with the pupils gave me access to how they articulate their views on ICT and use of ICT in their everyday lives.

4.2.5 Observations

Observation is also a well-known method in qualitative methods and has a long history in research. Compared with everyday observation, the observation done in research is more systematic and also has a purpose (Adler & Adler, 1994:377). The method differs from the interview in the way one gets information. Bell says: “It [the method of direct observation] is especially good when it comes to disclose whether people actually are doing what they say that they are doing or behave in a way that is in accordance with what they ought to do” (Bell, 1995:108, my translation). Observations can vary in many different ways. One should also be aware of the distinguishing factor between qualitative and quantitative observation. In the qualitative observations, the researcher studies e.g. actors in their natural setting in everyday life (Adler & Adler, 1994:378). Adler and Adler (1994:378) say: “As such, it enjoys the advantage of drawing the observer into the phenomenological complexity of the world, where connections, correlations, and causes can be witnessed as and how they unfold.”

The role of the researcher can also vary, from participant to non-participant observer with variations between the two extremes (Adler & Adler, 1994:379-380). In the latter one the observer mainly focus on observing the setting under study while in participant observation the observer is participating more actively. So, the approach of observation assumes that a researcher is active in the study to various extents. Since I wanted to be able to see how the relations between the humans (pupils with intellectual disabilities) and non-humans (technological artefacts and written documents) were performed and how the researcher was also actively part of this process, I decided to use participant observation. A further reason for using observation is that this form of data collection enabled me to capture things which sometimes cannot be expressed in words. Thus on every occasion when I visited the schools I spent time observing. After the days in the schools I wrote down field notes. By using observation, I was enabled to follow things (Marcus, 1995:106-108) i.e. different forms of technology such as computers and wheelchairs, and show how they also are part of the performances in disabled children’s subjectivity.

When conducting the observations I became aware that previous experiences both contributed to the design and the ways that I observed. Thus, when conducting the observations I experienced that I shifted between being an insider/outsider and that both were equally important to the research. This experience resembles Fuss’ (1991) way of looking at the inside/outside functions when dealing with research concerning homo/heterosexuality.

* My words in brackets.
For her the inside and the outside are always dependent on each other, she says: “The greater the lack on the inside, the greater the need for an outside to contain and to defuse it, for without that outside, the lack on the inside would become all too visible.” (Fuss, 1991:3).

4.2.6 Texts and Visual Documents

The research methods in qualitative research also involve analysis of empirical data such as documents and policies. One of the reasons for this is that the access to the material is quite easy (Hodder, 1994:393). Further, the information embedded in the material is not easily accessed in any other way. Finally, in this way the historical part is also possible to locate. Documents can include for instance books, letters, policies, minutes of meetings, and newspaper, laws, and photographs (Hodder, 1994:393; Mason, 1996:71). Documents are important since they provide details, which enable comparison with other information sources (Hodder, 1994:394). It is, however, important to consider the context where they were created (Hodder, 1994:394; Yin, 1994:82). It means, as Manson (1996:72) suggests, that texts, documents and written words are meaningful in the social world.

To follow the metaphors presented in textual documents, such as policy documents, my research intends to show how texts play a part of the construction of disabled pupil’s agency and subjectivity. As a way to explore the Swedish government’s aim for an Information Society for all and how it articulates the interaction between technology, disability and gender I collected and read Bill 1999/2000:86 and Bill 2004/05:175. The collection of textual documents was important for me since it enabled me to get access to how policy-makers consider humans and ICT and the processes they contribute to in society. However, reading it was a difficult process especially as they were written in a formal way which I was not so familiar with. Furthermore, I was early on in my research interested in alternate ways to get access to how teachers and pupils work with technology, and as such I proposed that the teachers would video record when the pupils were working in front of the computers. Later on I found it difficult to use the material since I felt unease about using visual material as a way to make knowledge claims, mainly because I was only a second viewer of it. I also came to read feminism texts (Haraway, 1997:21–39; Sturken & Cartwright, 2001) of how visual material historically has been used as a way to justify research results, and of how relying on sight as way to proof things is very much connected to a positivist worldview. A positivist view of conducting research does not work in accordance with a situated knowledge approach. All of this made me convinced to leave the material behind.

4.3 Analyzing the Empirical Material

When researching issues concerning what might be called differences, one is partly co-constructing the differences. Thus, in my study the focus has been on how pupils with intellectual disabilities use and access technology in their everyday life.
In my analysis I have relied on a limited amount of pupils. It has been difficult to present the pupils as being both similar as well as different from each other. They are all defined as intellectually disabled, but despite this their lives do not resemble each other. For instance, Anders one of the pupils who where interviewed were aware of his disability and also knew what the implications of this had for his life. Martin, another of the pupils in the study, was on the other hand also aware of his disability but did not consider himself any different from anyone else. I would say that in my presentation the intellectual disability is a concept which I have wished to open up to see if it involves more than something found in a common theme. However, I have in my choice of participants in this thesis contributed to what intellectual disability, use and access of ICT have come to be. The pupils who are not visible in this thesis have besides their intellectual disability more disabilities which makes talk about access and use different. My intentions are to include them in a forthcoming PhD thesis and relate them to the pupils found in this thesis. That might enable a wider opening up of disability, access and use of ICT.

The material which focuses on the pupils includes a limited amount of the pupils from the overall study. In this thesis the focus is on the pupils from the two studies, who besides being observed also were interviewed. The pupils who I mainly observed and/or did not interview have to an extent been left out. One reason for this is found in the difficulties to give voice to them in a justified way due to limitations in time to analyze the empirical material from the encounter with them. Moreover in this thesis I present participants from one of the schools. The reason for this is that all of the interviews with the pupils were conducted at this school.

In the analysis of the empirical material I analysed the interviews by reading the transcribed texts from every interviews several times with the purpose to find some common themes. After finding some common text units, I formed them under the themes: introducing the classes, the schooldays and the school setting, the pupils’ everyday life in school, the policy and understanding about intellectual disability among pupils, using ICT during the schooldays, ICT in everyday life and the youths’ views of the computer. I analysed Bill 2004/05:175 in a similar way by using a thematic approach. I formed themes such as: the ICT policies in Sweden and a sustainable ICT society for all.

After the first analysis where the themes were brought together, I decided to relate them to work in the area of (ANT), disability studies and feminist studies. ANT was used in order to give a new opening up of how humans and non-humans are part of the disabled pupil’s agency and subjectivity. Disability studies enabled an opening up that disability is a construction of both bodily as well as social issues, thus in relation to each other rather than built upon dichotomies. Finally, feminist studies enabled me with methodological possibilities to explore the research area for instance by its way to critique gender and science relations as well as its focus on gender and technology.

The paintings were analysed in relation to the themes which came out of the interviews as well as related to the theoretical and methodological approach.
4.4 Ethical Considerations

When I began my research process I focused on ethical considerations which I needed to take into account. The importance of ethics when carrying out research is pointed out in the literature on ethics in social research (Miles & Huberman, 1994:288-297; Hammersley & Atkinson, 1995:263-287; Kvale, 1997:104-116; Codex, 2007).

When I conducted my first study in 2002, I contacted the teachers, both by telephone and letters and asked them whether they would like to participate in the study. I informed them about the study and that their participation would be on a voluntary basis. The additional members of staff were also informed about the study. I contacted the pupils and their parents by sending them an invitation by letter. In the letter I informed about the aim of the study, how it was planned, I further gave pupils and the parents the option to decide whether each of the pupils would like to participate in the study by sending them a letter of consent. The letter of consent that was distributed to them was to be signed by the pupils and/or their parents. I further contacted the headmasters at the schools so they know that research was conducted at the schools.

In the second phase of the research I followed the previous mentioned procedure. But this time I used a more formal letter of consent, and I also asked the additional staff of their consent to the study.

When I started transcribing the interviews and field notes, I gave the pupils and the staff fictitious names to not reveal their identity. Additionally, I deleted names from the pupils’ drawings that appear in this thesis. I will not reveal any information which can make any of the individuals identifiable (schools, name, etc.).

During the time of the project I also applied to the ethical committee at Luleå University of Technology who approved of the study.

Remember that the intention with my PhD work is a wish to bring the pupils ‘voices’ together in some way and to connect them to technology and policy documents ‘voices’. It is important to stress that it is my construction, so that by my transcriptions, descriptions and analysis of the empirical material I construct a certain kind of knowledge. As a way of giving the pupils voices, I felt that the use of drawings would enable it for the pupils to describe their views in their own ways.
PART THREE - PUPILS, ICT, SCHOOL AND ICT POLICIES

5 Analysis – An Encounter Between Pupils, Disability and ICT

This part (of the thesis) focuses on the ways pupils with intellectual disabilities in upper secondary school interact with technology as part of their everyday life. Thus the chapter draws on empirical work, which was mainly collected by interviews with pupils in two schools (Giga and Mega) in the Norrbotten area, Sweden. The empirical material introduces the classes, the schooldays and the school setting, the pupils’ everyday life in school, the policy and understanding about intellectual disability among pupils, using ICT during the schooldays, ICT in everyday life and the youths’ views of the computer. The first part, which introduces the classes, gives the reader an overview of the studies and the pupils. The section on the schooldays and the school setting introduces an overall picture of how the pupils’ schooldays and school setting look like. The section on the pupils’ everyday life in school presents how the pupils experience activities during the schooldays. The section of the policy and understanding about intellectual disability among pupils introduces ways to regard intellectual disability. The section using ICT during the schooldays gives the reader an overall view of how the pupils access and use ICT. The section ICT in everyday life introduces how the pupils use and access technology in their everyday life. It also presents the reader with a view of how computers are used in the classes in which I conducted my study. Finally, the section the youths’ views of the computer introduces how the pupils view the computer and access to computers. The empirical findings are related partly to research of scholars interested in education, disability and the relationship between ICT and disability (e.g. Sonnander, 1997, 2005; Gardelli, 2004; Szönyi, 2005; Shakespeare, 2006).

5.1 Introducing the Classes

The pupils and the classes can be seen as belonging to two studies, with some participants from the compulsory special school (the school Giga) as well as from upper secondary special school (the school Mega). In this thesis six of the pupils I interviewed and observed (three from the first study and three from the second) are visible. All of these pupils attended upper secondary special school.

Study 1-
The first study was conducted during spring 2002. It was a study which I started up together with Marja Vehviläinen (the supervisor of the PhD thesis). Its aim was as mentioned earlier to develop knowledge about the pupils’ conditions and possibilities to participate in the use of technology, but also on teachers work practices concerning ICT in schools. The study was planned to be a form of a pilot study with a limited number of participants and the purpose was to get an overview of the pupils’ and teachers’ access and use of ICT in the schools. Totally 11 pupils and 3 teachers at the two schools, Giga and Mega, in two various municipalities in Norrbotten participated. The pupils in the first study were 8 boys and 3 girls and they varied in age from around 7 to 20.
They had various forms of disabilities for instance short of seeing, hearing as well as intellectual disabilities. In two of the classes the pupils interacted closely with the teachers and the other staff when participating in school activities. Thus, most of them had assistance in one way or another during the schooldays. For instance, most of them were assisted when getting dressed, eating, etc. The pupils in the third class interacted with the teachers and the other staff in a different way. They worked with limited assistance, for instance they worked individually in front of computers and with various form of school material and only asked for help when they got stuck in their work in one way or another.

In the interviews with the pupils I came to make a choice between the pupils. I focused on the pupils that either spoke or combined spoken language with sign language. Thus I left some pupils out because I had a limited understanding of their way of speaking and also since I did not want to have the staff with me when conducting the interviews. Additionally I did not have enough time to analyze the alternative communication with the pupils in a proper way to justify my claims and this also contributed to this decision. A similar choice was made in the second study.

Study 2-
In the second study I continued to work with the same teachers, but I also included three additional teachers. Some of the pupils who participated in this study were also participants from the first study while others were new to it. The aim of this study was to develop knowledge about the pupils’ conditions and possibilities to participate in the use of technology but also on teachers work practices concerning ICT in schools. The study was broadened as a way to get more knowledge and a wider overview of the pupils and teachers’ access and use of ICT in the schools. Totally 17 pupils and 6 teachers at two schools, Giga and Mega, in Norrbotten participated. The pupils in the study were 12 boys and 5 girls and varied in ages from around 7 to 21. They had various forms of disabilities, both physically and intellectually. In three of the classes the pupils interacted closely with the teachers and the other staff when participating in the school activities. Thus most of them had a member of staff assisting them in various ways during the schooldays. The pupils in the other two classes interacted with the teachers and other members of staff in a different way. They worked with less assistance, for instance they worked mostly individually. In the sixth class the pupils were somewhere in the midst of the two previous mentioned classes. Some of them interacted closely with the teacher and the members of staff while some of them also worked with less assistance.

5.2 The Schooldays and the School Setting

In this part of the thesis the reader is given an introduction to the schooldays in a special school. It additionally introduces the school setting. This part also presents an overall picture of the schooldays of the pupils at the upper secondary special school that is the focus in this thesis.
The classrooms differed a bit from regular classrooms, for instance by the way it was arranged. Some of the classes had a table in the midst of the room around which the pupils and teachers sat for the collective assembly. The pupils had work places. Some of the work places were designed differently due to each of the pupils. For instance, some of them had shields, which separated their work place from the other pupils. This was also explained as a way to minimize noise and other distractions. All of the classes in the study had various forms of technologies in the classroom e.g. computers, wheel chairs, etc. Some of the classes also had access to computers in other nearby rooms so the pupils could work without any distractions if needed. This meant that when a pupil needed to work without distraction she/he could go to a nearby room and work there to stay more focused on her/his work.

The schooldays started up by a form of collective activity. During this form of activity the pupils, the teacher and the other members of staff communicated in various ways, verbally, with sign language, etc. about the present day but also about the previous day. In one of the classes, this form of activity also involved talking through news events. The members of staff used the local paper and together with the pupils they had a conversation about local topics as well as news on a more national and international level. Furthermore, this class together with another class also had conversation about the date and the weather and what the pupils had done the previous day. After the collective assembly, the pupils were introduced to the activities that they would participate in during the schooldays. This involved that in some of the classes, the pupils went to a computer and had their schedule introduced by various symbols. For instance, when presenting the activity of sports the computer showed a ball and in that way the pupils knew that they were going to have sports. Other pupils went to their workplace and had a look at the schedule and by that were introduced to the school activity that was going to happen. After having a look at the schedule in its various forms, the pupils varied in the assistance they got from the members of staff. Some of them only had assistance when they asked for it while others had personal assistants, who assisted them through all school activities. Thus some asked for assistance while working with a task in mathematics while some were assisted from the moment they arrived at school until they left, e.g. getting assistance to move to their wheel chairs.

The activities during the schooldays varied a lot. In some of the classes they had the same topics as pupils without disabilities. For instance they had subjects such as mathematics, English, sports, music, social studies, Swedish, and vocational training. In a way they had similar schooldays as pupils without disabilities but days also differed in such a way that the focus was more on each of the pupils’ individual needs compared to how it is in the ordinary school. Another difference was that there were more members of staff besides the teacher in the class (for instance, pupil assistants and personal assistants). The teachers in the two schools had around three to five pupils in their class.

When the pupils had their breaks they had most of their activities together. Despite that the pupils, at both schools, were physically integrated in a school where pupils without intellectual disability also attended, it did not involve much interaction with the rest of the pupils at the school. However the pupils interacted more between each other.
For instance, during the breaks the pupils in one of the classes entered the other class’ classroom and played cards. They did it without being told to do so by the members of staff; it was done voluntarily. When the pupils had their lunch breaks they went to the same dining room as all other pupils at the school.

The teachers in the classes where the pupils went to the same dining room as the pupils without disabilities stressed how important it was for the pupils to interact with the other pupils at the school as a way of being part of the Swedish society in the long run. Additionally, the teacher’s role in one of the classes was similar to teachers in regular schools. They gave instructions and walked around in the classroom and oversaw and helped the pupils with their tasks. In the other class, the teacher worked closer with her pupils. Thus she/he approached the pupils more and oversaw and helped them more. The teachers did not give instructions to the pupils in a collective way. Instead they worked as the rest of the members of staff (pupil assistants and personal assistants) by working individually with the pupils. Sometimes when I was in the classes I could not see any big difference between the various work groups in the classes. What seemed to differ was that the teacher had the responsibility to plan and arrange for the pupils to reach certain goals and to fulfill the national goals for special schools.

To sum up I would say that the pupils in both classes were more individually trained than in regular classes. Thus most of the classes had more staff than in the regular school which enabled the pupils to work more individually. Simultaneously, there were also similarities with the regular school in the way that some activities were performed on a collective basis.

5.3 The Pupils’ Everyday Life in School

The focal point in this analytical part of the thesis is the pupils’ everyday living with intellectual disabilities and use of technology. By this I mean that intellectual disability is not a pre-given category. Rather it is something which people live, an encounter between biological practices, psychological practices, pedagogical practices, social practices, technological practices, etc. All of these are related and contributes to what living intellectual disability becomes. The access and use of technology bears resemblance to the above definition of everyday living intellectual disabilities to the extent that it is an encounter between various forms of practices, between humans and non-humans. In this part of the paper the reader is introduced to how the pupils experienced activities during the schooldays.

I want to stress that I have during the course of research found it difficult to present the pupils I met without falling into the trap of introducing them as being deviant. I did not want to run the risk of presenting them from a biological aspect, mainly focusing on intellectual shortcomings. Neither did I want to focus on intellectual disabilities as something purely social. Rather it became vital to present the pupils and their intellectual disabilities from a perspective of everyday practices where bodily, social and technological processes encounter and interact. It was important to include the pupil’s own words of how they regarded their life.
Consequently, in the following analysis the pupils are introduced in relation to various issues we talked about during the interview as well as some of the things I observed during my time in the classes rather than being pre-defined as ‘only’ pupils with intellectual disabilities. Thus, by starting out from the pupils own words of their everyday lives it became possible to explore how bodies interact with technology and that in this relationship both medical and social issues are part of the process.

Magnus was a boy I met. In our encounter we started to talk about his age, he was 16 years old at the time of the study, and that he had parents and a sister and a brother. We came to deal with various forms of technologies, which existed in the school as well as outside. During the time when I visited the class I came to know that he worked mostly on his own and that he sometimes needed assistance by the teacher and the other members of staff to stay focused on his work. He had most of his friends in the other class which he visited when he had the possibility. Outside of school he liked to play boccia, go bowling and play indoor bandy. Another of his interests was to go and see the local hockey team when they had their games in town. Besides being interested in sports, Magnus also liked to watch TV. For Magnus the schooldays consisted of a collective start up in the morning, which included singing songs among other things. Furthermore he talked about the music class where he mentioned that he played the drums. He also mentioned that they had a closure at the end of the day where they sang songs. He did not really know why they had this activity.

Rebecka: You sing. Why do you have a closure?
Magnus: I do not know.
Rebecka: You do not know.
Magnus: One needs to have it.
Rebecka: Why do you need to have it?
Magnus: Yes, no. I do not know, explain it.

When I talked with Magnus about the closure it became apparent that he participated without understanding why. I think this is important because I guess that the teacher had a specific purpose for why they had the closure. But in a way this pedagogical activity was something, which was somehow not synchronized between the teachers’ work practice and Magnus way of practicing it. Magnus further told me that they had physical education and sports during the schooldays. In contrast to why they had the closure he knew why they had sports.

Rebecka: But, why do you need to have physical education and sports?
Magnus: I do not know, to exercise a bit. (Cannot hear what is being said).
Rebecka: What did you say?
Magnus: To exercise a bit.
Rebecka: To exercise a bit
Magnus: Yes.

Compared to the closure activity the physical education and sports were activities that were perhaps more clearly defined. The surrounding society constantly tells people of the importance of exercising.
But it might also be so that since Magnus liked to take part in sport activities in his spare time, he also knew why it was important. Thus, his everyday practicing sports activities interacted with the everyday school practices.

When I spoke to the pupils about the schooldays it became apparent that some of the activities during the schooldays were important while others were unimportant or even boring. Erin was 15 years old and the only girl interviewed in the study. She lived with her mother and her mother’s partner as well as with siblings in the town. Erin told me that she liked to paint and work with the computer outside of school. Erin explained that the schooldays consisted of mathematics, Swedish, multiplication, English, etc. She told me that it was important to attend school in order to learn how to read and write. She also talked about the assembly in the morning, which started up the schooldays. It consisted of reading the paper, talking about the date, the weather. Erin considered that the reading of the paper was a way of knowing what were happening in the world. But at the same time as she told me that she explained to me that she disliked that activity the most. When we talked about what she liked to do during the breaks, she returned to drawing pictures and playing cards with her mates. Thus the activities in the school were seen in both a positive as well as a negative way. Compared with Magnus who did not understand the reason for having the closure I regard that Erin’s way of relating to the assembly was more about resistance than about understanding why they had these activities. At one point when I was in the class Erin resisted talking about the things the teacher presented from the paper. In the interview she told me:

Rebecka: What do you do more at the assembly then?
Erin: Mm, well we do not sing as the small kids do.
Rebecka: You do not sing, okay.
Erin: No.
Rebecka: But you said something about reading the paper?
Erin: Yes, that we do, it does not interest me.
Rebecka: Why, why do you think, why do you think that X and X [fictitious names of the teachers] do that?
Erin: Yes, because we should, we should be able to learn about what the world deals, what is happening and so on.
Rebecka: Okay, but you said that you do not think that it is interesting?
Erin: No.
Rebecka: What would you rather like to do at the assembly then?
Erin: Well, say that. Drop the paper at least.

Anders had another view of the schooldays. He regarded the computer as important since it enabled him to have fun. He told me that he was 20 years old and that he lived with his mum in the town and had a sister in the south of Sweden. He was originally not from town and he had a wish to return to the place where he was born and where his dad lived.

* My words in brackets.
Rebecka: Okay, but you when you say school, what do you think is the funniest thing in the school?
Anders: The computer.
Rebecka: The computer, why is it the funniest?
Rebecka: What is it that makes it fun?
Anders: It is fun to work with it.

When we continued to talk he introduced me to how he liked a computer game called Mulle Meck30.

To sum up one can say that the pupils sometimes shared an understanding with the teachers of the activities in the school, while at other times the aim with some of the activities did not come out so clear for the pupils. It additionally seems that there existed some form of understanding of why some activities were important. It seemed so especially when the school activities were in tune with everyday life outside of school. For instance, Magnus interest in sports in school interacted with his interest outside of school. Finally, technology such as computers was something which for some of the pupils played an important part of the schooldays.

5.4 The Policy and Understanding about Intellectual Disability among Pupils

In this part I will present the conversations I had with the pupils around intellectual disability. I will relate this to some common definitions of intellectual disabilities. As such I introduce in this part some perspectives, which are common when defining intellectual disabilities.

Intellectual disability is a topic which is explored within various disciplines such as psychiatry, pediatrics, pedagogy, psychology (Sonnander, 1997:6). How disability is defined and what perspective one takes when exploring intellectual disability consequently comes to depend on which discipline that undertakes the study. Sonnander states: “Not surprisingly, the choice of a particular perspective will naturally affect what one sees and how one sees things” (Sonnander, 2005:193). Sonnander considers that there exist three perspectives that are prevalent when one demarcates and defines intellectual disabilities. These are: the epidemiological perspective, the constructivistic perspective and the relativistic perspective (Sonnander, 2005:193).

The epidemiological perspective includes a view where the intellectual disability is seen as caused by some form of biological cause (Sonnander, 2005:194). Sonnander (1997:10) continues and explains that from a medical epidemiological perspective one usually uses some form of system of classification.

30 Mulle Meck is a character from books by the author George Johansson. It has been developed into games focusing on how Mulle Meck builds cars, boats, airplanes, houses. And there also exist a version where one can explore the space with the character (Wikipedia, 2009).
Examples of systems of classifications are e.g. Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) as well as International Classification of Functioning, Disability and Health, (ICF) (Sonnander, 2005:194). According to Sonnander (2005:194) disciplines such as pedagogy and psychology set up a viewpoint of intellectual disability as a form of biological condition which can be influenced by education, etc. She additional explains that the surrounding is also stressed as important in relation to intellectual disability within this approach.

The constructivistic perspective means that the intellectual disability is seen as a form of social construction (Sonnander, 1997:15). Sonnander says:

“`The reality is much of an agreement. From this follows that the phenomenon we have chosen to name intellectual disability is valid only because we have chosen to categorize individuals in terms of psychometric values (results of intelligence tests) and other social constructions, as e.g. scales which aim to measure social ability and created laws and regulations for these individuals.`” (Sonnander, 1997:15, my translation)

The relativistic perspective includes a definition of intellectual definition from a psychological, social and administrative perspective (Sonnander, 2005:195). Firstly, intellectual disability can be defined from a psychological view. From this view intellectual disability can be measured via e.g. intellectual tests (Sonnander, 1997:12). According to the Swedish Institute of Assistive Technology a person’s Intelligence Quotient (IQ) which is below 70 indicates that the person is intellectually disabled (Hjälpmedelsinstitutet, 2006). If one uses this definition, about 2-3% of the population would be intellectually disabled (Hjälpmedelsinstitutet, 2006). Secondly, the social definition explains intellectual disability as an individual’s interactions with the surrounding society’s demands (Sonnander, 1997:12). As a way to measure social ability one often uses scales, checklists and other methods to measure a person’s ability to meet the demands from the surrounding society (Sonnander, 1997:16). Sonnander says: “`An association can be noted between the degree of intellectual ability, as measured with intelligence tests, and the degree of social ability, as measured with scales or determined in some other way`” (Sonnander, 2005:196). Finally, the administrative definition includes the support that a person needs, how the surrounding society’s system of aid is developed and how resources are given to people. Sonnander expresses: “`The administrative definition is based primarily on two considerations: one is the individual’s need for support and help, while the other is how the community’s help system is built up and which routines moderate the distribution of services`” (Sonnander, 2005:196). The Swedish Institute of Assistive Technology states on its web page: “`In Sweden we use the administrative definition for intellectual disability, persons that attend special school or who get support from LSS (Act concerning Support and Service for Persons with Certain Functional Impairments) and belong to circle 1`” (Hjälpmedelsinstitutet, 2006, my translation).

LSS is a law which according to The National Board of Health and Welfare: “`...should guarantee persons with considerable and permanent disabilities good living conditions, that they get the help they need in the everyday life and that they can influence what support and which service they get. The goal is that that the individual gets possibility to live as all the others`” (Socialstyrelsen, 2007, my translation).
The previous mentioned definitions can be seen in the classes to various extents. The psychological viewpoint is something that I did not experience when visiting the schools. This might have to do with that the pupils already had been defined as intellectual disabled when they applied to the special school. Instead I found that the social definition was very dominant in the schools in such a way that the teachers talked about the pupils difficulties as especially prevailing when they meet the surrounding environment. An example was when a pupil needed to have new equipment e.g. a new chair; it was sometimes not developed in such a way that the teachers could adapt it to fit the pupil’s individual needs. The administrative definition can be exemplified with that some of the pupils needed to have personal assistance during the schooldays and that the surrounding society mostly and mainly the municipalities met the demands.

All these definitions are interesting to various extents. For example it is interesting that levels of IQ and intelligence tests are still being used. It is very much focused on shortcomings and a rather medical viewpoint. Thus, focusing on shortcomings and a condition being focused on medical issues, runs the risk of not considering that a person’s intelligence is also based on various other relations, e.g. to technological aids, and to other people surrounding her/him. The second and third definitions bridge this shortcoming to some extent since they deal with the interaction between pupils and a surrounding society. However it is very much focusing on the individual’s possibility to live up to societal demands and ways to assist in various ways to limit the mismatch between individuals needs the demands in relation to the society. By this way of focusing on ways of shortcomings, intellectual disability always becomes something deviant. I want to highlight that I also think that all three definitions interact with each other. And as such there is not a strict boundary between them.

I became interested to relate the definitions presented by Sonnander to some of the pupils. More specifically I was interested to see whether the definitions in any way were visible among the pupils when we talked about disability. I want to highlight that the definitions Sonnander presents are not the words of pupils with intellectual disabilities. I do however, consider that the definitions presented by Sonnander forms a kind of administrative tool which are part of the pupils’ everyday lives. From the interviews with Martin and Anders I got to learn what they regarded intellectual disability to mean in their life.

I am sitting down with Martin in one of the rooms in the school. He tells me that he is 20 years old. During the conversation with Martin I am introduced to how he lives in a village outside town with his parents and siblings. He tells me how he commutes between school and home by taxi. After a short while I ask him why he attends special school. He says it is because he is handicapped and intellectual. He stops and I ask him if he means handicapped and intellectual disabled. He agrees. When we talk about what it means to be handicapped Martin says that he does not know. I start to think that perhaps I can get him to tell me more about what it means by asking him if he can do the same things as his siblings. He answers me by saying that he can fetch woods. While sitting there with him it seems that he is actually not thinking about any problems with being intellectually disabled. According to Martin’s way of relating to intellectual disabilities he does not focus so much about living with disability, he sees himself as similar to his siblings.
Another example of this is given to me by Martin when he tells me that he wants to get a philosophy degree and start to research about maps. He sees it as a possibility. During the time I am visiting the class Martin applies for work. In a way he knows that he attends school for a certain reason, him being intellectually disabled. But when relating to others this is not a big issue.

In my interview with Martin and his way of talking about intellectual disability I started to explore how he lived his life in relation to the definitions. Remember that the first perspective, the psychological, focuses on is intellectual disability as something caused by biological causes and related to a person’s IQ. Martin did not express so strongly his disability as something connected to his body in a biological way. In a way Martin knew that he attended school for a certain reason, him being intellectually disabled. But when relating to others this was not a big issue. He regarded himself as being able in a similar way as his siblings to fetch wood etc.

The social definition which explains intellectual disability as when an individual interacts with the surrounding society’s demands and when she/he cannot live up to the demands of the society, might additionally be seen in the chat with Martin. He stated that he wanted to get a philosophy degree and start to research about maps. He saw it as a possibility. Thus, it seemed that at the same time as Martin knew that he lived with intellectual disabilities he also was aware that he could apply for work similarly to other pupils without disability. Thus, he lived with disability but he did not see himself as restricted by it.

Another encounter I had with Anders. He tells me that the best school he ever has attended was in the town where he was born. One of the reasons for this was that he could travel by subway. Subway is actually what is among the most important things in life for him. He says: “It is my main interest, I do not think I have something real something else but well perhaps something else but…” In our conversation we constantly return to subways. How subways interact with disability is also vital in our chat. When I ask Anders what he would like to work with he keeps telling me subway driver and at the same time he tells me that he can never get such a position since he is intellectually disabled. He says: “No, because one is intellectually disabled, then it does not work.” He tells me that his mum has told him this. He refers additionally to his mum telling him that he has DAMP32 and that he thinks that he has inherited it.

Anders way of talking about intellectual disability could additionally be related to Sonnander’s definitions. It is possible to see this as Anders regarded himself to be intellectually disabled. At the same time that he told me he could not become a subway driver due to being intellectually disabled, he told me that he via the Web searches for information about subways, and even emailed a subway driver. Thus he had despite being diagnosed as intellectually disabled found ways of not seeing it as a big issue.

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32 Deficits in Attention, Motor control and Perception (DAMP) can according to Riksförbundet Attention (2002) be seen as a subgroup of the neurobiological/neuropsychiatric disability, Attention Deficit Hyperactivity Disorder (ADHD). DAMP is a concept that is mostly used in Sweden and partly in the other Nordic countries.
Anders did not talk about the disability as something biological. He was diagnosed but still he had his wishes, dreams etc. that he was able to let come through by being in interaction with technology. Living with disability and interacting with technology and humans constructed his agency. It did not mean that by him having an intellectual disability, he was not able to dream. Thus, technology and its relation to Anders might be seen as a way to move away from the so called social definition of intellectual disability. The administrative definition might be found in the way he was able to use technology in school. Remember that the administrative definition includes the support that a person needs and how the surrounding society’s system of aid is developed and how resources are given to people in need. Anders could with the technology meet demands from the surrounding society.

The body has been an important aspect in the overall project. The pupils have talked about their intellectual disability. From the interviews the pupils highlighted that disability influenced what they could and could not do. It was possible to see that disability meant that they could do the same things as sibling, for instance, as one of the participants said: “I can fetch wood…” For Anders the disability meant that he could not become a subway driver. But on the other hand he could with the use of computers and the Internet acquire information about subways; he could email a subway driver and by that also get access to his dream occupation. So, for these pupils, disability was something which sometimes enabled them to do specific things while at others times it restricted them to fulfil dreams, etc. As was presented by one of them, the comparison between himself and his siblings was a way to present that he was similar to them.

Technology such as the computer enabled ways to influence the pupils’ wishes about future careers. Thus ability/disability was seen from a relational aspect (in comparison to siblings) more than just focusing on their individual abilities. This relational aspect resembles Shakespeare’s critique of the social model as it is used in disability studies (Shakespeare, 2006). He says: “…I reject the strong social model approach to disability and attempt to construct an alternative which neither reduces disability to an individual medical problem, nor neglects the predicament of bodily limitation and difference” (Shakespeare, 2006:2). Shakespeare’s opinion is that there is a need to bridge what sometimes is called the medical model versus the social model. According to him people with disabilities are sometimes constrained by society and also by their own bodies. He says: “Disability results from the interplay of individual and contextual factors” (Shakespeare, 2006:2). For him, the existence of this relationship between society and the body is important.

5.5 Using ICT during the Schooldays

In this part the intention is to present the empirical material around how ICT in the school is used and accessed among the pupils. All of the classes that I visited had access to computers. It varied from having one in their own classroom to sharing computers between classes. Some of them had access to the Internet while others were without the Internet access. Furthermore, video cameras and mobile phones were also part of the schooldays. From the chat with Martin I came to know about the amount of computers in the school and the access of computers in school.
Rebecka: ...Do you think that it is good with computer in the school then?
Martin: Yes.
Rebecka: Is there an enough amount?
Martin: Yes.
Rebecka: You do not think that you should have more computers?
Martin: Yes.
Rebecka: You think so?
Martin: Yes.
Rebecka: How many should there be then?
Martin: Six.
Rebecka: Six, why should there be six?
Martin: (Cannot hear what is being said) Put there also because.
Rebecka: Do you think there should be one for you, one for each pupil?
Martin: Yes.

By relating to how the computers were used in the class I could see that Martin wanted more computers. He and the others used it among other things for writing. The amount contributed to the possibility for Martin to use it for his purposes. He used the computer for exploring matters in the municipality by exploring its web page as well as searching for future work. In a way Martin’s relation to the computer contributed to giving him agency to influence his life. A form of agency, which depends on human and technology working in close co-operation.

At another time I returned to the school to meet up with Magnus. In my conversation with him I asked about the various technologies they have in the school.

Rebecka: ...What, you have computer in the school, do you have any other similar things, do you have video camera in the school?
Magnus: Yes.
Rebecka: What do you do with it then?
Magnus: Snap.
Rebecka: You snap.
Magnus: Yes.
Rebecka: Do you have mobile phone in the school?
Magnus: Yes, think so, I do not know.
Rebecka: Do not know, but ordinary phone?
Magnus: Yes.

From my visit in the classes I saw various technologies such as wheel-chairs, tape recorders, stereos, cd-players, etc. These forms of technologies are not mentioned at all in the interviews. In a way, it seemed that some form of technology was valued differently than others. Thus, in way some technologies were seen as so obvious so they were not seen as technology. In a way technology can, as Berg (1996:61) explains, have different meanings for different users, etc. An example of this might be that the special school has been surrounded by technology such as wheelchairs, lifts, etc. for a very long time so some technologies have come to be more accepted as technology than others. It might also be so that the form of technology is under constant change.
Thus in a way computers are what all of the pupils used during everyday in the school while lifts and wheel chairs were not used by everyone.

5.6 ICT in Everyday Life

In this part I present the access and use of technology among the pupils in their everyday lives

The interviewed pupils had high access to computers and mobile phones. Additionally, it seemed that playing games and communicating were important for the pupils who participated in the study. In this part some of the findings from the interviews regarding access to and use of technology are presented. In the interviews I asked questions regarding: the use of computers and mobile phones, what access the pupils had to technologies such as computers, mobile phones i.e. both at school and at home. Additionally I asked questions of what kind of activities the pupils participated in when they worked with the computer.

During the time I visited the class I observed that Magnus had a mobile phone which he often had with him during the schooldays. When I asked him what he used the mobile phone for he said: “Yes but mum calls me when I shall come home and eat”. Magnus, had his own mobile phone, which was a way for his mother to stay in contact with him, for instance as a way to tell him that he should come home for dinner. No matter where in town Magnus was, his mother could reach him. He additionally told me that he used the phone to make mischievous calls to girls.

In the conversation with Erin it became apparent that she had access to a computer and a mobile phone of her own. She told me when I asked her about her activities outside of school:

Erin: Yes, I use to log into my computer at home. I have it very luxury…
Rebecka: You have? What kind of luxury? Tell me.
Erin: X [her mother’s partner] has got one, an own computer, a new to his laboratory in his boiler room, because he has had a computer self in his laboratory. And then he asked me if I could have his computer to my room so he has connected it there, so now I have my own broadband there. So I can enter when I want to, I do not need to ask when I enter.
Rebecka: So you have broadband at home?
Erin: Mm.

Erin told me about how her mother’s partner had a laboratory at their home where he had a new computer and how that enabled her to have a computer of her own. By having a computer of her own, Erin could access and use the Internet without asking for permission. She decided on her own when she wanted to use and access the computer. Erin also told me that they had three computers at home. Besides the computers they also had three TVs and a VCR and TV-games.

* My words in brackets.
Erin had a TV of her own. The family also had three mobile phones and Erin had a phone of her own. Erin used the mobile phone mainly for playing games but also for surfing on the Internet. She also visited the chat room Lunarstorm via the mobile phone. While sitting in front of the computer Erin showed me some web pages she normally visited. She also showed me that she wrote in Microsoft Word. Erin explained for me why she found it important with computers:

Rebecka: Okay, why do you think, do you think it is important with the computer? Do you think it is important to be well up on computers?
Erin: Yes.
Rebecka: Why?
Erin: Hm, to be able to check my mail, if any friends have written to me.
Rebecka: Okay.
Erin: I have lots of friends on my Lunar33.
Rebecka: Do you?
Erin: Yes.
Rebecka: Okay.
Erin: Over 50.
Rebecka: Oh.
Erin: It is true.
Rebecka: Is it friends you have here in town then? Do you have as many friends in town?
Erin: No, not, it is some that I know, that I use to be with. Maybe 5, 10.

The interview with Erin showed that the computer has influenced our way of living in various ways. Turkle (1995:9) states: “A rapidly expanding system of networks, collectively known as the Internet, links millions of people in new spaces that are changing the way we think, the nature of our sexuality, the form of our communities, our very identities.” Gardelli also presents in her study how ICT has changed social relations and communities (Gardelli, 2004:174-175). The relationship between ICT and social interaction is visible in the way Erin talked a lot of how she used Lunarstorm and how it enabled it for her to stay in contact with friends that she had on the Internet. When I asked Erin what she did when she did not work with the computer she said that she visited Lunar mail. In some way Lunar seemed to be something outside of the ordinary use of computers for her.

Thus, based on the interview with Erin it seemed that she had access to various forms of technology and was a user who knew quite a lot about the technology which she had access to. She explained to me that if one does not have broadband one cannot use the phone for making phone calls. She additionally explained for me that Lunar was not available at school since it was blocked. The pupils were not allowed to chat whilst working. When we talked about the use of computers Erin explained to me some drawbacks with it.

Rebecka: Erin, if, what else do you do with the computer besides being on the Internet? Is it, do you write anything or do you use any calculation program in it or?

33 Lunar is an abbreviation for Lunarstorm. It is a Swedish webcommunity where it is possible for members to interact virtually. The membership rate is about 700 000 active members (Wyatt Media Group, 2008).
Erin: *Home or??*
Rebecka: *No, here at school I thought.*
Erin: *Well. Use to enter, what was it, Microsoft Excel, something.*
Rebecka: *What do you do there then?*
Erin: *Write. Can write a story or what I did during the weekend. Or the sports holiday.*
Rebecka: *Ok, you write like some sort of diary?*
Erin: *Yes.*
Rebecka: *Yes.*
Erin: *Then we save it, but the computer which is in our classroom, the one who use to be besides my desk, it locks all the time.*

When Erin and I talked about her wishes about work she said that she wanted to become a hair dresser or an artist because she was good at drawing. She told me that she started to draw when she was nine years old and continued until she was fifteen years old. Erin and I also chatted about the benefits and drawbacks with computers. She explained to me that the computer was important and that it had to do with playing games. She said that the most fun part with the computer was the Internet.

When talking to Anders about mobile phones he told me that he used to borrow his mum’s mobile phone. When I asked him about how he found the mobile phone and the use of it he answered: “Eh, I just need to practice a bit”. His sister has programmed the mobile phone so Anders could get faster access to her phone number. Thus, in a way the mobile phone connected him to his mum and sister in various ways (borrowing the mobile phone from his mum and having easy access to his sister’s telephone number). He had access to a computer at home and, and he also installed things at the computer.

Anders: *Computer games.*
Rebecka: *Computer games, do you find it difficult to do it [install games] or is it easy?*
Anders: *No, I happened to cause several computer crashes, and that is not so wise.*
Rebecka: *Okay*
Anders: *But I happen to delete files sometimes that you should not delete.*

I continued and asked Anders how he has been able to crash the computer, he told me that he did not want to show me but after a while he showed me where he went to change settings. It seemed that Anders was quite well aware of the functions of computers. His telling of how he liked to work with pictures and change their setting in various ways when he worked with the computer could also be seen as an expression of his knowledge. In a way Anders’ difficulties with using the mobile phone and being interested in changing settings on the computer, illustrates how agency get constructed in various forms. Thus while interacting with some other technology Anders felt that he needed more practice while interacting with computers he was very aware of how to interact with it.

In my talk with Martin about access to technology, he told me that he did not listen to music since he is Christian.

* My words in brackets.
Rebecka: *But do you listen to music when you are at home?*
Martin: No.
Rebecka: No.
Martin: No, I do not do that. *I who am a Christian, I do not do that.*
Rebecka: No, *why* do you not do that?
Martin: No, because Christians are not allowed to go that. *To such places, I shall not.*
Rebecka: O, so *you do not go to for instance to X [refers to a local place where music is played*], *and so because you are Christian?*
Martin: Yes.

We continued to talk and it turned out that the family had a radio but that they only listened to the news with it.

Rebecka: *Okay, so you do not have any radio at home?*
Martin. Yes, *we have a radio.*
Rebecka: But *you do not listen to music.*
Martin: No.
Rebecka: Okay.
Martin: *Only news.*

Martin additionally explained that his family did not have any TV due to them being religious.

Rebecka: *But Martin, do you have TV at home?*
Martin: No.
Rebecka: No TV?
Martin: No
Rebecka: *Why do you not have it, do you know that?*
Martin: *It is Christians.*
Rebecka: *It is Christians, is it the same thing because you do not listen to music?*
Martin: Yes.

Martin belonged to a denomination where some of the religious practices interacted with ordinary life practices and sometimes they collided. So, since the TV was seen as sinful, people within the denomination also did not have TV. An interesting aspect is that Martin told that his family had a computer and also a mobile phone at home. In our conversation we talked about what it is that makes the computer fun as well as boring.

Rebecka: *Mm, but you Martin, what do you think is fun to do with the computer?*
Martin: *It is fun.*
Rebecka: *What is it that is fun?*
Martin: *Write* (cannot hear what is being said).
Rebecka: *Now I did not understand, one more time.*
Martin: *First I like to write in.*

* My words in brackets.
Rebecka: *You like to write with it.*
Martin: Yes.

We continued to talk about if there was something which was boring with the computer.

Martin: *It is fun.*
Rebecka: *It is only fun?*
Martin: Yes.
Rebecka: *Is there nothing that is boring?*
Martin: No.

When talking about what the pupils used the computers for, some of them mentioned playing games. Magnus for instance, liked to play hockey games on the computer.

Rebecka: *Mm but Magnus if we return to the computer, what do you do with it then?*  
Magnus: *Play hockey games.*  
Rebecka: *Play hockey games?*  
Magnus: Yes, that is fun.  
Rebecka: *Are you allowed to do that here at school?*  
Magnus: I do not know.  
Rebecka: *Is it that that…*  
Magnus: *If it works.*  
Rebecka: *Do it at home?*  
Magnus: Yes.

Nille was another boy I met during the time in the classes. He was 17 years old and lived in a village outside of town with his mum and his siblings. He had a dog which he was very fond of and which he talked about during the interview as well as outside the interview. During our chat we combined verbal language with sign language. During the schooldays Nille additionally used pictogram. Pictogram can be explained in the following way:

“PICTOGRAM is a system of graphical symbols drawn in white on a black background. Each pictogram symbol stands for a word or a concept, such as “boy” or “sad”. With PICTOGRAM, people with special educational needs and others who lack or have a limited ability to speak, read and write, have a language made up of pictures which serves as an alternative to the written language, helping them to support thoughts and memory as well as being a means of communicating.” (Swedish Institute for Special Needs Education, 2003)

Nille was very interested in the local hockey team and followed their matches via the Internet and also attended their matches outside of school. Thus, when we sat in front of the computer, he visited the local hockey team’s home page.

Nille: *Hockey.*  
Rebecka: *Hockey, is it them you usually watch?*
Nille: [Is silent]

Rebecka: Will see if it finds? Here I think X [the name of the local hockey team], and then we get a home page here. Shall we see what Nille wants us to go to. What do you use to go here then, Nille?

Nille: There.

Rebecka: You go, here we are able to see how they played the last game.

Anders also used the computer game Mulle Meck. He told me that he spent several hours playing it at home. He told me that by using the Internet one could make the game more advanced, by adding more functions via the Internet.

Rebecka: …and so I thought that you perhaps could show what you think is fun to do with the computer.

Anders: Yes.

Rebecka: Mm.

Anders: I find patience fun.

Rebecka: Yes.

Anders: I managed to solve it eight times yesterday at X [a place outside of school]

Rebecka: Oh, did you solve it so, that was not bad. Is there anything more here that you find fun to work with?

Anders: Yes, Mulle Meck also that is fun.

Rebecka: Mulle Meck, what is that kind of thing?

Anders: It is a computer game?

Rebecka: Is it when one builds boats and so?

Anders: Yes, and cars.

Rebecka: And cars.

Anders: That, that I have been sitting many hours, many times with (laughs) at home.

Rebecka: That I can imagine.

Anders: It is great fun because then you can get more parts on the Internet.

Rebecka: Oh, so you can develop the game.

Anders: Yes, so the game can become more and more work.

Thus, the computers for Magnus, Anders and Nille had to do with having fun and to have something to occupy oneself with during spare time. But it was also something which was important for them in ordinary schooldays since their interests were ways to participate on their own terms in the classes. By relating to Anders’ interest in subways he could learn more about that area as well as practice communication via email. He was by his acts a participant in the Swedish information society.

The teachers drew on the pupils’ areas of interest in their ways to work with ICT in school. The teachers additionally sanctioned the activities, which the pupils presented. Thus, the pupils were allowed to play games as well as visit home pages that they liked. It enabled the pupils to search for the information they needed.

* My words in brackets.
* My words in brackets.
* My words in brackets.
The teachers also relied on some technical solution that enabled the blocking of certain pages and disallowed the pupils to visit web pages that were not sanctioned by the school.

Magnus told me that writing love letters to girls was interesting for him. In a way the computer was a way for him to communicate with the girls he fancied. Thus, the communication aspect was of importance. For Martin the computer also was used for communication, for writing. He additionally used it for searching on the Internet. He presented the municipality’s home page and especially the site where he has previously been searching for available work. Thus, in a way the computer was again used for communicative purposes. Remember how Erin also used the Internet for communication with both real life friends and virtual friends. For Anders the computer also enabled him to search information about subways which was one of his main interests. During our conversation Anders introduced me to a web page where one got information about subways. The subway was what Anders would like to work with.

Rebecka: Do you plan to work?
Anders: Yes.
Rebecka: What would you like to work with?
Anders: That I am not allowed to be, as subway driver.
Rebecka: It is subway driver. But why can you not become that?
Anders: No, because one is intellectually disabled, then it does not work.
Rebecka: Okay.
Anders: Said mum, one should not be able to manage it, it is so much work and much to remember and so on.
Rebecka: Okay, so you know that you are intellectual disabled?
Anders: Yes, I know that.
Rebecka: Mm.
Anders: And then I also have DAMP.
Rebecka: Okay.

Erin’s use of visiting a chat room called Lunarstorm when using the computers is also a representation of the communication aspect. She explained that she had a number of friends via Lunarstorm. She was introduced to the chat room by a friend when she was 13 years old. Again, it seemed that the computer was used for communicative purposes. Thus, Anders got information about his main interest and Erin got in contact with her friends.

When Anders talked to me about the computer he told me in a detailed way how one could change settings and also about search engines such as AltaVista. He explained that the changing of settings such as colors and sizes were difficult when he played the games. Besides explaining that he gave me a detailed account of the keyboard functions. He also knew the differences between the different versions of Windows. He told me about some of the shortcomings with Windows 95 compared with Windows 98. He also told me that the Safety Card in school was a very good tool. It meant that it was impossible to delete important files. Thus Anders’ way of changing the setting of the computer could be seen as a way of representing this.
Anders moreover told me that at his vocational training place he has opened up computers and wondered what all the parts are. He would like to know more about this, he says: “I would like to find out how a computer works, how one has built it, also how it, how everything, that it finds so well”.

When talking to Anders about his dreams regarding about what he wanted to do with the computer he said: Would like to go into the computer.
Rebecka: Okay, you would like to see what is inside here…
Anders: Yes.
Rebecka: …in the self?
Anders: Yes, well, if one in a subway movie, then one can for instance drive the subway train (laughs) without anyone knowing about it.
Rebecka: A ha.
Anders: As, as in (cannot hear what is being said) Scrooge McDuck he had happened to put some of his tongs in the computer then Gyro Gearloose had to put them in the computer, in the machine.
Rebecka: Oh.
Anders: Then I thought of that, then I would like, then one can sit in those wagons.
Rebecka: Yes
Anders: Oh so one can see Gladukvart despite, despite that one is not allowed to be there.

Anton was another boy who participated in the study. He was 20 years old and lived in the town during the weeks but travelled to the village where his parents lived during the weekend. At the time of the study he participated in practical training at a restaurant. When Anton and I talked about the computer it was very much about what he called terrible things. He used a link via his email to a web page for a hard rock band. He kept telling me how that page included lots of terrible and scary things while we looked at it. He told me that he liked to see scary movies when he watched TV at home. He also liked to listen to music on the radio. While we sat in front of the computer Anton introduced me to various hard rock bands and their home pages. So, for Anton, the computer was a way to interact with the practices of terrible things.

Thus, in some ways the pupils and their ways of living with intellectual disabilities did not make them different from pupils without disabilities. They used the computers in various ways, such as for playing games, writing, searching for information, communication and also for pure entertainment. An example of this was that during the first part of the study I had a videoconference with the pupils. I connected my computer to a web camera and we communicated on-line. This made it possible to have face-face communication despite that we were several kilometers away from each other. Erin’s use of Lunarstorm also was a way to have contact with other friends who are at a different distance. Communication was one of the areas where the computer was highly used by pupils with as well as without disabilities. But, their disabilities were also part in their ways of using and accessing ICT in that way that they used e.g. specific functions in Words as a way for them to write correct Swedish by using the spelling function.
5.7 The Youths’ Views of the Computer

This part introduces the reader to how the pupils view the computer and access to computers. It additionally links the empirical findings to paintings they drew during our conversations.

When asking Erin about her view of the computer it turned out that Erin had over 50 friends via Lunarstorm and about 5 to 10 friends in the town where she lived. So, in a way using Lunarstorm has widened her friendship. She had contact with people living in other geographical areas. When I asked her what is the best thing with Lunar she said: That you get in contact with each other.

Rebecka: Okay, why do you think that that is important?
Erin: Because that, they, can be someone who wants to talk. Then you add me. To add is that you click on a person to one’s friends. If you enter, if you enter your kp [the nook*] for instance, it is the nook, the front page, when you enter, like entering. Then you go a bit below, and then it says become friend with, then you can click there. If you are family or friend, relationship and perhaps in love.

Erin considered that the computer was important and she also found the Internet the funniest part while some games were more boring. When we talked about difficult things with the computer she could not tell me anything difficult with it. It looked thus the computer was about communication and about belonging with her virtual friends. Besides the computer Erin was interested in painting. When telling me about drawing pictures she said: I always draw within, it is exactly. It looks like a real.

Rebecka: Okay.
Erin: Real, it is as if they are coming out…
Rebecka: Oh.
Erin: Out of the picture.

Thus, when we talked about the act of painting it was also about the feelings that her paintings almost became alive. Thus, the practice became interwoven with sensations.

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34 I have erased names from Anders’ and Martin’s pictures in order not to reveal any information that would make it possible to identify them.
* My words in brackets.
Erin's picture
Anders’ picture
Anders told me that he would like the letters on the keyboard to be put in alphabetic order since that would mean that he would have no problems to find the letters he searched for. Thus, he spoke both of a social reality, how the keyboard was working today, but also about wishes for a future with a new version of the keyboard. Anders picture was a picture where the body was represented mostly on the level of the use rather than as a user. He pictured what he used the computer for playing the game Mulle Meck. His body was further represented in his wish to have a keyboard where the letters are in an alphabetic order. The representation of the body differed in a way from Erin who focused mostly on various forms of applications of the computer such as programs.

When Anders drew he pictured the cd, and the diskette station. He also drew a picture of the scanner and the printer. When he drew the printer box he told me: *And so a box where you keep the paper.*

Rebecka: *Where you keep the paper.*
Anders: *And then keys also.*
Rebecka: *Okay.*
Anders: *You need lots of keys otherwise one cannot change size and so.*
Rebecka: *Mm*
Anders: *For that is how it should be, much technology.*
Rebecka: *Much technology.*
Anders: *Mm, even more keys that usual.*
Rebecka: *Mm. Why do you want to have more keys?*
Anders: *Because then, then you can change the size because sometimes it has one has to do it only on the computer, why can you not do that as well on the machine.*
Rebecka: *Aha, you think like that, okay.*
Anders: *One can think a bit technological?*
Rebecka: *That one can do. But, wha, you when one thinks technologically, what do you think on then?*
Anders: *But that one should put it properly, so, so one does not need to do everything from the computer, why can one not do it as well on the printer, and just push the size one wishes to have.*

Anders used words such as megabytes when we talked about the computer. He knew that it had something to do with the saving functions of the computer. He knew that if you try to save too much on the computer it eventually crashes, similar to when you delete important files. He made the computer a bit personal when he said that his computer at home was a bit ill since he had changed some settings.

Anders’ picture can be seen as what is called a hybrid collective. It is very much about a body that gets embodied in various ways. First he told me that having a keyboard where the letters are put in alphabetical order would help him to work better with the computer. He additionally drew what he preferred to do when he worked with the computer. He mentioned the need to have more keys as a way to be able to give commands to the computer for starting up the printer or scanner. He told me that his computer at home was ill. Somehow the artefact became something with some form of bodily functions. He additionally talked about a wish to know more about how the computer worked. In his talk he made the computer almost like a human.
Martin’s picture
Martin drew the computer box when he painted. He also told me about Windows and drew a picture of the specific website he and I have been looking at. Furthermore, he drew the screen, the mouse and the keyboard. In the picture he also wrote names of relatives. He also liked to draw pictures when he used the computer. He used Paint and showed me how he drew pictures. He also used PowerPoint when he drew. He also introduced me to how he used the email program GroupWise. He was very specific about the topic and also the sender.

When the pupils drew their pictures we sat in front of a computer and talked about it. Some of them painted their picture by looking at the machine while simultaneously including other aspects in their paintings such as symbols, humans, programmes, names of relatives, etc. Furthermore, based on the conversation with the pupils and their pictures it seemed that the view of the computer was linked to the use of technology because the pupils returned to talking and drawing about using computers for playing games, writing, searching for information, communication and also for pure entertainment. In the drawing most of the pupils also drew things that come along with computers, such as screens, keyboards, the mouse, etc. However, the pupils did not only talk about the computer as pure technology. In fact, some of them also talked about the computer very much as something similar to a living thing. An example of this was Anders’ statement about his computer being ill due to him deleting some files. Some of them also drew people in their picture relating to the computer. Either as themselves or other people who were part of computer games. For instance, in Anders’ picture of the actor in the game Mulle Meck and Martin who drew names of living people in his picture. This resembles Turkle’s findings of how pupils regard interactive objects as having qualities, which usually are ascribed to humans e.g. having thoughts (Turkle, 1995:83).
During the course of research in special schools and a partial reading of the Swedish Bill 2004/05:175 it became clear that various actors - both humans (policy-makers, teachers and pupils with disabilities) and non-humans (written documents, computers and mobile phones) are part of the construction of practices around ICT, and disability. Consequently, this part of the analysis aims to open up how an entity like Sweden as a sustainable ICT society for all is an effect of its relationship to other entities - both humans and non-humans (cf. Law, 1999:3-4). Furthermore, it presents that forms of unity as well as differences regarding access and users of ICT are found in the practice of policy-making.

The importance to explore the application of policies is stressed by Dugdale (1999). She shows that there is a need to investigate how policies are constructed by various actors, intertwined with networks of humans and non-humans and how the document comes to fluctuate between forms of unity as well as differences (Dugdale, 1999). To clarify what it means that something is performed in unity as well as differently, I offer my own research as an example. In disseminating my research at academic conferences I explain it in terms of dealing with issues of how different actors (e.g. researchers, pupils with disabilities and technological artefacts) in their everyday practices constitute a form of network where they jointly shape disabled pupils’ agency and subjectivity. In talks with friends and family however, I describe my research as dealing with issues around pupils with disabilities and their access and use of ICT. The research is performed as a form of unity (because the aim is the same) but it also is simultaneously different because it is explained differently (with the use of different words).

Thus in this part of the thesis I will present a reading of parts of Bill 2004/05:175. During the course of this reading there seemed to be a need to do a brief overview of the previous bills concerning ICT. As such this is the starting point for this part. Following this I will present some extracts from Bill 2004/05:175 as a way to illustrate how it suggests ways to make Sweden a sustainable ICT society for all. Additionally, the extracts will be related to some of the concepts used in the thesis. The findings in the analysis are presented under the following themes: the ICT policies in Sweden and a sustainable ICT society for all. The theme ICT policies in Sweden introduce a historical overview of some of the ICT-policies that have existed in Sweden during the years. The theme a sustainable ICT society for all concerns the main goal of the ICT in the Swedish society as being about a dual relationship between making the sustainable ICT society both inclusive as well as making it exclusive. This theme additionally explores how the future of society is seen as an interaction between technology and humans and on some of the proclaimed advantages the policymakers want to achieve by using ICT in the educational system. I want to stress that I have taken snapshots from the parts of the bill which interests me mostly. Thus, the focus has been on statements concerning disability, schools, etc.

In this part the concept of IT is used as well as ICT. IT is mostly used when referring from statements expressed from the bills while ICT is more used in relation to my work.
The analysis is inspired by work within Nordic disability studies mainly about the principle of normalization (Kristiansen, 2000; Tideman, 2000; Nirje, 2003). The concept of normalization is used in the analysis as a way to stress that the principle of it is being practiced in the Bill 2004/05:175 which consequently includes inclusive as well as exclusive parts. This is additionally captured in the work by Moser. She is a scholar who has inspired the analytical work. Her work has focused upon people who have become disabled after road traffic accidents (Moser, 2003, 2005, 2006). In this part of the thesis I relate to her focus on how the normalization, which takes place in society simultaneously, works as a way to create differences among people and is an effect of a relationship between people and technology. Singleton has also been inspiring. She has explored the UK Cervical Screening Programme, CSP (Singleton, 1993, 1998). Singleton (1993) presents in her work how general practitioners, women etc. are part of the CSP. I draw upon her work in this analysis around how various actors are part of what become policies. Additionally, Gardelli has also played a part in my work. Her work has been focusing on people with disabilities and their everyday lives with information technology (Gardelli 2000, 2004). Her work is used in the analysis as a way to relate to how technology and human are equally important and problematic in the everyday life of disabled people.

6.1 The ICT Policies in Sweden

In this part a background is given to Bill 1995:96:125, Bill 1999/2000:86 and Bill 2004/05:175. I give an overview of how the bills in Sweden have grown out of acts and reports around the world and also when in time they have appeared.

In 1963 the Bill 1963:85 was introduced. It was a policy which introduced how computers should be implemented in the Swedish society (Johansson, 1997:85 referring to the Bill 1963:85). Johansson states: “The argument was that the only way the national, regional, and local authorities could manage the rapidly growing administration was by rationalisation through the use of modern technology- i.e. computers or EDP” (Johansson, 1997:85). Johansson presents in his thesis how computer technology was introduced and how it has changed. He shows how various changes happened between the 1960s to the 1990s and how it has lead to various discourses around computer technology. He presents how in the late 1970s and early 1980s the first personal computers were introduced in Sweden (Johansson, 1997:137).

During the 1990s the information technology became of political importance for countries all over the world (Johansson, 2006:83). Johansson (1997:173) says: “Internationally, one starting point of the information superhighway hype or IT policy wave can be set at July 1993, when the US congress adapted the National Information Infrastructure (NII) Act.” The European Union presented in 1994 its own report (Johansson, 2006:83). Around the same time Sweden came to pay attention to the drive for an IT society.

36 For a detailed picture of the development of the IT policies in Sweden as well as in Norway see Johansson (2006).
For instance, the Swedish Prime Minister Carl Bildt strongly emphasized the need to ensure the information highway by setting up the first IT-commission in 1994 (Johansson, 1997:182,203). In 1994 the rightwing government published "Informationsteknologin. Vingar åt människans förmåga" (SOU 1994:118). It included various issues around information technology and societal change (Johansson, 2006:87-88).

It took until 1996 for the government to present Bill 1995/96:125 to the parliament (Johansson, 1997:196; Johansson, 2006:115). As Johansson (1997:196) and Johansson (2006:116) present, it aimed among other things to highlight how ICT was a way for Sweden to strengthen its becoming of an information and knowledge society. In 2000, Bill 1999/2000:86 was presented. Johansson (2006:212) argues that it among other things argued for both physical accesses as some way of changed attitudes towards ICT. Additionally Sweden was in this bill to be seen as a leader in the ICT development (Johansson, 2006:212). In 2005 the Government presented the Bill 2004/05:175. The goal as proposed by the Government was that: “Sweden must be a sustainable information society for all” (Ministry of Industry, Employment and Communications, 2005:7). The change from Sweden as an information society for all towards being a sustainable information society for all is expressed as: “This [inclusion of sustainability] underlines that the information society can contribute to a development of society that takes equal account of economic, social and environmental dimensions” (Ministry of Industry, Employment and Communications, 2005:7).

The bill includes three sub goals and these are:

- **IT must contribute to a better quality of life and help improve and simplify everyday life for people and companies.**
- **IT must be used to promote sustainable growth.**
- **An effective and secure physical infrastructure for IT, with high transmission capacity, must be available in all parts of the country so as to give people access to, among other things, interactive public e-services.**

(Ministry of Industry, Employment and Communications, 2005:7)

In the publication from the Ministry of Industry, Employment and Communications (2005:7) two important circumstances to realize the goals that are mentioned are public confidence in IT and coordination.

The Minister for Communications and Regional Policy, Ulrika Messing, gives a view of an information society where technology plays a major part, she says:

“Society changes continuously and modern information technology is at the heart of the change. The new technology affects and changes our way of working, our contacts with public authorities and agencies, our schools and education, indeed, every part of our lives. It gives us welfare gains and revolutionises opportunities for a happy and healthy life.” (Ministry of Industry, Employment and Communications, 2005:5)

* My words in brackets.
Messing’s statement is interesting since it seems that in her claim she expresses that society changes and that technology is of great importance in this change. This bears resemblance with Mörtberg and Due (2004:9) who argue that information technology carries with it many visions and that might explain to some extent that ICT sometimes is seen as the driving force for achieving the goals. But simultaneously as the technology is the driving force for an Information Society the citizens in Sweden are stressed as of importance. Messing says: “Everyone must have access to IT” (Ministry of Industry, Employment and Communications, 2005:5).

6.2 A Sustainable ICT Society for All

In this part the intention is to present the governmental goal of the ICT in the Swedish society. I present a picture of how the making of the sustainable ICT society relies on the dual relationship between making it both inclusive as well as making it exclusive for the citizens.

In the introduction to the policy, it is stated: “The overall IT-political goal is that Sweden shall be a sustainable information society for all” (Bill 2004/05:175:31, my translation). The goal above suggests that Sweden envisages the becoming of fully inclusive information for all its citizens. A dual claim, which can be seen as both normalizing and making different. Thus the bill argues for the inclusion of marginalized groups such as elderly people, people from various societal class and ethnic background and women and men (Bill 2004/05:175:38-39,43). Sometimes it means making special efforts for people who are considered marginalized to be included in the ICT society, in order to have the same opportunities as people who are not seen as marginalized. The suggestion of special efforts to make the ICT society available to marginalized groups is for me an effect of what sometimes is called normalization.

The concept of normalization evolved during the 1950s, 1960s and 1970s in disability studies mainly by work by Nirje and Bank-Mikkelsen (Kristiansen, 2000; Tideman, 2000:50-51; Nirje, 2003). This principle was part of the development of remodeling the institutional living for people with intellectual disabilities (Tideman, 2000:51). This could be seen as a way to include people with disabilities in the society based on having the same possibilities as people without disabilities. Tideman writes: “The principle of normalization was as such well in line with the welfare state’s ideal of equality and justice” (Tideman, 2000:51, my translation). The principle of normalization later on came to develop in line with the principle of integration (Tideman, 2000:52). The principle of integration meant e.g. that people with intellectual disabilities should live among other citizens in society (Tideman, 2000:52). The two principles had a key role in the deregulations of the institutions and the creation of open care in the wider society (Tideman, 2000:52).
The principle of normalization can be regarded in three different ways (Tideman, 2000:53). The first way to talk about normality is what is usually called “static normality”, meaning that “…normality is the normal state, the usual or the average” (Tideman, 2000:53, my translation). This can for instance mean that one judges something against a specific scale. For instance, one can look at a person’s IQ and say whether someone lies within the normal scale for her/his age and so on. The normalization in this case means that society has a responsibility to make society available for the individual e.g. by special accommodations in schooling. The focus is not on changing the individual rather the changes are to be made on a societal level. Another way to consider normality is the “normative normality”, meaning that “…normality is the values about what is the normal that exists in a society at a given time” (Tideman, 2000:53, my translation). For instance, in today’s society it is considered normal for a pupil to have access to computers at school. Finally, there exists what Tideman considers: “…individual or medical normality, meaning that an individual is normal/”healthy”, that is to say not deviant or sick” (Tideman, 2000:53, my translation). For instance, if an individual suffers from depression this is seen as abnormal and she/he needs care e.g. by medication or hospitalization. Tideman is of the opinion that there exists a Scandinavian way and an American way to look at normalization (Tideman, 2000:54). For him the Scandinavian perspective is not about making people with intellectual disabilities normal but that they should have equal opportunities as other people (Tideman, 2000:54). He says: “It does not mean that people with intellectual disabilities is to become like “your average Mr. Jones”, but that they should get prerequisites to participate in and to be part of “the normal” based on their own conditions” (Tideman, 2000:54, my translation). The principle of normalization is dualistic. It is simultaneously a good principle since it works to improve disabled peoples’ lives in society. At the same time it can become an argument for politicians to use it in their changes as a way to talk about normal citizenship (Tideman, 2000:61). For instance cut downs in special schools can be argued as being part of the wider society’s cut down and by that this also becomes what is considered to be normal. Kristiansen (2000: 171-172) states that some misconceptions regarding the normalization principles are that it is about making people normal or just to do normal stuff. Söder (2003:207) highlights some of the critiques, which have been raised against the principle of normalization: e.g. the one-sided focus on disabilities and the leaving out of discrimination based on gender, class and ethnicity.

The concept of normalization additionally is in focus in Moser’s work around disability in everyday life among people who have become disabled after traffic accidents (Moser, 2003). For her normalization is problematic to some extent, she says:

“But as long as reality is built on the assumption that there is a universal and so normal body, non-standardized and disabled bodies will always come out as problematic and fail in performing as disembodied mind. Indeed, they are doomed to fail. In this way normalization contributes to the reproduction of the differences and asymmetries that it seeks to escape and undo.” (Moser, 2005:677-678)

* The three ways are my translations.
I consider that the three aspects of normality actually are present in the practices around making Sweden a sustainable ICT society for all. So, in a way, normalization is what is going on in the Bill 2004/05:175. On one hand one can say that there is the existence of the static normality in the policy in such a way that the citizens in Sweden who in one way or the other is seen as being out of the average, normal or usual by for instance lacking equal access or use to ICT (being disabled, being women, coming from certain class, coming from different ethnic background) need to get special efforts. However, the normative normality simultaneously exists since the value about what is normal has also shifted during the years. For instance, in today’s Bill 2004/05:175 there is underlying values that all citizens should have access to ICT compared to the focus on the Bill 1963:85 where the benefits for administrative purposes where highlighted. The individual /medical normality also exist in such a way that in parts of the policy it is stated that the ICT is a way to make people with disabilities normal/healthy by the use of ICT. It seems that ICT is a tool for diminishing ethnic problems, aging issues and class issues. So in a way one can see that the process of normalization within the Bill relies on both inclusion and exclusion. Thus, by arguing for special arrangements for certain groups of people (based on gender, age, disability, class, and ethnicity) the bill is partly inclusive. One puts special efforts into making people belonging to marginalized groups as participants in the society, including them. But at the same time they are seen as being out of the average user and having average access. By that there exists a form of exclusion. It is also based on inclusion of for instance gender and disability, and this has partly been about values of the normal. So, in a way the norm is for a woman to use ICT as much as a man. Somehow men are the norm, which women should adapt to. In this way there is an inclusion going on. But it also works simultaneously exclusive since there is no need for change in men instead the change is to be done among women and disabled people for instance.

Mörtberg and Due (2004:9) show how women (girls) and men (boys) often are black-boxed into categories which have different interests. They exemplify this with a text from the Nordic Council of Ministers\(^37\) where it is stated how girls are less interested in IT and have less access to the technology and how boys are more interested in the technology that comes along with IT while girls focus more on the communication parts of the Internet. This is interesting in relation to the ICT policy since in it is also stated that more women need to use ICT since they need to get to the same level as men. Mörtberg and Due (2004:10, my translation) state: “IT and gender is not only about equality but also about prevailing political ideologies.” I would suggest that the relationship between equality and prevailing ideologies are equally important. The differences that are included in the bill focus on the categories, gender, ethnicity, class and disability, etc. But it does not include the possibility of difference between people within the categories. It structures the categories as being about similar needs and efforts to be made.

Finally, when one looks at the way the policy talks about ICT and people with disability the focus is to make them (people with disabilities) become normal users.

\(^{37}\) Nordic Council of Ministers is in Swedish Nordiska ministerrådet.
This is found especially in parts of the bill when focusing on the disabled body for instance when talking about the needs for special arrangements for people with visual impairments (Bill 2004/05:175:87). Somehow, there seems to be a process of normalization that goes on. Moser says:

“The normal implies the abnormal, the deviant, and lacking. However, they not only build upon it, but also help produce and reproduce it.” (Moser, 2005:678)

So in a way making things normal also constantly reproduces the abnormal use and access.

Another statement says:

“Accessibility for all brings matters to a head in the case of the disabled and other special groups at risk of exclusion from the information society. It is important that the information society becomes inclusive, not exclusive” (Bill 2004/05:175:39, my translation).

The argument in the above extract is interesting when relating it to Moser who presents how policies among other things distribute away agency and subjectivity from people with disabilities. She states: “Unlike able-bodied people, who are seen inherently to have it, agency and subjectivity are often, and in an almost systematic way, distributed away from disabled people” (Moser, 2005:672). Moser additionally refers to Star’s work dealing with standards and states: “Her argument is that standards enable and create orders for those with standardized bodies and subjectivities, but make trouble for, disable or exclude others with non-standardized bodies and subjectivities” (Moser, 2005:677). Additionally the policy document also stresses special solutions for people with disabilities. It looks like technology is seen as a solution to the problem of disability. I value that if one regards disability and technology as part of a relationship rather than as a problem of disability one might also enable it for people to participate in a sustainable society for all on their own terms. Moser (2003) has explored disability in everyday life and the relations between bodies, agencies, subjectivities and technology. I want to stress that like Moser I consider that agency does not totally reside in human bodies. Agency gets its life in relations. For instance, from the study with the pupils it became obvious that their agency was constructed in relation to technology but also to other humans.

A bit below in the Bill it is stated: “While the use of IT increasingly becomes something natural for most people, it is also important to emphasize that this tool can not fully replace the traditional communication forms, for instance for people who for various reasons can not or will not use the technology” (Bill 2004/05:175:39, my translation). In a way it looks like inclusion and exclusion exist on the same level.
In another part of the bill one can read:

“Within IT new tools are developed which enable increased participation for women and men with disabilities. These tools can provide people with disabilities the possibility to independently carry out things that are obvious to others, to read, write, make oneself understood or understand others, participate in education or manage a work.” (Bill 2004/05:175:87, my translation)

This extract somehow makes distinction between women and men with disabilities. At the same time the text lumps people with disabilities together as if everyone who is disabled has a wish to be independent. The independence of performing a task that is evident for others might also re-construct the othering both of disability as well as of independence. There is an underlying view of disability as being about being independent versus dependent and not as existing in mutual shape. The process of being understood and understand others feels somehow like being missed out by being disabled. It seems that it is people with disability that need to be changed.

In the following I present by some extracts how the Bill 2004/05:175 is an effect of relationship between humans and non-humans.

“During the last two hundred years an acceleration of technological development has meant radical societal changes. At the heart of this development has always been man’s desire for a better life, social exchange and increased knowledge. Now it is the information technology (IT) which dominates the technological development.” (Bill, 2004/05:175:31, my translation)

Further down we can read: “But it [a responsible politics] also involves that the risks and apprehensions that exist with modern technology are taken seriously” (Bill 2004/05:175:31, my translation). From these extracts we can see how it is stated that ICT is about the interaction between technology and humans. ICT can be seen as form of technological potential which people should make use of to help them in the aspiration for a better life, social exchange and increased knowledge. But simultaneously it is stated that ICT is about the interaction between technology and humans based on an argument that there is a form of technological fear related to ICT.

Moreover, the politics around Bill 2004/05:175, which might seem to be a stable entity, actually builds upon constituent parts (humans and non-humans) which sometimes consist of what Singleton (1998) concerns to be instable parts. An example of the interaction between ICT and humans are found in Gardelli’s work (2000, 2004). In her thesis she presents how the participants’ agency (from her study) by the use of IT has enabled it for them to influence their everyday lives, how their disabilities have changed and how some of them have acquired occupations. Gardelli’s findings also outline how the participants have been able to influence their situation in the society. Technology such as e-mails and web pages has been part of a changed social interaction for the participants. The technology has additionally increased the social networks.

* My words in brackets.
For some of them it led to building up new relationships as well as returning to old relationships. It additionally meant that some of the participants got into contact with friends and relatives in virtual life. Gardelli’s work presents the conditions that are of importance in order to be or not to be a user of ICT. She has found out among other things that changes in using has changed the way of being a user, technology and aids are of importance and emails has additionally been of importance.

“This puts demands on a high digital- and media competence among teachers and pupils. It can for instance include the pupil’s interest, attitude, security awareness, and ability to in a safe way use appropriate digital information- and communication tools to search, store, put together, and critical value information, and perform result, create new knowledge and communicate with others as an active citizen in the society.” (Bill 2004/05:175:108, my translation)

This extract outlines that the interaction between technology and humans in competence issues is highlighted by the policy makers’ argument for ICT as a pedagogical tool for teachers to improve pupils’ competence and knowledge. Thus it is once again technology and humans who together should achieve increased competence. The last extract additionally shows that the investments of ICT in schools manifest as knowledge, e.g. by the development of ICT as a pedagogical tool as a way to increase knowledge and communication. Thus, technology forms a bridge between people as well becomes a tool for increasing one’s own knowledge. Knowledge and communication thus belongs both in the relationship between humans and non-humans.

6.3 Summary

The analysis has features in common with Singleton’s work on the CSP (Singleton, 1993, 1998). In her work she shows that certain actors defined the relationships, which were necessary to construct the CSP. As the analysis shows, certain actors such as the policy makers, defined and associated relations between citizens, disability, gender, class, age, educational level in order to construct their concept of a sustainable information society for all. There is a part of the Bill 2004/05:175 which states how technology will enable people with disabilities to be part of a sustainable information society for all.

Moreover, the findings recall Singleton and Dugdale’s claims that stability and continuity need to interact with instability and controversy (Singleton, 1998; Dugdale, 1999). My findings show that the continuity of the Bill 2004/05:175, the goal to turn Sweden into a sustainable information society for all, can only be achieved by it interacting with controversies, e.g. the range of software the pupils can use is limited by the availability mainly of older computers, so that the pupils have to adapt the ICT to suit their individual needs.

The research additionally reflects Dugdale’s study (Dugdale, 1999) by showing that Bill 2004/05:175 fluctuates between being different and being similar.
For instance, the policy makers argue that the information society will be achieved by changing pedagogical practices. The pupils are working towards the goal of the Bill 2004/05:175 by using and adapting ICT as a pedagogical tool in their work. However, both policy makers and pupils are working towards this goal in different ways. To illustrate this, it can be seen that while pupils practice and policy-makers talk about ICT as a pedagogical tool, there are also differences in how each groups perform practices of ICT as a pedagogical tool. For the policy makers, one form this may take is by the development of pupils’ competence, but for the pupils, competence is not what is regarded as important.

To conclude, there are as demonstrated, some interesting issues arising from this analysis. Firstly, it presents that an entity like the ICT policy takes shape as a result of its relationship with other entities. Bill 2004/05:175 takes its shape as a result of its relationship to teachers, pupils and computers. Thus the claim for increased knowledge in schools is part of relationships between teachers, pupils, other citizens and technological aids. Bill 2004/05:175 does not exist in vacuum. It relies on practices in e.g. schools. Secondly, the ICT policy additionally is an effect of its relationship to people with disabilities and vice versa. The ICT policy relies on the view to make Sweden into a sustainable ICT society for all at the same time by making special arrangements for people with disabilities. In that work they argue for an inclusion of all kinds of users as well as contributing to a process of normalization. Thirdly, the ICT policy which one can see as a durable text, also consist of instabilities in such a way that it has existed in various form making it durable but also consisting of technological fear that children needs to be taken into consideration so they do not access the wrong sites.
PART FOUR – DIALOGUE

The base for this thesis was my personal experience of working with pupils with intellectual disabilities as well as PhD studies within the area of ICT and disability. The focal point of interest was initially on the pupils’ access and use of ICT. The aim of the PhD project later on came to focus on how ICT, agency and disability become constructed in a collective made up by actors such as humans (pupils with intellectual disabilities) and non-humans (computers, mobile phones, policy-documents).

7 Bringing Actors Together – Discussion

This thesis has focused on the connection between disability and information and communication technology (ICT) and on ways for researchers to study humans and technology.

More specifically, one of the study’s focal points has been on disability and how pupils with intellectual disability live disability, how the pupils regard disability and technology (express disability and technology to be). A research question which evolved out of this was how do pupils with intellectual disabilities see disability and technology? I have additionally had an interest to explore how the pupils talk about themselves as users and how this is in turn also relates to policy (more specifically, on the expressions in various statements in the Bill 2004/05:175 and its focus on use, user and access). So, I related that interest to the following questions: How do the pupils use technology and see themselves as users of technology? How do policy documents, such as Bill 2004/05:175, express issues about use, user and access? Another concern has been on how disability becomes intertwined with technology, for example, how the body becomes intertwined with disability and technology as part of processes between various actors (both humans and non-humans). I have also explored the way the pupils see themselves (their subjectivity), and how they act (their agency), as part of processes between humans and non-humans. Also how actors in a form of collective bear effects on the body and its intertwining with disability and technology. Two important questions in the exploring of that area have been: How do technology and disability become interwoven within practices of hybrid collectives (human and non-human actors)? In what ways are agency and subjectivity a process of relations between humans and non-humans?

Finally, a major focus in this work has been on methodological considerations, and methodology and theory have received an extensive space in the licentiate thesis. Thus, I have had an interest in finding out how to study humans and technology without relying on a dualistic perspective, by not separating between humans and non-humans, while at the same time being responsible in my claims as a researcher. Because I consider that as a researcher of ICT and disability, I am also part of the construction of practices of encounters between practices, disability and technology and the relation between actors (both humans and non-humans). More specifically, I have had an interest in disentangling how one as a researcher can give voice to human and technological interaction when researching disabled pupils’ agency and subjectivity.
I consider that I as a researcher am also part of the practices that influence an Information and Communication Society for all, by developing, from a situated knowledge perspective, ways to consider how various actors’ everyday practices mutually interplay with disabled pupils’ everyday life and school practices. Thus, it has during my time as a preschool teacher and as a PhD student been of great importance to give a voice to pupils with intellectual disabilities. I wanted to bring their ‘voices’ together in some way and connect them to other actors’ voices (e.g. to the governmental ‘voices’). It is my construction, but hopefully the voices find ways to connect in the thesis.

I wish to emphasise that my research does not try to explain the connections between different actors and their practices, rather it aims to develop an understanding of how different actors (in a specific location in Sweden) in their everyday practices mutually interplay with disabled pupils’ agency and subjectivity.

7.1 Discussion Concerning the Research Questions

In this part I aim to discuss the research questions by relating it to my findings.

*How do pupils with intellectual disabilities see disability and technology?*

The pupils mostly talked about disability as existing in relation to other people and in relation to other artefacts. Martin for instance explained that he could do the same task as his siblings, fetch wood, at home. Thus, he did not regard himself to be different from his siblings. He was aware that he lived with intellectual disability but that did not seem to restrict him in his everyday life in any greater sense. That disability was part of relationships to other people additionally became apparent when the pupils compared themselves to other people, for instance in their ways of conducting tasks, thinking about future career possibilities. At the same time, some of them also expressed being different from others for instance something which influenced their possibilities to their future career. Anders expressed that his relation to intellectual disability meant that he could not get the career he wished for. However, in their relation to technology some of the pupils became enabled to conduct tasks which they could not conduct otherwise.

Anders solution to the fact that he could not become a subway driver was to include material (movies, pictures) from the web about the subway into his everyday life as well as sending emails to a subway driver. So, technology was an actor which the pupils interacted closely with. Technology such as the computer was for Anders also the thing which was funniest in school. For him, the computer is fun to work with and he likes to play Patience and a computer game called Mulle Meck. The Mulle Meck program enables the player to build for instances cars, boats, etc. It is an interactive form of game where one as a user works in close co-operation with technology.

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38 See the part 4.2.2 Situated Knowledge for an introduction to the concept of situated knowledge.
For Erin, the technology enabled her to have an extended social network compared to the ones she had in her hometown. By using Lunarstorm she was enabled to chat and stay in contact with almost 50 persons.

The disability additionally gets constituted in various ways. In some ways the pupils regard that disability can be seen as located in their bodies. For instance, one of the pupils, Anders, argued that he could not do certain things since he had an intellectual disability. But simultaneously he could participate in activities related to his wish of a future career which he according to himself never could reach. Thus, it is as Shakespeare (2006) argues neither fruitful nor possible to divide disability from an angle of it being either social or medical. They are both part of what disability becomes. Martin for instance, expressed in the interview that he did not know what it meant to be disabled until we related it to his siblings. Then he started to talk about activities he could do which were similar to those his siblings could do. In a way intellectual disability can be seen to be an effect of relationships between the individual and her/his body to other people as well as other artefacts (technology). Thus, for both Anders and Martin the intellectual disability exist in their body, but it is their bodies in relation to siblings, subway drivers, and computers which give life to what living intellectual disability becomes in everyday life.

My opinion is that it is the same for the use of ICT. Thus, it is not fruitful to divide use of ICT from a standpoint that it will diminish disability or that it will create disability. Disability and use of ICT is related to each other. So, when Anders communicated with the subway driver in Stockholm he still lived with the disability but it was different compared to if he would only focus on that he would not have that career in future life. Sometimes disability is diminished while at other times ICT is a constructor of it. It is the collective of humans and non-humans that contribute to the relationship. When talking about computers and mobile phones some of the pupils explained technological parts which are of importance when one uses technology. Thus, Erin explained how being connected to a modem differs from being a user of broadband. Additionally she told me how certain technological services are blocked at the school. I also came to learn how you can crash a computer. Through Anders I learned the differences between Windows 95 and Windows 98, megabytes, etc. and that one can think technologically. Besides technological parts I also came to learn in my conversation with Anders how he had thought about the possibilities to change the settings of the computer and about his wish for having a better solution to how to dial people with the mobile phone. There seemed to be an urge to improve the ways to use the technology. Sometimes it felt like technology was seen as a living thing, for example, in the interview Anders talked about the computer that has crashed as someone being ill and how the computer when it gives you information seems to find the information so well.

How do the pupils use technology and see themselves as users of technology?

In the second research question I was interested to explore the ways the pupils describe in what way they use and see themselves as users of technology.

98
During the time of the study it became possible to see that the pupils had access to various forms of ICT (mobile phones, computers, etc.). They had similar use of it by for instance writing things on the computer at school as well as calling friends and parents while out of school. One of my conclusions is that the pupils use technology in various ways. They used computers and different programs such as Microsoft Word, Internet Explorer during their school days. At their spare time they additionally used programs such as MSN Messenger and Lunarstorm for communication. As users most of them were users to a high extent. Some of them were able to configure computers at home for their purposes. Some used them to surf while others used them for communicating.

I would say that the pupils resemble the findings from the study by Medierådet (2008). When the participants were asked what they like to do when being online 73% of the participants in the study said chatting, 65% said playing games, 21% emailing, 34% for homework and studies (Medierådet, 2008:36). The pupils in my study also used the computer for similar purposes. It actually looked like when they used all kinds of technology the communicational part was explored as important. Also playing games was vital. Magnus had a mobile phone which he communicated with his mother with. It enabled it for him to be in town and when he got a call from his mum he went home and had dinner. Erin also used the technology for communication. She started to use the Lunarstorm services on the mobile phone instead of on the telephone.

*How do policy documents, such as Bill 2004/05:175, express issues about use, user and access?*

When I explored Bill 2004/05:175 concerning issues around use, users and access it seemed like the bill did not consider differences among the users. In the bill it is clearly stated that: “The overall IT-political goal is that Sweden shall be a sustainable information society for all” (Bill 2004/05:175:31, my translation). But the bill additionally expressed that use and access to ICT exist in relation to ethnicity, gender and disability and so on and that these differences influence both access and use. For me people in Sweden get lumped together based on differences such as gender, age and disability. There does not seem to be any possibilities to talk about the users as existing in boxes which resemble but also differ from one another. In the document it is sometimes presented that there is an overall way to include everyone from a viewpoint of equality. However, the concept of equal access for all one runs the risk to miss out the variety among people. Thus, in the document it is often presented that disabled people are only disabled. The fact that people who are defined as disabled also have various other issues in their life is missed out.

Moreover, it is important to highlight that some people run the risk of being marginalized in relation to the overall citizens who are seen as normal or the norm. This in turn means that the bill highlights the importance to find means to include groups which might be excluded. I do value it as of importance for the inclusion of all but one must be aware as scholars in disability studies have presented, that inclusion also relies on exclusion.
Education is another issue of the bill where it is not problematized that pupils are
different as well as similar from each other. It seems like the government is of the
opinion that the people within the groups have the same wishes and use of technology.
Furthermore, the interaction between technology and humans in competence issues is
highlighted by the policy makers’ argument for ICT as a pedagogical tool for teachers
to improve pupils’ competence and knowledge. It is once again technology and
humans that together should achieve increased competence. The bill shows that the
investments of ICT are twofold: firstly, the investment is represented by the quantity of
technology (computers, fibre-optics, etc.). Secondly, the investments manifest as
knowledge, e.g. by the development of ICT as a pedagogical tool. An underlying
principle, for the arguments, is that it is both humans (e.g. teachers and pupils) with
their knowledge, and technology (fibre-optic cables, computers and computer
programs) that will achieve the goal. But simultaneously it is stated that ICT is about
the interaction between technology and humans based on an argument that there is a
form of technological potential which people should make use of to improve their
competence and knowledge.

It is additionally not problematized that access is an issue where one can question if
everyone has the same wish to access as everyone else. As mentioned earlier, the equal
access argument seems not to consider the differences among the people. Additionally,
ICT is also about interaction between human and technology. Sometimes as presented
in the bill ICT is of great importance while at other times the risk with it is
highlighted. Thus, somehow ICT might be seen as a concept which is stable but relies
on parts which are less stable such as humans and technology.

_How do technology and disability become interweaved within practices of hybrid collectives (human
and non-human actors)? In what ways are agency and subjectivity a process of relations between
humans and non-humans?_

Technology and disability are interwoven within practices of various forms of hybrid
collectives. For instance, sometimes disability is diminished by the use of technology
and one cannot separate whether it is humans or non-humans that contribute to this.

From the study with the pupils as well as from the reading of the bill it became obvious
that agency is a process which is created among both humans as well as non-humans.
This is also in line with the subjectivity.

Similarly to Moser (2003) I would say that agency and subjectivity is regarded as
something special when dealing with disabled people. It is sometimes highlighted that
ICT will enable agency and subjectivity to a higher degree, however this often
becomes a way where agency and subjectivity get distributed away. Agency and
subjectivity are not only part of humans, instead like Moser (2003) and Callon and
Rabeharisoa (1998) have shown they are something which comes into existence in
relation between human and non-humans.
The study has presented that technology and disability in various ways gets interwoven with what one might call practices of hybrid collectives. In practices in school one finds networks consisting of actors who are both human and non-human. Sometimes it is difficult to separate the actors based on the human and non-human criteria. Thus, what unites all the pupils in the classes is that they use technology in various ways during their everyday life in the classroom as well as outside. It is neither possible nor vital to separate, rather it become possible to start to see that the way we use and rely on technology bear resemblances between users with and without disabilities. Technology is part of everyday life. By exploring access and use of technology from an angle of it being a unifier we are all users however the way we use and access it might differ. I would say that the pupils in the study have made me aware that use of technology is sometimes similar between them but also different between them. It is not disability which is what solely determines rather it is the pupils’ relation to other actors which makes up a collective that influences access and use.

7.2 Discussion Concerning Methods

In order to understand how ICT and disability become constructed among actors’ practices some of the actors’ voices needed to be brought together and reflected upon. As a way to catch practices, relations and the process I relied on methods such as interviews, observations and partial reading of policy documents. The story, which the thesis presents, is partly a story, which consists of words by the pupils, texts and me. I am the one who have interpreted things. I have interviewed the pupils in Swedish and transcribed their words into English. I have additionally also in my interviewing relied on my previous work experience and as such asked questions as I would have done as a team of staff. It might look like some questions are striving for a confirmation of a specific answer but it is more about findings ways to get closer to the ways the pupils wishes to answer. Thus, the story told in this thesis is also an effect of a relationship between the pupils, the texts and my interactions with them (cf. Alander, 2007). This is for me a kind of enabling a situated knowledge approach, a methodological tool which I consider as of importance when dealing with research. This kind of work and method does not provide a universal answer as to how access and use is to be found among pupils with intellectual disabilities. Rather the thesis is a work which aims to present how things look for a specific group of pupils in a specific part in the world. Of course there might be similarities and differences to other groups in the rest of the world but that has not been any aim of this work and my way of understanding and wishes of conducting research.

The observations were used partly as a way to explore things which could not be expressed by words. Some of the pupils did not have verbal speech and observation became one way for me to get hold of their ways to live with disability and technology. I also relied on observations as a way of capturing the relationship between technology and non-humans. The observations were problematic to write about mostly since I wrote my field notes after the days in the school. This meant that I did not remember all I saw, and since I was familiar with the setting it was also difficult to write detailed notes.
The reading of the policy document was also of importance. It was a way of capturing the policy-makers rhetoric around humans and non-humans and their relations. It was a form of document which was new for me and it was sometimes difficult to grasp the underlying message.

7.3 Discussion Concerning Theories and Methodology

This thesis has focused on the relationship between disability and technology from a viewpoint of pupils with intellectual disability. The approach to explore the aim and the research questions was based in a theoretical use of work within the field of disability studies, actor-network theory -ANT, feminist studies of knowledge and science, feminist studies and gender and technology and body, dis/ability, subjectivity and agency. One of the central parts from these approaches is the relying on a viewpoint where the body as well as technology exist in close relationship. They additionally present how society (humans and material matters) contributes to issues concerning the body. The theories additionally bear resemblance in the way they do not start out from dichotomies such as social vs. medical, or social vs. technical. For me this is important since this enables it for me as a researcher to incorporate the complexity in issues around disability and technology. However it is also a process which demands a lot of time. In my way of working I have tried to combine the three fields similarly to Moser (2003), but compared to her work I have highlighted pupils with disabilities. I have in the thesis presented that access, use, subjectivity, agency and disability form processes where actors such as humans and non-humans encounter. By combining the theories in the thesis I have been enabled to introduce that the relationship between technology and disability is not pre-given, it is something which is done in relation to each other. From disability studies I gave an overall view of the individual model and the social model of disability. I additionally explored disability from the angle of it being about bodies, society, and technology. Shakespeare (2006) argues that bodies cannot be separated from the environment when one explores disability. Thus, an aching body can cause disability despite that you have a well settled environment. For me, disabilities studies such as Shakespeare’s work can enable it to include issues of disability into science and technology studies. One example is Shakespeare’s way to deconstruct dichotomies between the social and the medical model of disability. This resembles for instance work from science and technology studies such as ANT (cf. Moser, 2003, 2005). Moser’s work presents how societal as well as bodily issues contribute to what living with disabilities after traffic road accidents become. I additionally explored work regarding ways to define intellectual disability (Sonnander, 1997, 2005) and the principle of normalization (e.g. Kristiansen, 2000; Tideman, 2000; Nirje, 2003).

Another area of interest come from some studies which focuses on children and adults with disabilities and technology (work by Brodin & Lindstrand, 2003, 2004, 2007; Gardelli, 2004). Despite this I have not found any work where the focus is on how the lives of pupils with disabilities get constructed within their relations to other actors’ practices.
Those who deal with other actors’ practices focuses mostly on parents, teachers, etc. and not so much on the mutual relationship between human and non-human actors (e.g. Lindstrand, 2002, Brodin & Lindstrand, 2003).

Additionally, from science and technology studies, I have explored ANT and especially research work of Callon (1980, 1986a, 1986b), Law (1986, 1992), Latour (1988, 1999), Singleton (1993, 1998), Singleton & Michael (1993), Elovaara (2004) and Moser (2003, 2005, 2006). I used it as a way to illustrate how people and technology co-constitute a form of collective where disability, agency and subjectivity are results of processes of relations in the collective. Further this approach is a way to show how practices around technology and disability consist of lots of complexities and uncertainties that interacts with certainty and stability. ANT was also introduced since it enables it for one as a researcher to explore how agency and subjectivity arise in a relation between humans and non-humans and that it gets materialized in practices.

From feminist studies I presented how issues concerning knowledge and science have been debated in feminist studies and their critiques of gender and science. I also introduced Haraway’s concept of situated knowledge (Haraway, 1991). The situated knowledge perspective has been a way for me to find ways of being accountable for one’s research. The situated knowledge additionally was used as a way of taking a standpoint when I conducted the research. Thus, by relying on conducting research from a situated knowledge approach I was enabled to locate myself among different actors e.g. Bill 2004/05:175, teachers and pupils and as such also highlight how they regard issues around disability, ICT, etc. The situated approach additionally enabled me not to make general claims but to take a standpoint. I additionally value the situated knowledge as of great importance for me. By locating myself in the field pupils, parents and teachers as well as the other staff at the schools granted me access. By being enabled to draw upon previous work practices I had an additional advantage whilst simultaneously having difficulties questioning things that I was familiar with. I regard that a situated knowledge perspective might enable scholars in disability studies as well as science and technology studies with ways to take a political stand when one does not wish to start out from dichotomies. A focal point of the study was to explore it from an angle of situated knowledge. Additionally, I presented feminist studies of the relation of gender and technology.

Finally, theoretical work concerning the relationship between body, dis/ability, subjectivity and agency were introduced. Here I draw upon work from: Callon & Rabeherisoa, 1998; Moser, 2003, 2005; Gardelli, 2004. The focus in this standpoint is that bodies, dis/ability, subjectivity and agency are performed in relation to humans and non-humans. This standpoint is a way to introduce an area where disability studies, feminist studies and science and technology studies encounter.

7.4 Limitations with the Study and Suggestions for Future Research

A group of professionals, which is of interest for the overall PhD project, is teachers where the main focus is on their practices.
However, the material collected by the encounters with the teachers is very limited in this licentiate thesis. It is to be further explored in the PhD thesis.

During the course of research I have had the opportunity to explore working with youths with intellectual disability. It has been a challenge as well as a blessing sometimes. It has been difficult sometimes to know how to talk about certain areas. For instance, when interviewing the pupils and talking about disability I experienced great difficulties. It was hard to know how to talk about it whilst not creating boundaries between the pupils and me. The analysis of the empirical work has taken place within the standpoints, the theoretical and methodological framework, described in part two. However, further elaboration is needed to incorporate the framework more thoroughly into the analysis.

Based on the work in this thesis I suggest that there are various issues to continue with if one wishes to go on to a new study around this issue. One is related to another important group, teachers that are part of the school day of the pupils. By focusing on their work one is enabled to include issues how their work practices additionally contributed to the process.

Another issue to explore would be the way the technology contributes to the processes. By following more closely how the technology is given life to in the practices in school and everyday live.

Finally, it would additionally be interesting to follow people working as developers within the ICT area to study their views of technology, bodies, dis/ability, agency and subjectivity.
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APPENDIXES

APPENDIX A

Intervjunall Studie Ett

Intervjunall för första intervjutillfället

Jag:
- Ålder
- Födelseort
- Levnadsort

Familjesituation:
- Barndom
- Uppväxt
- Nuvarande

Utbildning:
- Grundutbildningar
- Utb kvällar

Arbete:
- Tidigare praktik
- Önskemål om jobb
- Synen på de som jobbar med datorn

Intressen:
- Hobbies
- Medlemsskap
- Närområdet

Media:
- Vilka media använder man sig.
- Tidningar
- TV
- Data
- Mobiltelefon

Övrigt:

Datorn:
- Vad upplever man som roligt/träkigt med att använda datorn?
- Vad upplever man som svårt/lätt med datorn
- Vad är det bästa/sämsta med datorn
- Finns det bra med datorer i skolan
- Vad har man för drömmar att göra med datorn?
Questions Study # 1

I:
- Age
- City of birth
- Place of residence

Family situation:
- Childhood
- Growth
- Current

Education:
- Basic education
- Evening classes

Work:
- Earlier practice
- Hopes for work
- The view of people who work with computers

Interests:
- Hobbies
- Membership
- Immediate surroundings

Media:
- What media do one use.
- Papers
- TV
- Computer
- Mobile phone

Other:

The computer:
- What does one experience as fun/boring when using the computer?
- What does one experience as hard/easy when using the computer
- What is the best/worst with the computer
- Are there a sufficient/adequate number of computers in the school
- What dreams does one have about things that can be done with the computer?
APPENDIX B

Intervjunmall Studie Två

Jag:
Ålder.
Födelseort.
Levnadsorter.
Familjesituation.

Intressen:
Fritidsintressen.
Föreningsliv.
Beskrivning av vilken tillgång man har till media hemma (tv, tidningar, Internet, mobiltelefoni osv).
Beskrivning av vad man använder för media hemma (tv, tidningar, Internet, mobiltelefoni osv) och varför.

Utbildning:
Tidigare skolor.
Beskrivning vad man gör i skolan.
Beskrivning av vilka teknologier såsom datorer, kameror, video, mobiltelefon etc som man har tillgång i skolan.
Beskrivning av vad man gör med datorer och andra teknologier.
Beskrivning av den kunskap som krävs för att man skall kunna använda datorn, kameror, video mm.
Beskrivning av vad man upplever som roligt/tråkigt, svårt/lätt, bästa/sämsta med användandet av datorn.
Beskrivning av de personer som finns i skolan och vad man upplever att de gör i skolan.
Beskrivning av vilka olika aktiviteter (t ex jobba med datorn, samling, musik, gymnastik, svenska, matematik mm) man har i skolan och vad man gör i dom.
Questions Study # 2

I:
Age.
City of birth.
Place of residence.
Family situation.

Interests:
Recreational pursuits.
Involvement in associations.
Description of what kind of access one has to media at home (TV, papers, the Internet, mobile phone, etc.)
Description of what kind of media one uses at home (TV, papers, the Internet, mobile phone, etc.) and why.

Education:
Previous schools.
Description of what one does at the school.
Description of what kind of technologies such as computers, cameras, video, mobile phone, etc. that one has access to at the school.
Description of what one does with computers and other technologies.
Description of the knowledge that is required in order for one to use the computer, cameras, video, etc.
Description of what one experiences as fun/boring, hard/easy, best/worst with the use of the computer.
Description of the people who are at the school and what one experiences that they do in the school.
Description of what different activities (e.g. work with the computer, assembly, music, sports, Swedish, maths, etc.) one has in the school and what one does in each of them.