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Digital equality in school and during leisure time - young people with disabilities

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Abstract. One of the biggest social changes of our time has been the digitizing of nearly all areas of everyday life. This project reports on disabled young people's (9-16 years) engagement in computer activities in school and during leisure time in comparison with youngster in general. The results demonstrate that disabled young people had restricted participation in computer use in educational activities. During leisure time however, young people with disabilities had a leading position with respect to internet use in a variety of activities. The discussion points to beneficial environmental conditions at home (and the reverse in school) as parts of the explanation for the differing engagement levels at home and at school, and among young people with disabilities and young people in general.

Keywords. Digital divide, internet, survey, ADHD, physical disabilities

Introduction.

The digitizing of nearly all areas of everyday life is one of the biggest social changes of our time. The changes have been so rapid and sweeping that they have been called the 'digital revolution'. In Sweden for example, which is one of the most internet-connected countries in the world, more than 90% of the population have internet access at home (Nordicom, 2011). The opportunity to work, interact, communicate, and be entertained by the web is now taken for granted by many people. The internet has also created new opportunities for people with disabilities. The internet provides easy access to activities such as shopping, buying tickets, accessing various kinds of information, or interacting with friends. In addition, the internet opens up opportunities for distance education and work that make it possible to be globally mobile and connected without physically travelling.

In the United Nations' Convention on the Rights of Persons with Disabilities Article 9 (on accessibility) it is stated that the parties to the convention shall take appropriate measures to '*promote access for persons with disabilities to new information and communications technologies and systems, including the Internet'*. The United Nations' position is that digital access is a matter involving equality between groups of people, the securing of democratic rights, and equal opportunities for all citizens (Ulibarri, 2011; United Nations, 2007). Lack of digital access among adults has been found to be associated with disadvantages in financial, educational or cultural resources (Livingstone & Helsper, 2007). Fears have been expressed that the digitization of society will result in a 'digital divide' between those who have access to the Internet and other digital technologies, and those who do not. This in turn might increase existing inequalities between groups such as people in rich and poor countries, people with and without higher education, or people with and without disabilities (Livingstone & Helsper, 2007).

This project was designed to investigate digital equality between young people with and without disabilities. More specifically, the aim of the study was to investigate the engagement of young people with disabilities (10-18 y) in computer activities in mainstream school and during leisure time in comparison with a reference group from the general population of about the same ages. Results concerning young people with physical disabilities (Lidström, Ahlsten, & Hemmingsson, 2010; Lidström, Granlund, & Hemmingsson, 2012) and young people with ADHD (Bolic Lidström, Thelin, Kjellberg, & Hemmingsson, 2013) have already been published. Building on the research, this paper reports and concludes results from the project as a whole.

Method.

Design: The project has a cross-sectional design.

Participants: Participants were approached by four out of the 21 main habilitation centres in Sweden. The participants included were 10-18 years of age (n=389) had physical disabilities such as cerebral palsy, spina bifida, and neuromuscular disorders (n=287) and ADHD (n=102). Young people with intellectual disabilities as their primary diagnosis were excluded. The response rate was 62% among young people with physical disabilities and 52% among young people with ADHD.

The survey instrument focused on access to and engagement in ICT activities including the internet in regular schools and during leisure time. In order to make comparison possible several questions were replicated from Swedish National surveys that aimed to investigate young people's use of computers and the internet in school and leisure. A Cronbach's alpha of a = 0.74 was obtained. In order to enable comparison of computer use in school between students with disabilities and a reference group from the general population, normative data from about a thousand students were obtained from the national surveys mentioned above.

Analysis: A chi-squared test with a level of significance of $p < 0.05$ was used to investigate differences between students with disabilities and the reference group. A Kruskal–Wallis test was applied to compare ICT use in school and during leisure time between three groups: young people with a) physical disabilities, b) ADHD, and c) a reference group.

Results.

School

Because a computer could be an effective assistive device in educational activities such as writing, reading and accessing information, the initial working hypothesis was that students with disabilities probably used the computer more often in school compared to the reference group. However, the results showed the opposite, young people with disabilities had restricted participation in computer use in educational activities, in comparison to young people in general. Nearly all students with disabilities stated they had access to computers in school. Of these, 28% of participants with physical disabilities and 14% of participants with ADHD had access to their own computer. Nevertheless, when comparing the computer use in a variety of educational activities such as searching for information, making presentations, creating

images/music, and e-mailing teachers it was found that young people with disabilities used the computer significantly less than the reference group and the students with ADHD used it the least. For example, 59% in the reference group stated they used the computer for searching for information in comparison to 50% (physical disabilities) and 33% (ADHD) among participants with disabilities. When investigating the students' own preferences for using the computer in school, 66% of the students with ADHD and 37% of the students with physical disabilities claimed they wanted to use the computer more often in school. About the same proportions said they wanted to use the computer for more activities in school. In addition, 40% (ADHD), and 29% (physical disabilities) felt that their classmates used a computer in class more often than they did.

Leisure

The access to a computer and the internet at home was high, since nearly all participants had access, and 54% (physical disabilities) and 46% (ADHD) had their own computer at home. During leisure time, young people with disabilities were skilled and engaged computer and internet users and had a leading position compared to the reference group with respect to internet use in a variety of activities. For example, the findings demonstrated that a higher proportion of young people with physical disabilities: browsed the Internet, did homework, visited communities (such as social online networking sites), searched for information, downloaded music/movies and uploaded texts and pictures than non-disabled children. Concerning young people with ADHD, a higher proportion, played computer games and visited communities. Interestingly, there was less difference between boys and girls with disabilities with respect to choice of internet activities compared to the reference group.

Discussion.

This project poses some challenging questions concerning the discrepancy between computer and internet use for leisure and at school among young people with disabilities. Why were young people with disabilities restricted in schools when they apparently were skilled and engaged internet users at home? How can we explain the digital inequality in school between young people with disabilities and the reference group? The analysis points to beneficial environmental conditions at home (and the reverse in school) as parts of the explanation for the differing engagement levels at home and in school, and among young people with disabilities and young people in general.

Concerning leisure it is possible that young people with disabilities appreciated the technology because it promised easy access to activities that (from their perspective) were engaging and provided increased opportunities to interact with friends, and to be part of a community of young people where questions of concern to them were discussed. Parents of children and young people with disabilities might also be more positively disposed towards new technology and set fewer rules concerning its use, as they, compared to other parents, might more easily recognize the new technology as an opportunity for their child (Lindstrand, Brodin, & Lind, 2002). Comparisons between groups showed that young people with disabilities more often had their own computer at home and that young people with physical disabilities were subject to fewer rules concerning its use.

Nevertheless, the results demonstrate that so far the rapid technological development has not reached the schools. Considering teachers, most have not grown up with the new technology; it was probably not included in their teacher education and as a result they may not be familiar with using computers and the internet in educational activities. Resources may be another part of the explanation for the inequality between the groups. Swedish classrooms are usually provided with only one or two computers per class. Computers are popular among all children and it is possible that young people with disabilities do not have the strength to compete successfully when it comes to using the computer in class. This, in combination with regular teachers' lack of knowledge and ignorance of this issue (Hemmingsson, Lidström, & Nygård, 2009), might help us to understand the discrepancies.

Conclusion: Young people with disabilities are disadvantaged with respect to ICT use in regular schools compared to their peers without disabilities. Schools need to prioritise use of ICT by young people with disabilities as they are the ones that would benefit the most. They may need supporting technology to be able to engage in educational activities to meet their basic needs and maximize their potential to be better prepared for further education and for work after school.

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