Department of Neurobiology, Care Sciences and
Society Division of Occupational Therapy

ICT AND PARTICIPATION

IN SCHOOL AND OUTSIDE SCHOOL ACTIVITIES

FOR CHILDREN AND YOUTHS WITH PHYSICAL DISABILITIES

AKADEMISK AVHANDLING
som för avläggande av medicine doktorsexamen vid Karolinska Institutet
offentligen försvaras i sal H3 Blå, Alfred Nobels allé 23, Huddinge

Fredagen 17 juni 2011 kl 12.30

av

Helene Lidström

Huvudhandledare:
Professor Helena Hemmingsson
Linköpings universitet

Bihandledare:
Professor Louise Nygård
Karolinska Institutet

Professor Mats Granlund
Hälsohögskolan i Jönköping

Docent Gunnar Ahlsten
Uppsala universitet

Fakultetsopponent:
Docent Lisa Skär
Luleå tekniska högskola

Betygsnämnd:
Docent Lena-Karin Erlandsson
Lunds universitet

Professor emerita Jane Brodin
Stockholms universitet

Professor Anna-Liisa Salminen
Kela Research Department
Helsinki

Stockholm 2011

ABSTRACT

The general aim was to investigate the use of Information and Communication Technology (ICT) and participation in computer activities in school and outside school among children and youth with physical disabilities (age 8-19 years), in comparison to children and youth in general. In particular the aim was to gain knowledge about the use of and satisfaction with computer-based assistive technology devices (ATDs) in school and outside school among children with physical disabilities.

Study I investigated the use and non-use of ATDs in school by children with physical disabilities and described the children's experiences of using these devices. **Study II** investigated the outside school activity patterns of children with physical disabilities, and specifically their ICT usage compared with non-disabled children. It also aimed to investigate the children's opinions of computer use and the associations between their use of the Internet and their interaction with peers. **Study III** examined the prevalence of children with physical disabilities using a computer-based ATD, and investigated differences in the satisfaction of children and youths with disabilities who used or did not use computer-based ATDs in the application of computers for in school and outside school activities. **Study IV** determined the ICT use in school activities of two groups of children with physical disabilities comprising those who do and those who do not use a computer-based ATD, and compared them with children from the general population. In addition, positive factors associated with in-school computer use were identified for children with physical disabilities.

The findings in **Study I** showed it is important that devices are integrated into educational practice and that children must experience the immediate benefits of ATD use for their function in everyday school activities without detrimental effects on their social participation if they are to use the devices provided. The latter was often more important than being able to perform activities independently. **Study II** showed two sets of activity patterns, depending on whether the child was disabled or not and on gender. Proportionally more children with physical disabilities were engaged in ICT-activities, while non-disabled children tended to be engaged in a broader range of activities outside school. The activity pattern was more uniform for boys and girls with disabilities than for their non-disabled peers. Use of the Internet was positively associated with peer interaction outside school. In **Study III** the prevalence of using computer-based ATDs was about 44% among children with physical disabilities, and many were dissatisfied with the service around their ATDs**.** These children were less satisfied with their computer use in education and outside school activities than the children who did not use an ATD. **Study IV** showed that children with physical disabilities used the computer for less varied educational activities than children in general. Attending mainstream school, the children's age (notably, being 16-18 yrs old), their frequent computer usage, and the teachers' frequent computer usage increased the participation of children with physical disabilities in computer-based activities.

The findings of this thesis have contributed with new knowledge to participation, use of ICT and ATDs of children with physical disabilities in activities in school and outside school. In conclusion, the activity pattern outside school in children with physical disabilities is more varied than earlier research studying ICT-activities has shown. Digital skills (knowledge in using the computer and the Internet) developed outside school engage children with disabilities, giving them increased access to social interactions, and for educational purposes. Therefore, it is discouraging when schools do not provide children with disabilities with opportunities to fully exploit their digital skills in school, when these children participate in a less diverse range of computer activities in comparison with children in general. Children with physical disabilities are not always satisfied with their use of ATDs provided, and the choice to use or not to use an ATD is not only the child's decision. This is an ethical dilemma when children both use ATDs they do not want to use, but also do not use ATDs they want to use. Computer-based ATDs need to be highlighted as an intervention in participation in everyday activities for children with disabilities. However, those children are not satisfied with the use and service of their computer-based ATDs in and outside school. These results can be used as a basis for prioritising and developing support for the optimal use of ICT and ATDs in school and outside school of children with physical disabilities.