Experiences in Ethical Usability Testing with Children

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ABSTRACT

This article describes the issues in conducting ethical usability testing with children including experiences in developing and testing sign language software on Kindergarten, Prep and Grade five, and Grade six children. It considers the unique requirement of researching with children and the process of gaining university approval to conduct research with children. It discusses the difficulties in gaining informed consent from teachers, parents, and children, protection of the research subject from harm and the difficulty in empowering children to instigate their right to refuse to participate in the research project. The article also discusses practical issues such as age appropriate practice, the duration of testing and recruitment of participants. Each issue is discussed in theory and an example is given from a recent research project Auslan Children.

Keywords: computer-assisted education; ethics; educational multimedia; educational research; testing

INTRODUCTION

Interaction design for children is a field associated with the more extensive field of Human-Computer interaction and investigates specific issues in relation to the design and development of software for children with their unique requirements. Druin and Hourcade (2005) state:

It is critical to consider how to create new technologies for children that are easy to use, age appropriate in content and interface, and foster exciting
learning experience in and out of the classroom. (p. 34)

Children are a significant subgroup of computer users as there have different characteristic to adult users including: their physical and intellectual ability; likes and dislikes; knowledge of the world; attention span; and motivation. Plass (1998) states “Interface design is the process of selecting interface elements and features based on their ability to deliver support for the cognitive processes involved in the instructional activities facilitated by the application” (p. 39). The design process involves selecting the instructional activity to support the competence or skill that the learner is supposed to acquire. In order to design appropriate software for children it is important to be aware of their special needs.

Auslan Children was a series of research projects that were undertaken to develop high quality software to teach hearing children sign language. There is currently little research specifically in the area of using software to teach young children Sign Language. The target age of children for the first project was four year old children in a kindergarten setting. The target age of the second project was five and six year old children who were in prep at primary school and 11 and 12 year old children who were in grade five and six at primary school. The Auslan Children software consisted of direct instruction of Australian Sign Language (Auslan) by three different characters: a female presenter, a super hero, and a puppet. The next section of the software had three activities a short story, a song and a game.

In order to develop the best software for learning it was important to take children’s preferences into consideration this included researching the most preferred character for presenting new signs, the type of activities that the children liked, the number of sign that children were able to remember in a single session in addition to the differences that age and gender made to the children’s preference. The research project ran a number of small scale iterations in order to limit the amount of time spent on non preferred options.

This project is designed to benefit deaf children by enhancing their social integration with hearing children in integrated schools however it has far wider implications including the knowledge of the most effective multimedia technique for teaching deaf children and their hearing peers in country schools and isolated settings where other forms of sign language instruction are not available. Geitz, Hanson, and Maher (1996) claim “People proficient in sign language are often scarce, particularly in rural areas” (p. 27). The form of multimedia technology developed in this project will help to assess the most effective method to teach others in the community including family members and professionals who work with deaf people and also people that interact with deaf people in daily life. In addition, interactive multimedia provides excellent opportunities for teaching sign