

Chapter IV

Bonded Design: A Methodology for Designing with Children

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Abstract

This chapter presents a new methodology, called bonded design (BD), for designing information technologies. It is especially suited to work with children, where designers and children collaborate in an intergenerational team to develop a low-tech prototype, over a number of design sessions, using techniques such as group discussions, critical evaluation of existing technologies, brainstorming, and prototyping. BD is compared with other user-focused design methods, and its unique features identified. Two case studies are presented in which designers worked with elementary school students, within the BD framework, to design two Web portal prototypes intended for young students to find information for class projects. The successful evaluation (using focus groups and an operational study) of working portals developed from these prototypes validated BD as a means to design technologies for young students.

Introduction

It is hardly controversial to argue for user involvement in the technology design process: the issue rather is the extent of that involvement, and whether or not this is related to the kind of user. To be more specific, can young children play a meaningful role in design and if so, what should it be? A number of user-focused design methodologies have accommodated children in various ways and to various degrees in the design of technologies intended for use by children (Nasset & Large, 2004). In this chapter, a new such design methodology, bonded design, is explained and discussed in the context of two cases where it was used to design Web portals intended for elementary school students seeking information to support class projects. In the first case, the adult designers worked with a group of grade-six students (aged 11 to 12 years) from an elementary school, and in the second case with students (aged 8 to 9 years) from grade three of the same school. In both cases, the application of bonded design resulted in the development of two low-tech prototypes of Web portals, called *History Trek* (grade six) and *KidSearch Canada* (grade three). After discussing these two case studies, the chapter concludes by suggesting how bonded design might be applied to other user communities and other tasks.

User-Focused Design Methodologies

Bonded design did not emerge in a vacuum; various methodologies have been suggested to provide professional designers with input from their targeted user communities. The oldest and most conventional approach has been termed “user-centered design” (Nasset & Large, 2004; Scaife & Rogers, 1999; Scaife, Rogers, Aldrich, & Davies, 1997). It focuses upon the impact of technology on users; but traditionally, these users were only involved after the technology had been designed. In other contexts, user-centered design also has been understood by some authors to mean direct contact between users and designers throughout the design process (Rubin, 1994). Typically in user-centered design, users themselves have little or no control over the design process, meaning that they cannot initiate changes, but only reveal design shortcomings. From the designer’s perspective, an advantage of user-centered design is that they can accomplish their work more quickly because they maintain control over the design process (Druin, 2002). Because users are not directly involved throughout the process, but only at the beginning and/or end, children can be involved quite easily, and in large numbers. For example, Druin (2002) cites a study conducted with 1,300 children, in 1991, at Vanderbilt University, where the children were watched and tested during the study, but did not themselves take part in the design process.

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