Chapter 3
Experiences With a Research Product:
A Robot Avatar for Chronically Ill Adolescents

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ABSTRACT

This chapter discusses challenges related to studying the use and usefulness of research products (robust, high fidelity prototypes placed in real use contexts for research purposes). Methods and methodologies for studying use and usefulness of such research products embedded in users' everyday lives are still lacking and need to be better established. By presenting a case of such research product in use, a robot avatar, we wish to illustrate how new knowledge of relevance for both designers and users can be gained. The robot avatar was designed to represent chronically ill adolescents at school, improving his/hers learning opportunities, as well as helping maintain social connections with peers. The chapter shows how methods were adapted and tools designed to work with this user group and learn about the role of avatars in education and reduction of social isolation. The value of using the avatar, and similar research products, is considered.

INTRODUCTION

In this chapter, we revisit the design of new digital artifacts, one of the core activities within Human–Computer Interaction (HCI). Specifically, we focus on the stage of the design process that is beyond the usability testing of high-fidelity prototypes and wish to highlight opportunities and challenges related to studying the actual use and usefulness of new digital artifacts in real-life use contexts and over time. This extension of the design process into actual, situated use is of increasing interest within the HCI

community. Moving away from exploring high-fidelity prototypes in the labs or short-term tests in the wild, researchers embrace research into the intricacies of everyday use and the complexities of human–technology relationships.

In their paper (Odom et al., 2016), authors address this problem, suggesting that the notion of a *prototype* may not be entirely sufficient to support the inquiries into actual everyday use. They propose to distinguish digital artifacts that are ready to be placed in the lives of real users from prototypes and call such artifacts *research products*. Research products are further distinguished from *research prototypes* by arguing that research prototypes may be a manifestation of a theoretical concept and are not to be judged for their actuality but rather for their potential. In contrast, research products are what they are and are not judged for their potential (like research prototypes), or seen as placeholders for something else (like prototypes) (Lim, Stolterman, & Tenenberg, 2008). Rather than focusing on prototypes as ways of furthering design practice agendas by helping generate and test new forms, functions, systems, etc., we wish to present a case that illustrates how research products open up new research opportunities in design-oriented HCI research.

In this chapter, we thus discuss a specific research inquiry related to use of a newly designed digital artifact/ research product. The research product described in the chapter is a robot avatar (see Figure 1). The avatar was designed to represent chronically ill children and adolescents at school. Behind the design and development of the avatar is a new startup company ("No Isolation," 2015). We started a research cooperation with the startup at the phase when the robot avatar was still a concept, and we have made an agreement to work with 10 exemplars as research products, studying their use in real life. The avatar was designed with the intention to improve learning opportunities, as well as to help maintain social connections with peers. For our research participants, we have chosen adolescents who suffer from Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome (ME/CFS) and who, due to their illness, cannot attend school. As a consequence, they often suffer from social isolation. The research question that we were interested in was: do robot avatars help adolescents with ME/CFS to attend lectures more frequently and re-establish social connections with classmates as a consequence?

Figure 1. The robot avatar in the classroom
Photo: Marius Vabo.

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