EXPLORING THE EVERYDAY DESIGNER

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Abstract. This paper discusses our preliminary analysis of how designer and non-designer participants discussed *and* engaged in design activity. For this research, we employed two design study experiments that included a total of forty-eight participants. In our preliminary findings we found differences between designers and non-designers in how a design activity is analyzed. The more significant preliminary finding is that there were substantially less differences in how designers and non-designers engaged our design activity

1. Introduction

In our research we explore how people, designers and non-designers alike engage in design. Our interest in this study is as designers who want to explore the idea of the *everyday designer* as someone for whom we design. An everyday designer has no formal design training but through interaction with existing designs modifies or creatively extends these into new designs and uses. We ask to what degree people carry tacit knowledge of design activity and how we as designers might respond? At this stage of our studies our aim is to identify commonality of action in engaging design activities between designers and non-designers such that we can better describe the attributes of an everyday designer, and ultimately develop an approach to end-user interaction modeled after the attributes of everyday designing.

Our current study is in progress. We have analyzed how our designer and non-designer participants discussed *and* engaged in design activity. For this research, we employed two design study experiments that included a total of forty-eight participants. In our preliminary findings we found differences between designers and non-designers in how a design activity is analyzed. We feel this accounts for why we rarely consider our end-users as designers. The more significant preliminary finding is that there were substantially less differences in how designers and non-designers engaged our design activity

– we assume that walking the walk is of more consequence than talking the talk.

We feel these studies are important in suggesting how everyday designers can potentially utilize design outcomes as design resources for further design. This type of design activity can be seen as an integral aspect of a deeper cycle of interaction and adaptation that occurs over time and supports the evolution of design systems, artifacts and interaction models. Our view of interaction design is of a practice in which design interventions support the roles of people, artifacts and situated contexts that together form a generative and sustainable ecology of ongoing design responses. Designers intervene as originators or catalysts in a wider circle of people engaged in design activity including the people for whom we design.

The everyday complexity of ubiquitous computing in the home highlights the possibility of a continuum of designers involved in design activity. Current design ethnography suggest the home is a set of organizational systems and routines upon which designers should consider evolutionary solutions (Crabtree et al., 2001). Artifacts and actions in the home are utilized by being made visible, invisible or pliable – they are seen as *resources* for further action (Taylor and Swan, 2005, Blythe and Monk, 2002, O'Brien and Rodden, 1997, Tolmie et al., 2002). This view strongly suggests the ongoing presence of designers. We can see home dwellers as a type of everyday designer who remakes or modifies organizing systems, and who use design artifacts and actions around them as design resources.

2. Relevant Work

The idea of an everyday designer is not new, for example Fischer has argued for a *meta-design* approach in software systems (Fischer, 2000). However, unlike *meta-design,* which argues explicitly that an end-user is a designer that requires design tools to facilitate use, we see interaction with design outcomes as part of an ongoing cycle of interaction in which design action is an integral part. In other words, people have been redesigning our designs all along. For example, Alexander (Alexander, 1964) discussed what he called the *unselfconscious process*. He describes a design system that maintains equilibrium through constant actions over time (in the generational sense). Actions taken by any individual who could simply recognize a failure and could react in a corrective way. Alexander would eventually describe the process of continuous adaptation as *piecemeal growth* (Alexander et al., 1977). Louridas's concept of designer as *bricoleur* describes a continuum of activity that is strongly inclusive of the everyday designer (Louridas, 1999). Designers like *bricoleurs,* make do with resources available to them and explore the situation through action for new uses and connections. In many respects, the basis of Louridas concept, Levi-Strauss's *bricolage* explains in

anthropological terms the *everyday scientist* (Lévi-Strauss, 1962). Such processes rely on the tacit knowledge of non-designers to act on the design system. Schön in his paradigm of reflective practice argues for a tacit level of understanding of design, termed *knowing-in-action.* The designer shapes the design situation through concurrent evaluation and experimentation based on "the intuitive knowing implicit in the action"(Schön, 1983). Who has this tacit knowledge?

Little research has been done studying non-designers designing while significant research in analyzing design activity of designers has taken place (Bly, 1988, Cross et al., 1996, Maia et al., 1995, Valkenburg and Dorst, 1998, Adams et al., 2003). Particularly relevant research for our study included Reymen's empirical analysis of design activities across design disciplines utilizing Schön's reflective practice as a meta-framework (Reymen, 2001). Application of Schön's paradigm can also be found in Valkenburg and Dorst description method that is utilized to support a protocol analysis of design activity (Valkenburg and Dorst, 1998), as well as Adams' study of engineering practice (Adams et al., 2003). Similar to the methods above, we utilized Schön's paradigm of reflective practice for coding our protocols (Schön, 1983).

3. Experiment Design and Methods

For our studies, the design activity is based on the goal of designing a new game from two existing board games. In our first study we asked participants to watch a videotape of two sessions of two different individuals engaged in our design activity and to describe and interpret the process. We asked the individuals on the video to *think-aloud* as they were designing.

We've analyzed the transcripts based on a coding approach for *problem definition space* used by Adams (Adams et al., 2003). We found their study of freshman and senior engineering students a valuable point of reference related to the differing experience levels of non-designers and designers (Adams et al., 2003). We modified the two codes, "knowledge" and "system" to suit our design activity. We also created a multi-dimensional approach whereby we represent the problem definition space across three dimensions: "description", "interpretation" and "judgment" (see figure 1). We took this approach to accommodate for the breadth of commentary and representation of the design space.

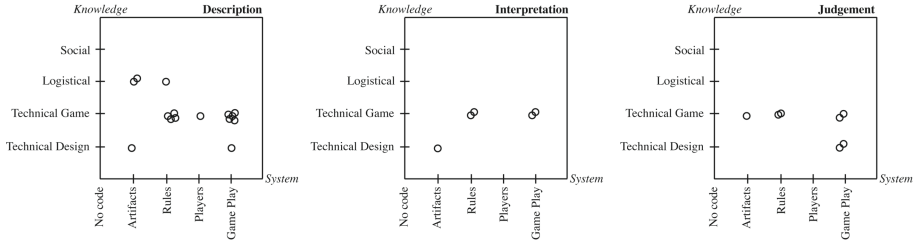

Figure 1. Sample of the analysis of participant (V11) using our multi-dimensional representation of the problem definition space based on Adams (Adams et al., 2003).

Our second study involved participants who as a pair were either designers or non-designers. We asked each pair to design a new game from two existing board games chosen from a collection of games we provided. We left the participants alone and allowed them approximately forty-five minutes for the activity. Working in pairs allowed us to address a more typical collaborative deign situation and eased the *think-aloud* issues since pairs normally verbalize and communicate as they collaborate. It was required that the pairs had prior working experience in order to eliminate issues of new team dynamics and lack of familiarity of work styles. Our analysis employed a modified version of Valkenburg & Dorst's description method for protocol analysis based on Schön's reflective practice paradigm (Valkenburg and Dorst, 1998). The method analyzes design activity as including the following actions: *naming*, *frame*, *moving*, *reflecting*. In order to further compare between paired participants we've used design activity timelines that map instances of each of the design actions along a timeline.

4. Preliminary Analysis and Ongoing Research

This research is currently ongoing and therefore we can make no conclusions or state findings as being other than preliminary. We are in process of analyzing the data of both studies and validating each of the protocols with at least two independent validations by other experts followed by a consensus discussion to resolve differences. We aim to complete the research in early Fall 2005.

At this stage we have completed the studies with twenty-four participants in each study for a total of forty-eight participants. We have completed a non-validated analysis of study one mapping the problem definition space. Adams found that senior engineering students listed more factors and covered more of the problem definition space than freshman students. Our preliminary analysis points to similar findings between designers and non-designers. The multi-dimensional approach reveals that non-designers tend to focus their comments primarily on a descriptive level however they also comment more frequently than designers in areas of judgment, especially on

factors of "game play" and "social" aspects. We are currently processing the protocols for study two and we feel we require conversion to design activity timelines in order to better describe common patterns between the paired designers and non-designers. Our preliminary finding is that the protocols are considerably similar showing less of a gap than Adams found in the design activity timelines between freshman and senior engineering students.

5. Summary

Our research at this phase provides a theoretical context supporting the notion of design as a common activity. We have reviewed related studies and methods analyzing design activity. We have designed novel studies for researching analysis and engagement of design activity. We aim to provide a complete discussion of the findings of the studies as soon as the research is completed, as well as its design and research implications. We feel this research will contribute by providing a set of attributes for an everyday designer and show how these attributes relate to designers such that we can provide an alternate view of people as belonging on the design continuum with designers in a generative and ongoing cycle of design responses.

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