Ethnography: Learning what matters to the user

Ethnography is a method of research in which the researcher gathers data within a natural setting that involves a dynamic network of interrelated variables. No attempt is made to control variables within the setting for this could alter or destroy the phenomenon being studied. The purpose of ethnographic research is to attempt to understand what is happening naturally in the setting and to interpret the data gathered to see what implications could be formed from the data. Ethnographic research is also known as *qualitative* research.

The researcher is the instrument used to collect data in the setting. Data is typically gathered through interviews, observations, and document analysis. Questionnaires containing open-ended questions may also be used. Sessions are often videotaped for viewing from different perspectives. Validity of this type research depends heavily on the skill, competence and rigor of the researchers. Data is gathered using more than one of the data collection methods. The researcher crosschecks data and interpretations using a method referred to as "triangulation." In this method data obtained from one source are pitted against data obtained from another source in order to confirm information and to explore inconsistencies. The final product produced from an ethnographic study should be a "thick description" of the situation, so the situation appears sufficiently realistic, and that others examining the description can determine whether the implications formed in the study can be applied to other settings.

Throughout the CD process the designer uses the same skills required of an ethnographer (Simonsen, & Kensing, 1997; Huges, King, Rodden & Anderson, 1995; Rose, Shneiderman, & Plaisant, 1995). Skills, such as interviewing and observing, do not necessarily come naturally to individuals. While CD provides a data rich environment for design, it is important that it be skillfully applied. The risk of misinterpreting observations, disrupting normal practice, and overlooking information is high (Shneiderman, 1998). Validated ethnographic methods have established guidelines for performing the user study, analyzing the data, and reporting the results (Rose, Shneiderman, & Plaisant, 1995). Like other notable areas of computer science, ethnographic skills must be experienced and practiced to fully learn their potential as well as their theoretical underpinnings (Roberge, 1991).

One component incorporated into the revised HCI course is the teaching and practicing of such skills. Through a series of in-class and out-of-class exercises students are taught techniques for gathering data and organizing the data into field notes. Interviewing skills are taught through a series of video clips showing both good and bad interviewing styles and techniques. In addition, students video tape each other interviewing and critique their performance based on the techniques taught in lecture.

After they gather user data, the students need a mechanism to organize the data and to see what implications it reveals to the design of a new system. The work models constructed from the data provide the "thick description" that contributes to the design of prototypes (See Figure 1). Work models are constructed from data and look at the user's activities from different perspectives. These include communication flow, steps in an activity, and artifacts the user needs to accomplish the tasks. These models provide a visualization of how work is currently being accomplished and where the processes may breakdown. From this the students can get an idea of what their application design needs to include and issues that need to be addressed. The students use these models to brainstorm design ideas that will fit to the way users think (work) and to re-engineer activities to improve the user's productivity/efficiency as well as eliminate or avoid

breakdowns that are occurring. From the design ideas the students move to prototyping an application.

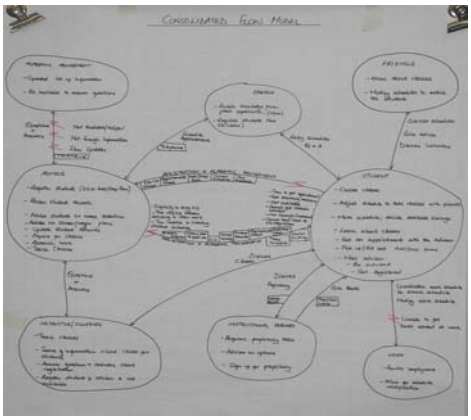

Figure 1: Student conducting an interview with a volunteer from another course and an example flow model that reveals roles, responsibilities, and flow of communication between individuals.

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