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Action research versus experimental methodologies for HCI.

Position paper for the NordiCHI workshop on "Quality and validity in HCI research"

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Does human-computer interaction follow engineering principles, or does it spring out of behavioural sciences or even design? Is HCI a passive science performing the work with case studies and ethnographic studies, or does it require more active involvement of the researcher in the process that he/she studies?

Of course there is no simple answer to such a question, because it is situation dependent.

All the research that my group are involved in can be labelled as **action research** - a qualitative research method. According to Rapoport (1970), action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework. It can be seen as an iterative process involving researchers and practitioners acting together on a particular cycle of activities (Avison, Lau, Myers, & Nielsen, 1999). These activities include problem diagnosis, action intervention, and reflective learning. One important distinction between action research and pure consultation work is that researchers do more than just listen to what people say they do. They also observe what people do and draw conclusions from differences that arise. Much of the knowledge at a work place is tacit to the people working there and can only be revealed by methods such as participatory observation of users performing their tasks. The role of the researcher in these settings is to mediate knowledge and methods that can be applied in practise, analyse and reflect on the results and, finally, to revise the methods applied.

I would argue for the action research perspective on HCI for a number of reasons

- **Communication** of the results of HCI research is extremely important, both to create a higher demand for increased usability of products, systems and services, and to improve the processes that creates these artifacts. Action research means doing research actually influencing the projects that are subject to our studies, hence communicating the basis for HCI as the project is performed.
- **Relevance.** Controlled experiments in cognitive science and laboratory experiments gives valid results but the results can often have questionable relevance to practitioners.

To increase the quality of action research for HCI we need to further develop the action research methodology or perhaps even to develop a new methodology for HCI research.

Such a methodology must have:

- **Relevance.** In that it deals with real life problems, and produce results that are of value to somebody.
- **Validity.** In that the results are "true" beyond reasonable doubt.

We need to fight for the right to further develop these methodologies and to create the context in which this type of research can be performed. This can be done by:

1. Making sure that the research subjects are forced to allow for evaluation and development efforts that is needed for the validity of the projects. Especially IT development projects, and projects in work settings undergo changes, which ruthlessly ignores the researchers need of data for the evaluation.
2. Make the financial situation more appropriate for these types of studies.
3. Create a better understanding for interdisciplinary work in our universities.

A case

Working with the purpose of improving development processes in HCI has several problems relating to quality and validity, but with undisputed relevance and benefit for the receiver of the research results.

You can never perform two research cases observing two different projects creating the same application with the same people at the same time with the same knowledge bias. There are several ways of gathering data about the progress of the project. One can keep logs of the progresses of the projects, perform interviews with the participants, before, during and after the projects, but the most important findings are the rough observations made during the projects, observations that are random, and not based on formal methods. Such observations are very important, especially for the receiver of the research results.

Such informal observation must be given a higher research status, because they are based on the experience and skills of the researcher, even though they are not a result of a formal procedure.

Discussion

I argue for the development of a new research methodology for HCI providing specific methodological tools for the different settings in which the research is conducted. Studying end-users in their home settings, studying development processes or work related research and development provide too much bias for traditional research methodologies to be applied.

There is a risk that the only studies that actually take place and are published are the studies that have a clear methodological approach and that produce results of high quality and validity. Not the important results that come out as a consequence of an action research project performed with less rigour.

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