

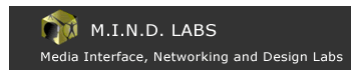
## **Evaluative Ethnography and Systems Design:** *can it also be used to assess presence?*

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## **the use of ethnographic approaches**

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- considered since the late 80s as a promising approach to provide assistance in the complex and delicate problem of systems design
- a “**turn to the social**” within system design and an attempt to develop a new perspective upon the design of technology
- with an emphasis on the “**real world**” character of settings, it is seen by many as the means for thoroughly contextualized enquiry which can overcome some of the problems of systems designed on the basis of abstract models

## introduction

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- Hughes et al. (1994) proposed that one general use of ethnography for systems design be **evaluation**
  - for example, where the study is undertaken to verify or validate a set of *already formulated decisions*
- Crabtree et al. (1999) suggest that the design of such virtual environments requires **explicit study** of participants at very early stages of the project
  - as an example, *evaluative ethnography* is applied to virtual environments by the authors

## introduction: ViDESK

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- current systems for collaborative learning do not support the same **knowledge-sharing** environment that face-to-face situations enjoy [Britain and Liber, 1999]
  - in particular, there are difficulties to *represent context and abstract information for knowledge sharing*
- ViDESK is designed to address it, in order to facilitate support for Computer Supported Collaborative Learning (CSCL)
  - ViDESK Visualisation Design for Sharing Knowledge

## **introduction: outcomes**

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- users need time to learn how to use a computer tool and evaluation **informs** some of the ways in which users adapt to and accommodate to the tool [Calvey et al., 1997]
- **lessons learned** from ViDESK suggest
  - that ethnography approaches may help *informing both design issues and data analysis*
  - the use of an ethnographic approach provides additional evidence or, at least, more data to perform an analysis where *underlying models for providing metrics and measurement are under definition or not widely accepted*

## **using tasks to conduct the experiment I**

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- using a 3D space for the visualisation design brings some, as yet, **unsolved problems** concerning both the user and the platform [Erickson, 1993; Ingram and Benford, 1995]:
  - *user disorientation*, leading to user confusion and spatial unawareness;
  - *novelty of the user interface*, which differs from current available systems;
  - *the need for the user to learn* symbols and navigation tools;
  - *processing and response times*;
  - *interface limitations*, lack of adequate peripherals;
  - *hardware limitations* (e.g. input/output devices)

## using tasks to conduct the experiment II

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- instead of dealing with each of the listed issues separately, a **task approach** was followed:
  - focusing user interaction on the more important issues of the *research objectives* and allowing direct observation of user activity

## experimental Methodology

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- **evaluation** in educational systems requires a good amount of effort [Cohen et al., 2000]
  - both *quantitative and qualitative studies* need to be conducted in order to deal with different variables to test an educational system
- a number of **tools** were used, following guidelines by [Britain and Liber, 1999; Cohen et al., 2000]
  - records of user activities
  - pre and post-experiment questionnaires
  - user observation and system logs
  - pre and post-tests to assess knowledge embedded in task checklists

## experimental Methodology

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- evaluation of collaborative technology is done best through **field evaluations** because these can be used to assess social-psychological and anthropological effects of the technology [Grudin, 1988]
  - an attempt to analyse all the dimensions involved in ViDESK usage would have lead to a huge amount of gathered data, much of it *irrelevant* to the learning process.
  - ethnography is an intrinsically *descriptive task* that resists formalisation and its methods *rely on the study of people and their activities* in their natural environment

## ethnography and evaluative ethnography

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- the method relies on understanding the setting from the point of view of those involved in it [Jones, 1998]
- the aim is to see activities as social actions, embedded within a socially organised domain and accomplished in and through the day-to-day activities of participants [Hughes et al., 1994]
  - an ethnographic application is evaluative ethnography, where the *study is undertaken to verify or validate a set of already formulated decisions*
- the design of virtual environments involves a significant degree of novelty and requires explicit study of user at very early stages of the project [Crabtree et al., 1999]

## using ethnography

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- ethnography can provide qualitative insight in the way how people really feel presence
  - allow qualitative data collecting from ongoing experiments, giving additional results to inform used metrics and refine presence measurement
- ethnography can be considered as the reporting and analysis of fieldwork study (qualitative methodology)
  - provide a “*human touch*” in a human related issue such as the one provided by the notion of presence
  - resulting data collections can include a wide range of subjective impressions such as the case of qualitative anecdotes or critical incidents that capture user experiences

## final remarks

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- ViDESK proposes a virtual environment approach to introduce the co-construction of knowledge and provide the experience of discussing and enhancing a context following a constructionist approach
  - they learn by doing, constructing and arguing (**a number of learning episodes were identified as outcomes** from using the system)
- as a result of using a mix between an ethnographic approach and quantitative research, a number of conclusions were obtained, both for listing a number of design requirements and assess the system