# Design and Use of MUDs for Serious Purposes

## Report from a workshop at the CSCW conference in Boston 16th November '96.

### Christer Garbis, Yvonne Wærn

## Background

A MUD (Multi-User Domain) has been described as a virtual simultaneous meeting place. MUD systems have for a long time been used for role-playing and gaming. However, currently several developers and researchers are exploring the possibilities of using MUDs for serious purposes such as work, research and education.

The aim of the current workshop was to approach a number of questions related to the design and use of MUDs for serious purposes. The discussions of the participants can be said to have centered along two lines. The first one dealt with the use and function of MUDs as they are today. The second line discussed the question of which new features could be designed and added to the present ones in order to create new collaborative virtual environments.

## Usage

The variety of usage fields of MUDs which the participants of the workshop represented was rather wide. Thereby, the participants also indicated that these kinds of systems are already being used for many different serious purposes. The application and implementation of MUDs which were discussed can be categorized into mainly three areas. The first area considered was education and teaching, featuring MUDs as teacher support as well as learning by doing through programming a MUD. A second thread of discussion dealt with the usage of MUD environments for crisis action management. A third application area examined MUDs as a general underlying communication environment which can be used in organiza-

tions with distributed personnel and tasks.

## Educational Use

A few MUDs have already been used for educational purposes by letting the students program in the environment. This means that students can create their own instances of generic objects, customize them or create new objects and thereby extend the functionality of the system. The important issue is that in the above mentioned use of MUDs, students can learn by doing. The experiences reported from this way of using MUDs seemed to be very positive. Examples such as MOOSE Crossing, PUEBLO and MicroMuse were mentioned. The workshop participants seemed to agree that these technological environments could favorably be used to test new pedagogical ideas and not just to replicate the existing educational system by creating virtual classrooms. It was even suggested that it is desirable to abandon the classroom metaphor. Using MUDs for educational purposes has also turned out to be very successful in the areas of acquiring writing and language skills since all communication is performed by writing and reading. A third application area of MUDs is the support for teachers (TAPPED IN). By using these virtual communities teachers can acquire professional development and socialize with colleagues. In these cases MUDs are used as an online, synchronous supportive mode for a professional community. Here it can also be noted that there exist examples of MUDs which are used as a support function when working with particular applications. The issue of MUDs used for distance education purposes was also briefly mentioned.

## Crisis Action Control Management

In this second application area the goal is to incorporate groupware tools of different sorts into the MUD environments and thereby assist a distributed decision making process in a dynamic environment (the C2MUVE project). The idea is to represent a decision making process, in a persistent and explicit mode. A question which was discussed in relation to this use of MUDs concerned the problematic representation of the qualitative aspect of the decision process. Thus, the issue of how to represent intensity and uncertainty in such a system was debated. Further, the need for shared representations among the users and participants of such a Collaborative Virtual Environment (CVE) was examined. Another consideration was whether text is enough for representing real-time decision in MUDs or if other representational modes should be used as well. It was pointed out that there does exist cases in which higher level decision makers do not use the keyboard or even refuse to type at all. Consequently, the question of a multimedia MUD environment for crisis action control management might be highly relevant and should therefore be considered.

## General Underlying Communication Environments

A third area for the usage of MUDs dealt with the use of Collaborative Virtual Environments as general, synchronous, platform independent, communication environments. MUDs considered as Collaborative Virtual Environments could be introduced and used in large organizations such as a corporation, within the civil service and the military. In relation to this application area of MUDs it was pointed out that a

new communication environment can sometimes radically change an organizational structure. Expertise about the new system may subvert old status and power hierarchies within an organization and create new information hierarchies.

## Issues

Maybe the most central issue was the role and future status of purely text-based MUDs. A longer discussion considered the role of graphics and its relation to the concept of a MUD. Especially three important aspects were debated. Firstly, the spatial support offered by a graphical representation of the MUD environment was analyzed and compared with the current text based descriptions. Secondly, the social support offered by graphical MUDs was discussed. One of the issues concerned to what extent they make it easy for the user to see who is present in the room. The third feature of graphical MUDs dealt with the social and psychological aspects of avatars.

Apart from the discussions about the role of text the participants briefly commented on the role of audio in MUDs as a complement to text. This kind of input is useful for those who do not want or know how to type. The audio alternative is attractive for participants who are not fast typers, since talking for many persons can be much faster than typing. However, when using text, users can work in parallel, which is not possible with voice input. Further, an auditive log is more unwieldy and less useful than a text log. One participant pointed out that text was preferred by participants, for whom the language used in a MUD is not their native one. A further advantage of text is that it does not require as advanced equipment as graphics do. The above mentioned features of text make MUDs accessible to people with limited computer capacity, people in developing countries and people in disadvantaged communities.

Another issue raised by the workshop participants was the extent to which 'ordinary life' concepts, such as whiteboards and meeting tables, should be used in the virtual environment of a MUD.

## Problems with Using MUDs

A common method to gain insight into how and for what purposes people actually use MUDs is to log the interaction. Questions like who should have access to the logs as well as to what extent the MUD users should be informed raised ethical questions in relation to research on MUDs. Of course, this is not a matter which is specific to MUDs but to all computer mediated communications, as well as other sorts of research involving people and their activities. A suggested solution to the logging question was to use command logging but not content logging.

Another interesting problem brought up for discussion was the issue of awareness. The question was not so much concerned with how to become aware of who else is in the MUD or in the same virtual room. Instead the awareness problem concerned the fact that other people in the physical world surrounding the user, may not understand that he is occupied with a meeting in a virtual environment. In addition, the theatrical metaphor of the fourth wall was mentioned as one way to conceptualize the relation between the virtual world and the physical world around the user. While in the theater the fourth wall is used to keep the audience out of the actors' virtual world, in MUDs the fourth wall can be said to be used by all participants to keep the real world from breaking the illusion of the virtual world.

## Evaluation

Since little research has been performed on MUDs so far, there does not seem to exist a consolidated body of methods for the analysis of data gathered in a MUD. In computer support for collaborative learning, it has been found that theoreticians and practitioners use partly different criteria for judging systems in a context. The same phenomenon can be expected to be found when research on MUDs is evaluated. It is therefore important that evaluation is grounded in the practice of the users and not in theoretical speculations of ad hoc and post hoc reflections attained from unsystematic practice.

## Social Aspects of MUD Usage

It was acknowledged that MUDs have had a bad reputation historically. Therefore it was agreed upon that there is a serious image problem. The workshop participants concluded that the bad reputation is almost entirely derived from the usage of MUDs for role-playing, gaming, and even for having cybersex. It was also agreed upon that there exists a need to change this fact since MUDs are in an increasing rate used for serious purposes, something which the present workshop also illustrated. As a concrete solution a name change was suggested. Instead of MUDs it was proposed to speak of Collaborative Virtual Environments (CVE) or Multi-User Virtual Environments (MUVE).

The participants of the workshop also discussed the matter of self-representation in MUD environments. It was noted that little research has been conducted on the subject of how participants and users of MUD environments actually present themselves, and how they experience other peoples' presentation. It was proposed that an analysis based on Goffman's concepts of front- and backstage, could be undertaken.

Just as in other socially inhabited computer-based environments, the phenomenon of social misbehavior, such as flaming and spamming, caught the attention of the workshop participants. Different solutions were discussed, both technical and social ones. Among the technical solutions were, among other things, automatically allotting more or less time/status to participants according to their behavior in the system. A social solution suggested was to openly discuss with the offender and come to an agreement on what communication rules should be used (such an agreement is used in many conferencing systems). It may also be possible to install a human (or automated) moderator to regulate communication issues. In particular, in serious uses of MUDs, the issue of floor control may have to be regulated more firmly than in MUDs used for leisure purposes. Also, a certification system could be developed to increase the reliability of users by linking their character in a virtual world to their identity in real life.

## Future

Finally the future of MUDs was taken into consideration. In spite of the fact that text is persistent, can be logged, is easy to use, and is based on general writing and language skills, the participants posed the question of the future of text-based MUDs. A central question seemed to be whether text will persist or if it should just be thought of as a transient stage, which is going to be overtaken by other media. The opinions of the workshop participants did not seem to converge on this point. Some participants maintained that text will soon have a subordinate role while others seemed to believe that text was the very essence of a MUD and should therefore continue to be the main characteristic. Others stressed the apparent advantages of graphics, such as spatial navigation properties and the visually represented social aspects of avatars. However,

nobody seemed to believe that text would disappear entirely, just as radio did not disappear when television was introduced.

The last question concerning the future of MUDs is whether the desktop metaphor might eventually change to a room/place based metaphor. A future MUD could, for example, be part of a general metaphor in which people can be objects. The MUD environment could be the interface to a persons whole computing environment.

## Organization

Yvonne Wærn and Daniel Pargman organized the workshop. The Swedish Transport and Communications Research Board as well as The Department of Communication Studies supported our trips.

## Participants

Amy Bruckman, Philip Bernick, Ruth Crawley, Patricia M. Jones, Jack Muramatsu, Ivan Tomek, Patricia Schank, Peter Spellman, R. Michael Young, Kaisa Vahahyyppa.

## Contact Address

Department of Communication Studies
Linköping University
S- 581 83 Linköping
Sweden

e-mail: christer.garbis@tema.liu.se
yvowa@tema.liu.se