

# Compadres: Lightweight Support for Distributed Collaborators

Brian R. Johnson

Design Machine Group, University of Washington

[brj@u.washington.edu](mailto:brj@u.washington.edu)

## ABSTRACT

Design education has a strong reliance on passive presence awareness and unfocused interaction. This paper reports on Compadres, a system for support of distributed collaborators through creation of group presence awareness on the web. Compadres provides various configurable communications options, in both synchronous and asynchronous modes, including links for email, chat, and file transfer. It includes two levels of presence awareness: current status and an extended radar view providing "asynchronous presence." The system supports itinerant, or mobile, users (such as students) as well as situated users (such as faculty).

Our experiences with Compadres, which has been used by several classes and our research group, support those of others regarding the power of presence and messaging in supporting group cohesion, and indicate that it is possible to support infrequent or occasional collaboration as well as frequent interaction via the web.

## Keywords

Web, collaboration, presence awareness, workgroup awareness, Compadres

## INTRODUCTION

Design education, based on "studio" education and "project-based learning" has become something of a model for education. As pressures and opportunities increase to replace or supplement face-to-face educational models with computer-supported paradigms, it makes sense to look for insights within computer-supported design education. Donald Schön (1987) has written extensively about interactions within the studio and the role of what Goffman, (1963) calls "unfocused interaction" in the education of architects. The traditional design studio format is intended to create opportunities to overhear and observe interactions between others, including the studio mentor. Personal stereo systems and headphones are often banned during class hours as a consequence, even though students are working independently. Nonetheless, a number of experiments have been conducted using Internet and web-based collaboration tools to conduct "virtual design studios" involving design students collaborating on a project from different cities and time zones.

Research in Computer Supported Collaborative Work (CSCW) and Computer Mediated Communication (CMC) has often focused on support of distributed workers through digital replication of collocation communication options, particularly features of directed, or "focused" interaction (Dourish & Bly, 1992). Other research has found benefits from collocation of team members (Heath and Luff, 1996; Teasley, 2000), and some have found deleterious impacts of distributed work models in large corporations (Herbsleb, *et al.*, 2000).

Based on our own experience, we became interested in awareness and web-based workgroup presence. A survey of available tools supported the conclusion that a communications framework was needed, not a new communication tool. Task-oriented synchronous collaboration systems employing awareness have been shown to increase user satisfaction. Previous experience suggested that support for both asynchronous and synchronous communications was important. User Interface design guidelines suggested that simplification of the communication options would be good. The resulting system, by extending the communication functions of the user's computer environment, supports individual awareness of and participation in the group. It was first implemented in 1998 and has been undergoing informal evaluation and refinement since then.

## THE COMPADRES FRAMEWORK

The Compadres system was developed to investigate unfocused interaction, through a web-based presence awareness and communication interface. Of particular interest is the support of loosely-coupled distributed groups. This encompasses not only full time workers, but also mutual support in seminar courses, on-line office hours for educators, distance education groups, and research groups.

### Lightweight Client Interface

In Compadres we sought an extremely light-weight client with a focus on communication and a group presence monitor. No special hardware was to be required. A graphical web browser provides the client interface. The use of screen space was minimized. Data processing is handled by a web server application and "back-end" database. Users may use any networked workstation, including those in shared labs, and access Compadres by simply directing the browser to the correct URL.

The presence monitor (at the top of Figure 1) shows current group membership and individual connection status (through varied background colors—green for connected users, pink for absent ones). The display automatically refreshes several times a minute to reflect changing presence conditions within the group.

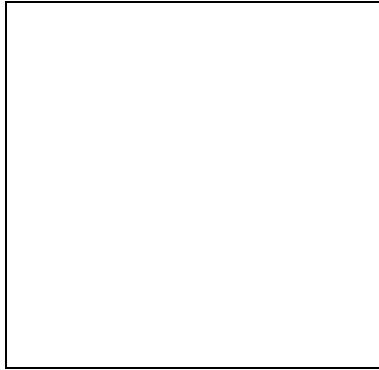


Figure 1. Compadres window, showing presence monitor, user data page, and history graphic.

### **The Personal Data Page**

Each user of Compadres has a personal data page (a portion of one is shown in the bottom area of Figure 1). This display provides the contact information that the individual wishes to share with other group members. The appropriate display is selected by clicking a name from the presence monitor at the top.

### **The "History" or "Extended Presence" Graphic**

The personal data includes (center-right) a graphic showing presence over time. This gray-scale density map shows the pattern and relative amount of time this user was connected during the previous two weeks. It supports collaboration through "way-laying" behavior, and provides an "extended presence" indicator for asynchronous users.

### **Messaging & the "Door Sign"**

When viewing the data page of a user, the one-line form may be used to write them a quick note. However, when viewing your own data page, this same input field may be used to quickly update the Door-sign activity status message (just below the photograph). Each individual's Door Sign is displayed as part of their data page.

## **CONCLUSIONS**

Compadres has been made available experimentally as part of several courses (a total of around 40 people), and by members of our research group. After using the system for a period of time ranging from a few days to several months, they were asked to provide feedback. Responses indicate that the features mentioned above—presence monitor, personal contact data pages, and history graphic—were found valuable. These preliminary results suggest that Compadres does contribute to group identity and cohesion, and does present users with recognizable benefits.

Additional information available at <http://www.caup.washington.edu/software/compadres/>.

## **REFERENCES**

- Dourish, P. and S. Bly (1992) "Portholes: Supporting Awareness in a Distributed Work Group", in *Proceedings of SIG CHI '92*, pp 541-547.
- Goffman, E. (1963) *Behavior in Public Places*, The Free Press of Glencoe.
- Heath, C. and P. Luff (1996) "Convergent Activities: line control and passenger information on the London underground" in Y. Engestrom & D. Middleton (eds.) *Cognition and Communication at Work*, pp96-129, Cambridge: Cambridge University Press.
- Herbsleb, J., A. Mockus, T. Finholt, R. Grinter (2000) "Distance, Dependencies, and Delay in Global Collaboration" in *Proceedings of CSCW 2000* (Philadelphia, December, 2000).
- Schön, D. (1987) *Educating the Reflective Practitioner*, San Francisco: Jossey-Bass.
- Teasley, S. et al., (2000) "How Does Radical Collocation Help a Team Succeed?" in *Proceedings of CSCW 2000* (Philadelphia, December, 2000)