# Chapter 12
# Contextual Issues in Groupware Applications for Educational Support Groups

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## ABSTRACT

*The objective of this chapter was to identify a set of contextual issues in groupware applications used by educational support groups. The analysis was performed through a Needfindings study where 20 active members of three Mexican federal educational-support groups called USAER were recruited. The analysis considered both users and functional vantage point. The participants (from one USAER) provided feedback and insights from their daily activities related to communication with others and resources access helping to define and understand users' scenarios. This information was classified and distilled as design ideas in low fidelity prototypes constructed by participants themselves under guidance from authors. Finally, prototypes were evaluated by the members of the other two USAER group providing their perception as expert users. The study derived in a set of particular contextual issues that directly influence interactions in group applications. These findings could be take into account by designers as a reliable starting point for well-designed User Interfaces for groupware.*

DOI: 10.4018/978-1-5225-2616-2.ch012

## INTRODUCTION

The working groups use different technologies as support tools for their activities (e.g., email, instant messaging, applications for data storage, social networking, text messaging, among others) to achieve specific objectives and meet goals group (Gräther et al., 2014). Available technologies allow members of working groups to communicate, interact and collaborate across a wide range of methods, minimizing common communication barriers as distance and time, and facilitating communication and exchange of information between group members, issues that are crucial to the effectiveness of a working group (Sagar, 2012).

Currently, the use of applications that allow communication, collaboration and interaction between multiple users play an important role in daily activities e.g. *groupware systems*; Ellis, Gibbs, & Rein (1991) suggest that society acquires much of its nature from the way that people interact and communicate through message exchange. Groupware systems or collaborative software refers to the use of techniques, methods and software tools that allow members of a working group to carry out their task and activities through data communication networks, either individual or collectively, and regardless of geographical location or time the activities are executed. Groupware systems or also knows as Computer-supported Cooperative Work (CSCW) are increasingly used due the facility to integrate knowledge among working groups and facilitate their communication. Groupware represent a great tool for people group-work since they have multiple possibilities oriented to improve interaction, collaboration, and communication between group members.

The term groupware was first defined by Johnson-Lenz in 1981 referring to *an intentional group processes plus software to support them,* later, in 1982 he defined groupware in his book «Groupware: computer Support for Business Teams» as a *computer-based system plus social work-groups processes* (Johnson-Lenz & Johnson-Lenz, 1998: 1982), other definitions of groupware are:

- (Berkenbrock, da Silva, & Hirata, 2009), it is software that allows the creation of cooperative work by using specific technologies to make the groups more productive.
- (Dix A., Finlay, Abowd, & Beale, 2004), groupware is a term for application written to support multi-user collaboration.
- (Ortega & Bravo, 2001), it is the hardware and software that support and enhance teamwork, therefore, groupware is a set of oriented products to group work, i.e., help groups of people work together.
- (Ellis, Gibbs, & Rein, 1991), computer-based systems that support groups of people engaged in a common task (or goal) and that provide an interface to a shared environment.

The goal of groupware is to assist groups to *facilitate communication, foster collaboration and improve coordination* of tasks and allow monitoring the process of building their common activities (Sosa, et al., 2006), (Ellis, Gibbs, & Rein, 1991). We define groupware as *a set of technologies integrated into a system that allows work groups to perform a common task using a shared environment,* i.e., this technology focuses on designing systems to support group work and the effect that technology on the working group. The purpose of all groupware systems is to provide the required functionality to allow *user to user* interactions, unlike the *user-system* interaction supported by the most conventional software systems (Noruega, 2009), (Ortega & Bravo, 2001), (Lococo & Yen, 1998).