Chapter V

Bridging the Gap between Human Communications and Distance-Learning Activities

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Abstract

This chapter introduces context-aware computer-mediated communication for distance learning systems. It argues that linking deeply communication to learning activities offers an interesting approach to develop the efficiency of systems in facilitating and increasing discussions between learners. To make this link, the author bases his work on various theories, such as communication theories, situated cognition theory, and activity theory. This theoretical study leads to research issues concerning a contextual forum model. The description of the computing implementation of this model aims at giving researchers some possible uses and
recommendations in dealing with context-sensitive communication tools. Finally, the chapter mentions futures trends and suggests emerging research opportunities within the field of communication services that are able to adapt dynamically to the user’s activity.

**Introduction**

In a distance-learning context, the emergence of learners’ communities has a favourable impact on learning conditions. Indeed, in a socioconstructivist approach (Doise & Mugny, 1984), interactions between learners play a dynamic role to individual learning. However, distance discussion tools are not always really suitable for the emergence of learners’ communities. Some works have highlighted that these phenomena are too rare in distance-learning environments (Gommer & Visser, 2001; Hotte & Pierre, 2002).

Forum tools currently used in online educational platforms are mostly unspecific to educational situations (George & Hotte, 2003). The discussion activities are not linked to the learning activities; consequently, this does not encourage the learners to use them for communication. Current distance-learning systems do not respect human communication process that is an “in-context” process (Jakobson, 1960). Our main idea is then to make communication more immediate during learning activities. The aim of this chapter is to describe the conception of forum models and tools that are specific to distance-learning systems. The research question lies in determining how to link discussion activities to learning activities by the mean of well-suited computer tools. On the whole, the work concerns the design of human communication systems that attempt to respect human thought process. We totally agree with the paradigm of “cognitively informed systems,” which defines systems that utilize, as a basis for their design, some form of cognitive findings to enhance the effectiveness of the systems in achieving their targets. For the design of our communication system, some results from communication theories, situated cognition theory, and activity theory are used to develop the efficiency of the system in facilitating and increasing discussions between learners. These theoretical considerations guide the system design toward a more effective presentation of discussions.

The chapter concerns the design of forum models and tools which aim at promoting text-based asynchronous discussions during learning activities that are not collaborative a priori. During individual learning activities, to only