Chapter XII

Communication, Coordination, and Cooperation in Computer-Supported Learning: The AulaNet Experience

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Abstract

This chapter introduces an approach based on the 3C (communication, coordination, and cooperation) collaboration model to the development and analysis of collaborative systems, by means of a case study of a learningware (AulaNet) and the methodology of a Web-based course, both designed based on the model. The 3C model is presented through the
Collaboration may be seen as the combination of communication, coordination, and cooperation. The 3C model was originally proposed by Ellis, Gibbs, and Rein (1991), with some terminology differences. It appears frequently in the literature as a means to classify collaborative systems or as a basis for groupware development methodologies (Borghoff & Schlichter, 2000; Laurillau & Nigay, 2002). In this chapter, we explore the 3C model as a means to represent a learningware application domain and also as a basis for a system development. The relationship among the 3Cs of the model facilitates the understanding of a groupware application domain. In this chapter, we are focused on the group work domain, which is represented in Figure 1. According to this instantiation of the 3C model, communicating people negotiate and make decisions. The commitments generated during communication are organized into tasks managed by coordination. While coordinating themselves, people deal with conflicts in such a way as to avoid the loss of communication and cooperation efforts. Cooperation is the joint operation of members of the group in a shared space to complete tasks and generate and manipulate cooperation objects. The needs of renegotiation and making decisions about unexpected situations that appear during

**Figure 1. 3C collaboration model instantiated for group work**
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