Chapter XIV

Virtual Classroom Facilities Imbedded in a Course Management System

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Abstract

A basic condition for efficient computer-supported cooperative learning in higher education is the direct support of computer-mediated communication and computer-supported cooperative work. In this chapter, it will be reasoned why a combination of these features in one system is essential for well-functioning learning management systems (LMS). In addition to theoretical considerations about the link between learning objects, cognition, motivation, social processes, and practice, different e-learning and blended learning projects at the Freie University of Berlin are outlined. Finally, desirable cooperation and collaboration tools for an LMS are presented and related to psychological learning theories.
**Introduction**

In order for higher education to have efficient computer-supported cooperative learning (CSCL) the direct support of computer-mediated communication (CMC) and computer-supported cooperative work (CSCW) is required. The combination of these features in one system is a move for LMS into a next stage of maturity, which has been triggered by the need to associate learning objects, presentation, cognition, emotion, motivation, communication, cooperation, and practice. LMS must accommodate the variety of distributed learning formats (i.e., online, blended, hybrid, etc.) as well as the variety of learning activities that should be enacted and supported by collaborative and cooperative functions grounded in psychological learning theories.

In Germany, the idea of virtual (online) and blended learning, as well as the concept of virtual universities, is increasingly discussed in the literature and at conferences, congresses, and fairs (see Albrecht, 2003; Bett & Wedekind, 2003; Dohmann & Michel, 2003; Kandzia & Ottmann, 2003, Kerres, Kalz, Stratmann & Witt, 2004; Kerres & Voß, 2003; Rinn & Meister, 2004; Schulmeister, 2003; Uhl, 2003). Such initiatives have raised the following questions that must be dealt with: What are the benefits of computer-supported learning? How is it possible to achieve economic, motivational, and didactical quality in blended learning and e-learning courses? Which supportive structures are essential in looking at the relationship between learning objects, emotions, motivation, CMC, CSCW, and CSCL?

**Conceptual Background**

To approach answers to these questions, let us start with an illustration of the basic concept of “e-learning.” E-Learning can be defined as:

- Computer-supported.
- Acquiring or accommodating and assimilating information or procedures (e.g., data, facts, algorithms, heuristics).
- Utilizing different forms of presentation (e.g., text, hypertext, drawings, pictures, animations, videos, speech, sounds, music).