Chapter 9
A Model for Monitoring and Evaluating CSCL

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ABSTRACT

This chapter tackles the issue of monitoring and evaluating CSCL (Computer Supported Collaborative Learning) processes. It starts from the awareness that most of the tasks carried out in managing, tutoring, fine tuning and evaluating online courses heavily rely on information drawn through monitoring. Information of this kind is usually needed for both the assessment of individual learning and the evaluation of a learning initiative. The development of a sound, general purpose model to organize this information serves a variety of purposes, since it makes the monitoring, assessment and evaluation processes more systematic and effective. By describing the model and providing concrete examples of its use, the goal of this chapter is to demonstrate its potential, flexibility and suitability to meet evaluators’ aims in a wide range of cases. The model gathers consolidated practices in the field and is based on the most recent findings of theoretical CSCL research.

INTRODUCTION TO THE CSCL FIELD

This paper addresses the issue of monitoring and evaluating collaborative learning processes that take advantage of computer communication technology and are typically carried out at a distance. In particular, we focus on CSCL (Computer Supported Collaborative Learning) approaches based on social constructivism (Dillenbourg, 1999; Kanuka & Anderson, 1999; Vanderbilt, 1991; Scardamalia & Bereiter, 1994), where knowledge building takes place through social negotiation. In this approach, discussion with peers and teachers is the main learning method because it encourages critical thinking and, hence, understanding. Interaction is usually based on written asynchronous message exchanges in specific environments known as Computer Mediated Communication.
(CMC) systems, that allow the organization of communication along separate, topic-oriented discussion “forums” or “conferences”, and provide the valuable benefit of recording most significant events for subsequent reinspection and analysis. Even in those cases where interaction occurs synchronously (e.g., through chats), the underlying communication system usually allows one to record a transcript that participants in the learning community can later retrieve.

Social constructivism promotes a shift from the traditional teacher-centred approach to a setting where students are the main actors on the learning stage and take direct responsibility for their knowledge building processes. In this kind of setting the terms “teacher / instructor”, that usually indicate the actors in charge of designing, delivering and evaluating the learning event, recede in favour of two different terms: “designer”, to indicate the person in charge of setting up the course, and ”tutor”, to identify the person in charge of orchestrating and moderating online discussions among the members of the learning community (students, experts, etc.). Accordingly, tutors are not experts who fulfil their role by dispensing domain knowledge, but rather they are in charge of setting up and maintaining collaborative processes. Of course, while orchestrating and moderating online interactions, each tutor will deploy their own personal tutoring style, but to ensure the effectiveness of their action, tutors must always have a clear picture of what is happening, who is participating and how, in order to anticipate and deal with problems, to identify different learning styles, and to help students to exploit their own individual abilities. When the learning community is large and participation is high, gathering and systematically organising these kinds of information can be quite a labour intensive task.

Currently, CMC systems provide generic statistic tools that can be used to track participant behaviours, even though most of them only provide a quantitative picture of events (EduTools, 2008). In contrast, what is needed is a complete, both quantitative and qualitative picture, able to inform the assessment of student individual learning (both in progress and at the end of the course) and the evaluation of the whole instructional initiative.

More specifically, formative assessment of students usually takes place during the course and is an essential condition to ensure a good degree of personalization of the learning process. As such, it relies heavily on information gathered through monitoring. Summative assessment of students is a frequent context requirement of formal learning institutions and generally includes not only product evaluation, that can be used as an indicator of effectiveness, but also process evaluation, based on the same data as those that inform formative assessment.

Finally, the evaluation of the learning event may be aimed at measuring efficiency, effectiveness, personalisation and/or other features of the whole process. Generally speaking, evaluating a learning event means carrying out a systematic study to produce a value judgment on those aspects that are the goal of the evaluation. Such a study normally encompasses the collection, analysis and interpretation of information on the event (Thorpe, 1993), such as the quality of the learning materials, the effectiveness of the tutoring, the suitability, the user-friendliness and the efficiency of the tools used. In particular, the evaluation of the efficiency of a learning event often includes organizational aspects or issues related to the cost-benefit ratio of the event, where costs and benefits are not considered solely from a financial standpoint. Costs can indeed also be regarded from the point of view of investments in human resources and learning materials, whilst benefits usually include educational and social outcomes. The evaluation of the cost-benefit ratio of a learning programme is therefore quite complex and involves political, social, economical and educational considerations (Phillips, 1998; Trentin, 2000).
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