Chapter XIII
Authentic E–Learning in a Virtual Scientific Conference

Josianne Basque
Télé-université, Canada

Kim Chi Dao
Télé-université, Canada

Julien Contamines
Télé-université, Canada

ABSTRACT

The goal of this chapter is to illustrate how the concept of authentic learning can be implemented in a Web-based distance course. We present a collaborative e-learning scenario, inspired by socioconstructivist and situated learning theories, which encourages authentic learning. Developed as the main learning scenario of a graduate distance education course, it requires students to participate asynchronously in a simulation of an online scientific conference. We describe the learning scenario, the technological environment developed to implement this scenario, as well as some results of a course evaluation completed by students.

INTRODUCTION AND BACKGROUND

Over the last few years, online learning has become increasingly popular not only for distance education universities, but for campus-based universities as well. At the same time, all levels of the education sector have been undergoing a paradigm shift towards socioconstructivist and situated approaches to learning (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991; McLellan, 1996; Orey & Nelson, 1997). However, perhaps

because of short deadlines or the absence of proper training on instructional engineering of e-learning, designers of Web-based courses often tend to reproduce traditional teaching practices used in class. They tend to use teaching strategies reflecting a view of knowledge as being something that has to be transmitted essentially by the teacher, instead of something that has to be actively constructed by the learner. Thus, instructional designers are in need of new models and ideas to help them implement socioconstructivist and situated learning principles in the design of online courses.

Authentic learning is a mainstream approach suggested by many authors to support socioconstructivist and situated learning. For example, Duffy and Jonassen (1991) propose that students should use tools to perform activities which are similar to those found in their future professional fields. Savery and Duffy (1995) also highlight the importance of creating situations which permit students to practice the competencies required by the professional environments in which they will eventually be working. Herrington and Oliver (2000) make the following recommendations for the design of authentic learning environments: (1) provide authentic context that reflects the way the knowledge will be used in real life; (2) provide authentic activities; (3) provide access to expert performances and modeling of processes; (4) provide multiple roles and perspectives; (5) support collaborative construction of knowledge; (6) promote reflection to enable abstractions to be formed; (7) promote articulation to enable tacit knowledge to be made explicit; (8) provide coaching by the teacher at critical times, and scaffolding and fading of teacher support; (9) provide for integrated assessment of learning within the task. Rule (2006) analyzed the content of 45 articles describing authentic learning in different disciplines and identified four overarching themes that repeatedly occurred: (1) real-world problems that mimic the work of professionals, with presentation of findings to audiences beyond the classroom; (2) inquiry activities that practice thinking skills and metacognition; (3) discourse within a community of learners, that is to say, interactions and discussions with other learners, teachers; and professionals outside the learning community; and (4) student empowerment to direct their own learning in relevant project work.

Concrete examples of online authentic learning environments are still scarce (Herrington, Herrington, & Omari, 2002; Herrington, Oliver, & Reeves, 2003; Reeves, Herrington, & Oliver, 2002). This chapter describes a model for structuring all aspects of an online course at the graduate level, which, we believe, is a good illustration of how many of the authentic learning principles could be implemented in a virtual learning environment. The main idea is to have students participate in a simulated asynchronous virtual scientific conference (VSC). Few collaborative online activities reported in the literature use the scientific conference analogy to structure interactions among distant learners. Fjuk and Sorensen (1997) describe what they call "Pedagogical On-line Seminars," which consist of virtual forums moderated by a professor or an expert in a given domain. Clemson (2002) describes an online course including a "virtual poster session" as a typical activity of a scientific conference. This course is conducted in a synchronous mode and implies file sharing and chatting among students. In our course, all the learners' interactions occur asynchronously and three main events guide the progression of the course: a virtual poster session, a symposium, and a plenary session.

Scientific conferences are events that graduate students, who are future high-level researchers and professionals, are likely to attend during and after their studies. Therefore, they need to familiarize themselves with the typical rules and practices of that type of event and to develop competencies in critical thinking, in formulating constructive comments, and in participating in scientific debates. Having them participate in a simulated scientific conference in the context of a course

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