

# Online Support for Collaborative Authentic Activities

**Sue Bennett**

*University of Wollongong, Australia*

## INTRODUCTION

Collaborative learning has long been part of university study; for example, through group discussion, laboratory work in pairs and group projects (Jacques, 1991). In the past, these kinds of collaborative activities have been available only to full-time, on-campus students because of the difficulties in finding time and space for students to work together (Kimball, 2001). However, Internet-based communication technologies have made possible more flexible approaches to learning that offer new opportunities for students to collaborate (Bonk, Malinkowski, Angeli, & Suplee, 1998; Collis, 1996; McLoughlin, 2002; Oliver & Omari, 1999; Palloff & Pratt, 1999). Support for learning “anytime, anywhere” has changed patterns of on-campus attendance at many institutions, meaning that students come to class irregularly, infrequently or not at all.

Another recent trend in higher education has been the use of authentic activities to help students understand how the knowledge and skills they learn relate to practice (McLoughlin, 2002; Reeves, Herrington, & Oliver, 2002). Such “authentic” activities aim to set learning within a real-world context (Bennett, Harper, & Hedberg, 2001; Herrington & Oliver, 2000). The rationale for authentic activities comes from the assumption that “people transfer learning with difficulty, needing both context and content learning” and, therefore, “skills and knowledge are best acquired within realistic contexts” (Grabinger, 1996, p. 667). An authentic task reflects the characteristics and complexity of the real-world setting (Barab & Duffy, 2000). Thus, when collaboration is a feature of the real-world environment, it also reflects the ways in which practitioners work together, the range of perspectives on a problem or issue, and the way knowledge is shared within communities of practice (Brown, Collins, & Duguid, 1989; Duffy & Cunningham, 1996; Lave & Wenger, 1991).

Case-, problem- and project-based learning have been advocated as specific instructional strategies to

support authentic activities (e.g., Duffy & Cunningham, 1996; Jonassen, Mayes, & McAleese, 1993; Savery & Duffy, 1995). These approaches are thought to offer a wide range of benefits to students by distributing knowledge and workload among group members, providing motivational support and bringing learners into contact with alternative interpretations and views. In particular, such approaches encourage collaboration through:

- collective problem solving (Barrows, 1994; Jonassen et al., 1993; Herrington & Oliver, 1997)
- group project work (Blumenfeld, Soloway, Marx, Krajcik, Guzdial, & Palincsar, 1991; Cognition and Technology Group at Vanderbilt, 1997)
- discussion of rich descriptions of realistic cases (Ertmer & Russell, 1995; Stepich, Ertmer & Lane, 2001).

This article summarises the findings from a recent study of the role of online technologies to support collaborative project teams.

## BACKGROUND

A recent study of learners engaged in technology-supported authentic activities that relied on collaboration amongst team members provided insights into how online technology can support collaboration (Bennett, 2004). Students undertook a project activity that required them to work in small teams on a design and development task for a real client. The task reflected key characteristics of a real-life instructional design problem and provided learners with the opportunity to experience a team-based approach typical of real-life multimedia production. Most students were enrolled part-time and lived away from campus, so online support tools were used. Technology played three main roles in supporting the students’ work on the authentic task.

It facilitated the seamless presentation of resources through the Web, thus providing access to a rich set of materials in a variety of formats. Learners used software tools also used by practitioners to represent project ideas through text and graphics, and to organise their project resources. Conversation and collaboration tools allowed the learners to share their ideas and interpretations, and supported group negotiation and organisation.

A qualitative case study approach was used to investigate learners' experiences of this environment, and data in the form of interviews and discussion list transcripts were collected from six teams over two years. Comments from the students about their successes and failures indicate that online technologies played a critical role in supporting the collaborative process amongst team members. Six common themes emerged from the analysis of the data.

## **KEY FINDINGS**

### **Open Communication was Critical to Team Success**

Students observed that open communication had to be established and maintained for the team to succeed. For most teams, this meant managing communication among members working in different locations and at different times.

### **A Range of Tools and Strategies were Needed to Support Teamwork**

The teams used a range of tools and strategies to support group work. This included the use of face-to-face meetings and computer-based communication tools for discussion, and sharing of files through e-mail and a file server. Teams chose options from a range of supports available within the learning environment, finding the right combination of tools and strategies to suit their particular needs.

### **Particular Challenges to Good Online Communication Existed**

Despite the advantages of using online tools, online communication could be difficult to initiate and main-

tain. Online communication lacked the immediacy of face-to-face conversation and so could be ignored or neglected, or misunderstood more easily than discussion in person or by phone. Some students also experienced technical difficulties that caused communication to break down. To address these issues, teams explored a number of alternatives to find the right tools.

### **Teams Needed to Adapt Their Communication Patterns Throughout the Project**

The teams found that their patterns of communication changed throughout the project. In the early stages, most groups met at least once per week as they got to know each other and exchanged ideas about the project requirements. As the projects progressed, team members took on more specialised tasks and met less frequently. Towards the end, some teams found that they needed to meet and work on the project together. These changes required the adaptation of tools and strategies for communication.

### **Online Tools for Managing and Organising the Project were Essential**

Online tools were used to manage and organise work on the project. Asynchronous and synchronous communication tools were used to maintain contact and plan forthcoming meetings. The file server was used as a repository for project management documents, such as design specifications and meeting records. This allowed all team members to review documentation at any stage of the project, and ensured that all members of the team had access to the same versions.

### **Online Tools Supported Interaction with the Whole Class and the Instructor**

In addition to supporting communication amongst the team members, asynchronous communication tools enabled students to interact as a class group and with the instructor. The whole class discussion forum provided a space for students to ask general questions about the subject, as well as to share observations. This meant that students could follow the progress of other teams and feel that they were part of a larger group. The lecturer could also make contributions to this forum, allowing

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