Chapter 9
Synchronous Tools in Support of Teaching and Learning

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ABSTRACT

Instant messaging and text chat, online collaborative whiteboards, web conferencing and other synchronous Web 2.0 tools are increasingly finding their way into higher education and are available in both commercially-branded and open source varieties. This chapter describes excellent practices and challenges in using these tools for synchronous and blended course delivery, collaboration, learning activities, and technical support, based on the author's experience in online education and online-teaching support. Synchronous tools can provide immediate and efficient communication for instructors, learners and support staff, foster community and establish a heightened sense of social presence. An increasing number of practitioners in the field of distance learning are using synchronous tools to reach their learning and support objectives (Murphy and Rodríguez Manzanares, 2008). Today, institutions have a whole menu of synchronous tools to choose from, ranging from free and open-source software to more costly commercial enterprise systems. These tools enable education and support for teaching and learning to happen across great distances and on all types of mobile and not-so-mobile computer devices. This chapter will describe some of these tools, the types of needs that drive their use, and strategies for effective use and implementation.

BACKGROUND

In the past, distance learning was by definition asynchronous, relying primarily on correspondence via mail (Prewitt, 1998). By the early 1990s, teaching methods in distance learning became more synchronous, with the use of videoconferencing via cable, microwave, satellite and audio

conferencing, predominantly via telephone (Perez-Giese, 1996). By the mid-to-late 1990s, however, asynchronous tools grew in popularity once again, with the rise of Learning Management Systems (LMS) and Course Management Systems (CMS). In recent years, thanks in large part to the increasing availability of high-speed broadband internet access, new and highly effective synchronous tools with great promise for distance teaching, learning and support have begun to emerge.

The trend in distance and online education is toward an increased use of synchronous tools for effective communication between teachers and learners. Many of these tools have been experiencing convergence over the past decade. First, instant messaging (IM), which unlike electronic mail is predominantly used synchronously for relatively brief messages, was coupled with audio and then video chatting capability, and is now integrated with most major email systems like Yahoo and Gmail. Second, there are many possible software solutions for webconferencing, including free, open source and enterprise, which incorporate videoconferencing, webmeetings, webinar functionality, and collaborative whiteboards as well as text chat and audio/video into a single package. Many of these solutions can be either embedded into any online course space, web site, or are integrated with LMS's, allowing the learning community single sign-on access from within courses. Finally, hundreds of colleges and universities in the U.S. alone have implemented lecture capture systems to record and provide both live and archived access to classroom activities, thus bridging the gap between synchronous and asynchronous access.

Introduction to Synchronous Tools

Over a decade and a half ago, when the author began working in the field of distance learning, email was, for him, quite new. Back then, instant messaging barely existed as we know it today. There were chat rooms, Bulletin Boards and Internet Relay Chat (IRC). Virtual worlds existed in the form of Multiple User Dungeons (MUDs) and Multi-User Dungeons Object Oriented (MOOs) (Sanchez, 2009). But the "instant messenger" as we know it had yet to be born. Videoconferencing, shared whiteboards, and webinars were still in their early infancy. Today, instant messaging has become ubiquitous, and has the added possibilities of connecting people via audio and video and sharing their screen, mouse or keyboard. When

(a room full of college students was) recently asked who had used an instant messenger, every student's hand was in the air. The same was true of text messaging on mobile phones.

Visit the offices of the Center for Teaching and Learning (CTL) for the Johns Hopkins Bloomberg School of Public Health (JHSPH) on any given day and you will see instant messaging and web conferencing in use as people coordinate and collaborate (both in office and remotely), get quick answers to pressing questions, communicate about incoming phone calls prior to forwarding, send files to one another, remind each other of meetings, inform each other of their whereabouts using IM presence or transmit other important announcements. Tools such as AOL Instant Messenger (AIM), Google Talk/Gmail chat, Skype, FaceTime, join.me, Google+ Hangouts, Google Drive, and Adobe Connect provide us the ability to plan and coordinate, see and hear each other and our computer screens, collaboratively develop courses, and share links and resources. Clearly, instant messaging and webconferencing have become useful and necessary to people in a variety of contexts. Young people, students, office workers, grandparents, friends, you name it, all of these people have started using synchronous tools because they are instant, convenient, low-cost, and easy. While a grandparent can spend time reading books to a grandchild hundreds of miles away, an instructor can provide a guest lecture or remote question and answer session for students thousands of miles away. Most of these tools work on many different types of devices as well: desktop computers, laptops, mobile phones, and tablets.

What is needed to use these tools? For hardware, one only needs a computing device capable of running the software and an internet connection. It is often highly recommended for audio/video users to have a USB headset or other headset with both audio out and microphone input. For webconferencing with larger groups, it is generally required for all to use a headset to prevent feedback loops. It is notable that one-to-one audio/video

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