

# E - LEARNING



## Synching Up With Virtual Classrooms

By Kevin Oakes  
With Raghavan Rengarajan

Whenever I see a benefits list for e-learning, it's common to see "time and place independent" as one of the primary value propositions. However, that description applies solely to asynchronous e-learning (stored content on a server or CD-ROM). Currently, the use of synchronous technology is probably the most popular form of e-learning, even though it doesn't fit neatly into that value proposition. Widely popular, synchronous learning is likely to become even more popular, so it had better become part of your lexicon if it isn't already.

*Synchronous* wasn't a commonly used word outside of the summer Olympics;

when I first heard it, all I could think of was synchronous swimming. However in e-learning, it's now used to describe communications and interactions that happen in real time over the Web, or "time dependent, place independent." In learning, that real-time interaction includes the interaction between a learner and the instructor, as well as the interaction among learners.

One reason synchronous e-learning will continue to gain in popularity is because it mimics a format most of us are comfortable with—the traditional classroom or instructor-led training, which thrives on real-time interaction. The

# E - LEARNING

ability to learn through direct interaction with an instructor and other students is usually viewed as the most effective form of learning, but ILT is one of the most expensive ways to achieve that.

## Virtually

Advancements in real-time Web technologies have made synchronous learning possible through virtual classrooms. In fact, synchronous learning has more or less become synonymous with *virtual classroom*, a much easier term to understand. A virtual classroom is an online learning environment that tries to closely copy a classroom, with Web-based bells and whistles added. A virtual classroom conceptually offers the exact same learning environment as a real classroom except that the participants don't need to get together physically in one place. In other words, virtual classrooms help reap the benefits of traditional ILT without necessarily incurring all of the usual costs (facilities, travel expenses, and so forth) and inconveniences.

For a virtual classroom solution to be effective, at minimum it needs to offer online equivalents of every type of major interaction that happens in a real classroom.

**Audio and video.** The ability to see and hear each other is something we take for granted in a classroom. However, that's not a trivial undertaking in an online, Web-based environment. Computer connection speed is often a limiting factor faced by all real-time audio and video technologies. Some virtual classroom solutions offer streaming of audio and video over the Internet. The quality of reception experienced by participants depends on the speed of the connection and how much traffic is on the Web at the same time. In addition, participants need to have a microphone hooked to their computers to be able to talk and a video camera if they want to be seen.

Some synchronous solutions avoid

those complexities by relying on a telephone for audio support and by not worrying about live video. Though the regular phone system is a good backup if streamed audio quality is poor, it can also be problematic if a learner has only one phone line and is using it for the computer's modem connection. In addition, the ability to record a session can sometimes be challenging when the audio is going through a company's PBX. Consequently, most buyers view a solution that has built-in audio streaming—usually referred to as “voice-over IP”—as a system that provides the maximum flexibility.

**Visuals.** In a classroom, instructors often use a video projector to display and step through slides as they talk. The contents of the slides often serve as a prompter for the instructor, as well as a tool for participants to visualize concepts. Virtual classroom solutions usually support that approach by letting the presenter upload and distribute the material and run tools such as PowerPoint virtually. Most virtual classroom technologies also accommodate such presentation materials as documents, HTML pages, and graphic files.

**Whiteboards.** It seems as if writing on a blackboard is as old as the classroom. The blackboard has evolved into a whiteboard, a classroom staple that's present in the virtual world in the form of a shared electronic whiteboard, on which everything written or drawn by the instructor is relayed synchronously to all participants.

As with a traditional classroom that might have many whiteboards, a virtual classroom solution should enable the instructor to use an unlimited number of whiteboards and save the whiteboard contents automatically for later use in the session. Sometimes, instructors also highlight concepts with a pointer on PowerPoint slides when explaining a concept or answering questions. Virtual classrooms often support that approach by letting the instructor highlight or draw on the presentation material as

well as the electronic whiteboard, and the files can be saved for later use.

**Application sharing.** Live demos of software applications and hands-on participation with the applications are important types of interaction when learning in a classroom. In online participation, it might not be possible to duplicate a classroom hands-on experience for anything that requires physical access, such as learning how to swing a golf club. However, a virtual classroom solution should at least let the instructor show students a software application in real-time.

Most virtual classrooms allow live online demos by sharing a single application or the entire desktop of an instructor or learner. Some advanced virtual classrooms also enable instructors to selectively pass input control of the shared application to participants—meaning that as a student, you can use the software as if it resided on your computer. That's an important functionality because teaching people how to use software makes up a significant percentage of all training that occurs within an organization.

**Choreography.** A classroom is (usually) a controlled environment in which the instructor choreographs the interactions (or so every instructor likes to think). Most instructors don't let all participants talk at once or address the class whenever and however they want.

Conventional protocols prescribe when a participant is expected to talk, such as when asked by the instructor or by requesting permission by raising one's hand or other visual cue. Enforcing such protocols is even more important in an online environment, in which bandwidth is limited and participants usually can't see each other. If that's not coordinated well, it leads quickly to chaos.

Most virtual classroom solutions have well-defined processes to facilitate interaction. For example, the system probably lets only one person talk and drive the session at any given point. A request for

floor control usually has to be explicit and passed on by the person who currently has floor control. The instructor may have overriding capabilities to take back control at any time.

That, coupled with features such as virtual hand raising, signals to the instructor to slow down or speed up, and other electronic cues help mimic a classroom and offer functionality that's hard to duplicate in a classroom. For example, good instructors feel they're adept at reading participants' minds by looking at their expressions to see whether the pace and content are hitting the mark. In a virtual classroom, instructors rely on direct feedback electronically from learners, which some instructors think is a benefit; others miss the ability to see faces.

**Group feedback.** Instructors usually encourage and solicit live feedback in a classroom. For example, an instructor might ask how many participants understand a certain concept and decide to cover or not cover it in detail, based on the majority response. Similarly, virtual classrooms usually provide an online mechanism through which the instructor polls the participants in real time and takes further actions based on the results. The benefit is that participants are more likely to respond. Think about it: How few people raise their hands to questions posed to the entire class? People often respond in a virtual environment more honestly because the polling is typically anonymous.

**Breakout sessions.** Instructors sometimes divide participants into separate teams and ask them to conduct group exercises. Virtual classrooms usually let group members interact with each other in a sub-session, equipping them with almost all of the online tools available in a regular session. Such breakout sessions are important to enhancing interaction and peer learning.

### Beyond classrooms

Although job 1 of a virtual classroom is

to copy most traits of a traditional classroom, it also offers unique benefits not usually possible in a "real" classroom.

**Instant messaging.** In a classroom, one-on-one peer interaction is often limited to whispering to the person sitting next to you. Online, however, a participant can engage in a private conversation with any other participant or the instructor through instant messaging or private chat without disturbing the rest of the class. By typing in a separate small window, any two people can engage in a side conversation (if allowed by the instructor) that no one else sees but them. Some people view that as distracting, but often that functionality enables informal learning that complements formal learning.

**Selective discussion.** Private interaction between a participant and the instructor while a class is in session is usually impossible. Because of that, every question has to be asked and discussed in a public forum. Because online environments enable private interactions between a participant and the instructor during a session, the instructor can filter questions and decide whether to discuss with the class or answer privately. In virtual sessions, instructors sometimes use expert assistants to help answer questions raised during and after the session, freeing the instructor to concentrate on the presentation.

**Archiving, easy and complete.** Though classroom sessions are sometimes recorded using video equipment, that often requires cumbersome setups and additional people. Even when done effectively, it's typical for interactions to be missed—such as who asked a question or what was written on a flipchart. Watching the video afterwards is a passive exercise that's usually not enjoyable or constructive.

A good virtual classroom solution can record and archive almost every interaction that happens in an online session. In some systems, the archiving is done on the server and the instructor doesn't need special hardware or software on his or her

desktop. Once recorded, some systems allow the session to be edited and republished as an asynchronous course, providing maximum reuse of the class as well as interactivity—something that's impossible to do with instructor-led training.

**Scalability.** A classroom usually doesn't scale beyond a certain point due to the physical size limitations of the facility. Often, the number of participants allowed to register is determined by the number of seats. Virtual classrooms, in theory, have no such requirements. Although most virtual instructors will say there's an optimal number of participants for active group interaction, usually not much different from the number required in a traditional classroom.

Social reasons aside, a good virtual classroom solution can scale technically to whatever size is practical. The scalability can be increased further by selectively turning off specific features that might not be relevant for a given session—for example, video streaming.

### When to use synchronous learning

Though synchronous learning offers significant advantages over traditional classroom training, it also has key downsides when compared to asynchronous e-learning. For example, delivering a virtual classroom is still costlier over the long term than delivering a self-paced course, particularly because it requires the real-time participation of an instructor. Unlike a self-paced course that can be taken at any time, a synchronous session requires all participants to join in at a predefined time. For busy professionals, the attraction of asynchronous e-learning is taking it when they want to.

Despite the asynchronous e-learning advantages, effective self-paced courses can take a long time to develop and are typically created by a team. One reason virtual classroom technology is gaining in popularity is that with existing technology, one instructor might be able to deliver

# E - LEARNING

an effective synchronous session on a moment's notice, with minimal preparation. Because the environment does a good job of leveraging existing material and is familiar to most instructors, jumping into a classroom—even though virtual—is something trainers have done for years.

“Viral technology” is something that has a life of its own; users like the experience so much that they demand the use of the technology for future applications. Virtual classrooms are extremely viral: Participants conjure up future uses for the technology in their departments. Many senior managers, forced to use synchronous technology due to reduced travel, are now demanding it when face-to-face meetings can be avoided.

In the early days of e-learning, many observers predicted that self-paced learning would make classroom learning obsolete. But time-proven classroom methodology continues to thrive, and its effectiveness and convenience have increased through the advantage of synchronous technologies, which are revolutionizing the way people do business and gaining ground as mainstream productivity applications.

Companies serious about improving productivity must consider adopting synchronous technologies as an integral part of their corporate cultures.

*Kevin Oakes is CEO of Click2learn (NASDAQ: CLKS), producer of the Aspen Enterprise Learning Platform, which allows organizations to capture, manage, and disseminate corporate knowledge to improve productivity and business performance.*

*Raghavan Rengarajan is VP of product strategy at Click2learn.*

Email your questions on e-learning to be answered in future articles to [kevin.oakes@click2learn.com](mailto:kevin.oakes@click2learn.com).