Benefits of Synchronous Online Courses

Scott Moser
Coordinator of Instructional Activities
smoser@tctc.edu
(864) 646-1316
Phil Smith
Instructor, Computer and Information Technology
psmith2@tctc.edu
(864) 646-1320

Tri-County Technical College
511 Michelin Blvd
Anderson, SC 29625

Abstract

Most online courses are offered as "asynchronous" courses and have no real-time contact with students. The Synchronous online alternative provides normal scheduled class time and allows students to login to a virtual online classroom with the instructor. We provide an overview of two different platforms for hosting synchronous classes online and look at the benefits of the synchronous option and some of our developed best practices. We also look at comparisons of synchronous online courses with courses in a physical classroom. The use of synchronous online courses for teaching programming classes will be a special emphasis.

Online Course Overview

The majority of courses being offered as “online” courses use the asynchronous format. The normal process is for the student to log into a course management system and follow a progression of assignments on their own. Typically there is no real time interaction with a professor. If they have questions they are usually handled using e-mail.

This, in essence, is the modern day equivalent of the old correspondence course. The primary difference being that instead of sending in assignments via the Post Office, they are submitted via e-mail or directly in the course management system. The old correspondence courses were given little academic credibility other than the knowledge gained and demonstrated on the job by the student after the fact. However, the modern day online course is given the full credibility of the institution issuing the degree, usually with no distinction as to whether the student was ever observed by the faculty.

The online alternative to asynchronous courses is the synchronous online course (SOL). In this format the student logs into a virtual classroom, at a regularly scheduled class time and interacts with the professor and other students. With the distinction that there is no physical presence, this format provides the same real time interaction as a physical classroom experience.

Synchronous Online Courses

The synchronous online course provides actual interaction between the faculty member and the students. This provides for a much better evaluation of performance. It also provides more input to the professor other than just the submission of assignments. There has been much discussion about the legitimacy of such assignments in an asynchronous format given that there is no way to determine who actually did the work that was submitted. This being the biggest reason that the old correspondence courses had little credibility.

While it is only marginally useful to compare SOL courses to asynchronous online courses, the more useful comparison is between SOL courses and physical classroom based courses. Other than the distance aspect the two formats a very much identical.

The SOL course allows attendance from any location where there is a connection to the Internet. There is still a classroom it is just a virtual, or non-physical classroom. As we will discuss, some students may be hundreds of miles away while others may be just down the hall. The class still meets at a specified time. There is still live interaction with the professor. Lecture can be done. Feedback can be received. The class continues as it normally does in a physical classroom.

Another benefit of the virtual classroom is that it frees up physical classroom space. Scheduling classes in a limited number of available classrooms has become a large issue at many institutions. Another space related issue for many is the use of remote campuses with courses being offered at multiple locations in order to more adequately serve a more distributed student population. The need to meet minimum enrollment numbers to allow a course to run has been a real issue in such situations. If the course is offered at three locations and none of them have enough enrollment individually, but grouped together there is adequate enrollment, then the virtual classroom allows the course to be offered.

Scott started teaching SOL courses at Capitol College three years ago as an adjunct using the Adobe Connect platform. Phil began teaching SOL courses during the summer semester in 2014 at Tri-County Technical College using the Zoom platform. The following sections discuss those efforts.

Connect at Capitol College (now Capitol Technology University)

Capitol has offered SOL courses for over ten years. All of their graduate courses are offered only in this format. Many undergraduate courses are offered in this format in addition to traditional physical classroom based courses. They currently use the Connect platform from Adobe.

Connect provides a permanent virtual classroom for every course. This classroom is always live and any student can enter the classroom at any time. The Connect classroom can be entered with a direct URL, but more commonly it is entered through the course management system using a link in the course page. Classroom sessions are all recorded (a Capitol requirement) and links to these recordings are provided on the same page with the classroom link in the course management system.

The primary Connect screen provides an attendance list showing all participants in the room. This can be used for attendance checking, if desired, rather than doing an actual roll call. The primary screen also provides a chat box area for discussion. This facilitates impromptu student interaction without the

delay of hand raising and acknowledgement, which is also available. Whenever someone begins typing in the chat area a message to that effect appears so that the professor can wait for the question before continuing. The student can have a private chat area with the professor or can select the "Everybody" tab so that all participants can see the discussion.

The central portion of the Connect screen provides the ability to load files for display, or use a white board for drawing diagrams. There is also the ability to share the entire desktop so that various application programs can be demonstrated. This capability is especially beneficial for programming courses.
Typical approach for a class session in a programming course is to open the class with a PowerPoint slide presentation of the material. After this, pulling up Visual Studio and writing code, real time. Code is not pre-prepared so that the students can watch the actual development process as it takes place. This is consistently one of the most positive areas of feedback received for these courses.

Zoom at Tri-County Technical College

Zoom is a virtual meeting platform created by former Cisco employees who worked on the telepresence platform at Cisco. The Zoom software system is available via both free and commercial accounts. The only difference between the two variants is that a commercial account can host meetings of indefinite length; free account meetings are limited in duration to 45 minutes.

The core of the Zoom system is the concept of a virtual room, which bears a unique room identification number (RID). Each Zoom account is granted one permanent RID as well as the ability to create any number of 'ad hoc' meeting/rooms, which are created with a randomly generated RID.
Once created, this meeting room can be entered by students and faculty at any time. Upon entry to a virtual space, participants have the option to share audio, video and desktop views with all other participants. The room owner/host has additional capabilities relating to participant management and meeting control.

A normal Zoom class begins much like any traditional class with the roll call. Roll call is done just as you would in a traditional class with a verbal calling of the roll and each student activating their audio feed and responding with an affirmative. At this time, the host may opt to share a video feed with participants as well. Upon completion of the roll call, the traditional delivery mechanisms for classroom instruction begin. Normally, this entails the instructor/room host sharing a computer window/screen with participants and beginning a lecture/discussion. During the presentation, students may interact with the instructor via a variety of methods as determined by the room host:

- activate their microphone and simply speak
- signal the instructor they wish to speak via a virtual raised hand
- using a room chat box to type questions and comments to the instructor
- highlighting/annotating any shared desktop

Audio feeds and shared screen annotations are seen by all room participants, raised hand signals and chat texts are only visible to the instructor. If activated, participant video feeds are also visible to all room participants at all times, allowing full 'face to face' communication at any time.

The room host may activate video recording at any time during the meeting. If active, all shared screens, video feeds, and participant interactions are recorded for later editing and/or distribution.

Best Practices for the conduct of Synchronous Online Courses

Provide a welcome message that is displayed approximately 15 minutes before class.

Since a virtual classroom exists at all times, it is conceivable that students may wander into the wrong virtual space just as they often enter the wrong classroom on campus. By providing a welcome screen, students may quickly determine the class that is about to begin and remove themselves if they are in the wrong area.

Notify Class of your presence and encourage equipment checks.

In order to smoothly facilitate meeting beginnings, notify the students when you are actively participating in the room, and encourage them to test their audio and/or video capabilities before the actual roll call. This will insure that all students are able to fully participate in the classroom experience when it begins.

Provide easily accessed methods to connect/enter the virtual classroom

Meeting participants must know the RID in order to join the meeting. This information can be disseminated via email, text message, URL, or a meeting invitation calendar event. Meetings based on a permanent RID will always use the same URL. Placing this link within an existing classroom management system (CMS) such as Blackboard or Moodle will provide a persistent, readily available means for students to easily enter the correct virtual space.

Record class meetings.

One of the major advantages to a virtual classroom is the ease with which all classroom activity can be recorded. Recorded sessions may be edited via third party software such as Camtasia to clean up any audio/video glitches, or to enable additional content insertion. Longer class sessions may also be edited/split into shorter, content specific segments to facilitate posting and viewing. Final classroom recordings may then be posted via a CMS, on an instructor's web page, or via YouTube. [Note that some care must be given to limiting access to recorded content to avoid any possible FERPA violations.]

Discourage unnecessary use of video sharing.

Since ALL video feeds become part of the course recording, it is recommended that students be instructed to disable their video feed unless instructed otherwise by the professor. This provides a safeguard against inadvertent video content being introduced into the classroom record which may lead to violation of FERPA guidelines when the recording is disseminated. Additionally, unnecessary video (and audio) feeds may become a distraction for other classroom participants. Last, video streaming consumes more bandwidth than any other shared content; students who are connecting to the classroom via a slow internet connection may suffer poor connectivity due to the intense load of numerous video streams.

Maintain virtual office hours.

Just as traditional students may wish to interact with an instructor outside of the classroom in a more personal way during office hours, students participating in virtual classrooms may also desire additional contact. Such contact should be available via the same means as the class itself or all accessibility benefits of this format may be diminished. Instructors should connect to the virtual space when holding office hours to enable a distance education student the same level of access as a traditional student. During this time, provide a welcome message indicating your availability just as you do when indicating what class session is beginning/in process. Virtual office hours do require a little additional room management when the instructor wishes to 'close the door' to meet with a specific student/group.

Pre-load software that will be used during class presentation.

Prior to the start of a virtual class session, instructors should load any application(s) that will be used during the upcoming session. Having these applications open facilitates the moving of an application window to/from student displays. Opening the application in advance will allow the instructor to deal with window sizing, application interaction, and audio/video impact.

If possible have more than one monitor/display

In a virtual classroom, desktop/application sharing replaces the normal whiteboard/projector interface. With proper planning and practice, application sharing can provide many advantages over the projector modality. One limitation of the classroom projector approach is the limitation on instructor staging since the entire instructor desktop is usually projected. In a virtual setting, only specific application windows may be shared, or if an instructor has multiple desktops, one can be shared, and other desktops may be used to prepare content or stage upcoming content. Using one entire monitor for staging content allows for smooth transition from application to application, instead of closing and opening applications as necessary on a single monitor. This becomes especially important when the session is being recorded as the activity on the staging monitor is not captured.

Equip your teaching/production facility with various video options.

Just as the virtual space benefits from an instructor having additional production facilities such as multiple monitors, having additional content input facilities can also be useful. Specifically, having two or more video options can be very useful. A simple webcam is all that is required to provide the 'talking head' of a typical classroom lecture. A second camera in the form of a document camera is often useful to present printed materials, maps, and views of physical objects pertinent to the class topic.

Use electronic Textbooks and other reference materials.

By definition, students participating in an SOL course are not in the same physical space. This can make the sharing of handouts, syllabi and other classroom documents difficult. When possible ALL classroom materials should be distributed via electronic form. Classroom management systems (CMS)

usually provide an effective means for providing course materials. Many publishers provide textbooks in electronic format as well. One such provider is Course Smart, which interacts with multiple textbook publishers to provide electronic content. Having an electronic textbook for the instructor provides an easy mechanism to share content from the text with students for annotation and highlight.

Encourage (require?) students to participate in virtual study sessions/group meetings.

One weakness of the online modality is that of student isolation. In a traditional classroom, students often meet new students and form ad hoc bonds of friendship. Numerous studies have identified student peer influence and interactivity as a significant contributor to student success. Although students MAY easily interact verbally (and even visually) during a virtual class session, when the session terminates, the student is often isolated from his or her peers until the next session.

Creating opportunities for student interaction via the meeting software is an excellent method to imitate the ad hoc bonding that occurs during face to face classroom meetings. Having the students meet one on one or in small groups encourages student to student learning and provides the student with a sense of 'belonging' to a readily identifiable group/cohort. Additionally, these external meetings can be recorded and submitted to the instructor for review and grading of a student's contribution, attitude and effort.

Integrate additional software systems to augment the virtual classroom experience.

Students who self-select a virtual classroom experience are very likely to already be familiar with a variety of social networking and online information sharing platforms. Where possible, use Facebook groups, twitter feeds, and cloud storage mechanisms to support classroom efforts. This allows students to participate in the class experience while using a comfortable, well known access technique. This will encourage student participation and feelings of satisfaction from the course.

Use of cloud storage/sharing techniques will promote student to student content sharing and creation. Twitter is an excellent tool for quick updates and comments. Remind.com allows an instructor to use student cell phone SMS capabilities to securely send updates, reminders, and commentary on class assignments and events.