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Recommended Citation
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Blackboard, Podcasting, and SKYPE, Oh My!
Navigating Digital Tools in Teacher Preparation

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Just as Dorothy found herself in the strange world of OZ where things did not appear or work like they did in Kansas, teacher preparation candidates enrolled in distance learning, and technology-rich course environments often find themselves lost on the information highway and wondering what to make of OS (operating system). Candidates need a roadmap to facilitate acquisition of course content while utilizing a range of technology tools they may or may not be familiar and/or fluent in using. Similarly, university faculty members need expertise and options for implementing alternative course delivery methods. Distance learning is a necessary part of learning in today’s society.

Levels of Elegance

Macfarlane and Smaldino (2000) identified various course delivery models for distance learning and categorized these by level of elegance. Level of elegance is determined by considering whether or not the course is delivered asynchronously or synchronously and sophistication of technology. A low level of elegance would be a correspondence course delivered asynchronously to an individual. A high level of elegance would be achieved if the student participates in a real-time (i.e., synchronous) 2-way audio and 2-way video course with peers. Similarly, a candidate could experience a high level of elegance if he or she participated in an online course via the Internet, whether it was asynchronous or synchronous if the course was developed in an interactive manner.

Just as important is previous experience for instructor and student. It is quite possible that the instructor has never experienced a distance environment as a student. While not a disadvantage as an instructor, it does present a unique set of challenges and certainly can reduce the instructor’s comfort level in designing and teaching a distance course. Plus, course content, course outcomes/goals, and instructor style may be harder to deliver or meet within a distance environment. Complicating course development and implementation is the amount of additional lead-time necessary to develop the course along with available tools and experience using technology. Similarly, the student may have no or limited experience as a student in a distance-learning environment along with limited technology experience. Student learning style and choice to take a distance-learning course also have an impact.
Basic Technology Skills

Both instructors and students need basic technology skills to access and utilize (a) a Learning Management System (LMS), (b) institutional library resources, and (c) technology assistance. Additionally, they need Internet search skills along with the ability to download/upload files, send email with attachments, organize electronic files, and use word processing and presentation programs. Further, an open attitude to move beyond their current skill level can be both helpful and empowering.

Generally, a university selects a Learning Management System (LMS) to support faculty development and delivery of course content and student participation. The university may purchase a license and support from a company who provides the LMS to the university (e.g., Blackboard) or the university may choose an open source option such as Moodle. With the open source option, the university has options to adjust and customize the LMS to meet specific needs, styles, and content of instructors, courses, and students. As an instructor you must learn to work within whatever system the university adopts to develop, implement, and manage the course, while as a student, you must learn to participate in the course. Even though a university-sponsored LMS is provided, some instructors choose independently to develop their own website and either to adopt an open-source approach or maintain a closed learning environment. One advantage to an instructor-developed website is students can maintain access beyond enrollment parameters.

Developing the Course

Two important decisions have an impact on the structure and tools needed to deliver a distance-learning course. First, will all students attend class at the same time, or will students participate in class at will? Even though the class may be asynchronous, there can still be timelines for completing modules, topics, or class sessions. Next, will the student interact only with the instructor or will there be student-to-student interaction as well? An instructor has several approaches to providing instruction and engaging the student in course content. She could focus on one approach or build the course using multiple strategies. The simplest approach is a text-based approach; that is, the student reads textbooks, articles, online materials (e.g., e-texts, e-Journals, website publications), and/or teacher-prepared written materials. This approach is similar to an independent study. An instructor can emulate class lectures and present content in the form of webinars, video teleconferencing, podcasts or annotated slide presentations (i.e., written text in the notes section to accompany/expand what appears on the slide). If demonstrations or visual images are critical to learning content, the instructor can incorporate video, graphic images, and/or schedule a face-to-face session. A face-to face session
would also facilitate an interactive approach to learning as would discussion or a cooperative learning activity. In all cases, both instructor and student need technology skills along with access to technology tools and software/programs.

**Technology for Text**

In a text-based approach the instructor might select textbooks, articles and/or online materials. Additionally, the instructor will usually develop written materials. Some students prefer to interact with hard copies or printed versions of text materials. Other students, especially those with disabilities, prefer or need electronic versions. Thus, having both print and electronic options available is extremely useful. In order to provide text materials, an instructor needs word processing and/or publishing software, the ability to create PDFs and/or e-text, and a means by which to embed hyperlinks or share URLs. Embedded hyperlinks insure students reach selected online materials; however, one must maintain some vigilance to avoid link rot. Personally, I have found using a scanner to create an electronic version of certain printed materials an invaluable resource. I also convert all documents to PDFs to maintain consistency across computers, although some file storage options on personal websites may work better with documents.

Several options exist for students to access electronic text-based materials. In addition to, or in lieu of the computer, students might use a multi-purpose handheld device such as a Smartphone or tablet. An e-Reader is another option. Students also need library privileges and remote access along with Internet access and a printer to produce hard copies. Finally, instructors need similar access, especially so they can preview their materials in a format similar to students. Formative evaluation is a hallmark of quality instruction. Plus, similar access facilitates problem solving when technology glitches occur.

**Technology for Presentations**

Presentation may occur in a live format through the use of webinars, video technology conferencing (VTC), or face-to-face instruction. Webinars are audio-only, but include the option of sharing the computer screen. That is, the student can view the instructor’s computer screen during the webinar. Or, another option is that the instructor and other students can view a selected student’s computer screen. Conducting a webinar does require specific software (e.g., AdobeConnect), a microphone, and a willingness on the part of the instructor to learn to use the software.

VTC adds a video component to the presentation. Depending on the VTC system/software the presentation may be point-to-point or point-to-multiple points and be 2-way audio and video or 2-way audio with 1-way video. Again,
software is required along with a webcam and microphone. SKYPE, however, is a free option and easy to download. Because the signal is transmitted via the Internet, I have experienced delays between video and audio, a pixilated video, and garbled sound. However, for the most part it has been adequate. I have supervised student teachers at a distance, held office hours, and conducted entire class sessions with students attending class by means of SKYPE. In the process I have discovered it’s important to field test the setup ahead of time and have a back-up plan in case the technology fails during the presentation. I have also found it easier if the VTC occurs by means of another computer, especially if I am using my computer as I present to the class.

A hybrid model would include face-to-face instruction. When real-time presentation is not necessary or an option, the instructor can capture a presentation. Options for captured presentations include archived webinars, podcasts, or annotated slides. Podcasts can consist of audio only or audio and video. Video can be real time or digital images. There are a number of ways to create a podcast. You can actually use Microsoft’s PowerPoint, a simple digital recorder for audio or video, recording software (e.g., Audacity), or a video application such as Photo Booth to create a podcast. More sophisticated software is specifically available to create or capture a presentation (e.g., ProfCast, Camtasia Relay, GarageBand). The key component to creating a podcast is a good microphone, especially if you are capturing a live presentation. When I create podcasts, quiet space free from noise and distraction is critical.

Once the presentation is captured and uploaded, the student will need a computer or hand-held device (e.g., mp3 player, tablet) and headphones or speakers to view and listen to the podcast. Software/programs such as iTunes or a media player (e.g., QuickTime, Windows Media Player) are also needed. Today’s students are so attuned to using these tools to communicate with friends and family that their presence in the classroom is not an issue. Plus, a student can review a podcast as often as needed – something that is not an option in a face-to-face class unless the instructor records the class.
Technology for Demonstrations

Depending on course content and pedagogical considerations, students may benefit from demonstrations. If a face-to-face class session or lab is not an option, then the instructor will need to create or find a demonstration that can be viewed by students. Again, a webinar or VTC might work. However, access to a digital camera and/or digital video recorder along with appropriate software (e.g., iMovie, QuickTime) will facilitate the creation of specific demonstration materials. Other options include utilizing video sites such as YouTube or TeacherTube, streaming videos, on demand videos, or CD/DVDs.

Technology for Interaction

The last instructional option, and perhaps the most exciting in today’s society, is an interactive approach. Students often express the need to discuss course content and pedagogically, we know students learn more when actively engaged in learning. Interaction can occur during webinars, VTC, and face-to-face classes. However, a myriad of other tools exist to facilitate instructor-student interaction, instructor-students interaction, and student-student interaction. Instructors can set up discussion boards and require students to respond to questions, read responses, and make comments; hold electronic office hours; create virtual environments (e.g., Second Life); chat, instant message, conference and communicate via telephone and email. Class and group projects can occur in wiki spaces (e.g., GoogleDocs) or other online formats. We can respond to each other by means of text or voice-threads. We can participate in online games or social networking. Earlier in my career I partnered students by phone. Now, I engage with them via SKYPE. Previously, an icebreaker at the beginning of class would occur verbally in real time. A recent class began by having students write about their favorite ice cream in a shared, virtual document.