The Next Generation of Teaching Strategies: Podcasting and Video Productions
By Jamison V. Kovach, David Ding and Sharon Lund O'Neil, University of Houston

Using technology in the classroom or in conjunction with coursework is a great way to engage students in the learning process, and it makes learning fun. Educators at all levels can use technology as part of their instructional and course design. We found it was relatively easy to incorporate technology—namely, podcasting and video productions—into class activities in face-to-face and distance education courses. The feedback from our students regarding these initiatives has been extremely positive.

In this article, we will share details regarding two innovative, technology-rich multi-class projects conducted within the organizational leadership and supervision program at the University of Houston. Through these projects, students strengthened their communication skills and workplace management techniques through a real-world learning experience that used podcasting and video productions. To encourage further use of technology in the classroom, we will also describe the basic equipment needed and steps required to create podcasts and video productions for instructional purposes.

Innovative, technology-rich projects

Our podcasting project focused on revitalizing the town of Desperation—an online 3D environment—to teach visioning, development and quality assessment skills. Students in our leading-change course played the role of city council members and developed a vision for the town. Communications students acted as developers and created the construction plans to carry out the city council's vision. Students in the quality-improvement course played the role of state auditors and analyzed the town to determine how well plans for construction changes were implemented. Students reported project outcomes to the other classes involved in the project through the creation of enhanced podcasts (audio with still images, such as PowerPoint slides) and written documents. At the end of the semester, we concluded the project with a town meeting.

Another project used video productions to build a media library rich in real-world examples of leadership and supervision practices. Production and service-operations students played the role of the production crew. They wrote, cast, directed and recorded three to five-minute videos that demonstrated management practices. Students in the quality-improvement course acted as producers and developed script notes to guide the written aspects of the video

productions. Team leadership students played the role of the screen critics and critiqued the final video productions for instructional effectiveness.

We concluded this project with a red carpet event, which was planned and executed by student teams.

Figure 1 Students enjoying end-of-semester red carpet event

In both of our semester-end events, we reviewed the results of each class's contributions to the overall project. This involved playing the student-produced podcasts or videos and assessing the project from multiple perspectives. Formal assessments conducted as part of these projects showed that students thought podcasting and video productions were a valuable form of communication and were appropriate learning and teaching strategies. Other feedback about the projects was very positive, and the quality of students' work exemplified their creativity and enthusiasm for the project. Comments from students regarding these projects included:

- "This project was a fun and informative experience."

- "I feel this project was a great way to use technology in teaching and greatly improved the retention of learning what was taught."

- "I really enjoyed being able to learn new software and try new techniques."

- "I enjoyed working on the project because I thought it was a very realistic simulation of a real life project."

ASQ Higher Education Brief August 2009

Another project, summarized in a recent article,[1] describes how students created audio and video podcasts to record interviews with experts and document field trips, observations, notes and other information relevant to the course. In addition, the pedagogical benefits of podcasting and video were studied in other recent articles.[2,3]

Podcasting, video production basics

The term podcasting is a combination of "iPod" and "broadcasting." Podcasts are audio or video recordings that can be downloaded from various sources. Like music, podcasts are available in different formats. Standard podcasts consist of an audio-only recording in a format such as an MP3 file. Enhanced podcasts are audio recordings with still visual images added, such as pictures or PowerPoint slides. Enhanced podcasts were created in the student project described earlier. Finally, there are video podcasts, or vodcasts, which are short videos formatted to play on a portable media player.

The University of Houston has developed a substantial knowledge base regarding instructional podcasting, which is available on the internet (see resources listed at the end of this article). Instructional podcasts extend lessons beyond the classroom and provide supplemental explanations and examples. Such podcasts may include expert interviews, pre-recorded lectures, how-to instructions and project presentations. General educational outcomes of using podcasts for instructional purposes include flexibility, portability, repeatability, freedom to multitask and increased interaction (for example, student-to-student and student-to-instructor).[4]

To create a podcast, you will need a computer with the necessary software and a microphone. We recommend using a headset microphone to facilitate recording and play-back—a microphone with a USB connection is the most versatile option. The software you will need depends on the type of podcast you wish to create. Macs come with GarageBand already installed for creating traditional and enhanced podcasts. For audio-only podcasts, you can download Audacity for free (http://audacity.sourceforge.net), which works on PCs and Macs. To create enhanced podcasts, there are several software options. The one we use most often is Camtasia Studio, which integrates well with PowerPoint to easily create recorded presentations. There are also several software options for creating vodcasts, which include iMovie (comes installed with Macs) and Quick Time Pro (works on PCs and Macs).

Once you set up and test your equipment, the steps involved in creating a podcast are

relatively simple (see Figure 2). First, you record your material. You may need to develop a script for what you're going to say in your podcast, especially if you don't want to simply read from your slides. Then, produce your recording in the necessary format (typically an MP3 or MP4 file). Podcasting software generally provides many choices for producing your recordings. Choose a format compatible with the way in which users will access your recordings. In addition, be sure to play back your podcast to check that it sounds as you intended.

Once complete, you can upload your podcast to a website or an aggregator, such as iTunes. Of course, posting podcasts on your course webpage or through your online course management system, such as WebCT or Blackboard, is always an option. Also, iTunes is great for managing and sharing podcasts. Some universities, such as the University of Houston and Stanford University, have iTunesU sites. An iTunesU site is an Apple service that allows educational institutions and others to create a special area within iTunes where users can find and download content specific to a particular university or course.

Figure 2 Steps for creating and disseminating podcasts
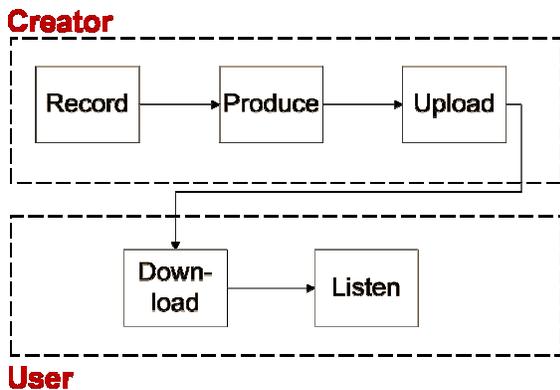
Video productions

Video productions involve assigning roles, creating scripts and storyboards, videotaping, editing and distributing the finished video product (as shown in Figure 3). Standard digital video production requires a digital camcorder (high definition is optional), a directional microphone, several memory cards (or internal memory), a steady tripod and a video light.

Figure 3 Steps for developing and distributing video productions

Create work packages and/or assign roles → Develop scripts and storyboards → Tape Video → Edit Video → Publish Video

One critical component in the early stage of video productions is to break the project into different work packages and assign them to team members. Alternatively, team members can be assigned to different roles depending on the number of people involved in the project. A typical video project may include job titles such as director, producer, researcher, script writer, storyboard artist, set designer, camera operator, sound, film editor and actors. A video production project generally starts with drafting scripts and storyboards to outline the project. Developing scripts and storyboards at the beginning of a video production not only helps group members search for the ideal topic, but it's also an effective tool for communicating aspects of the project inside and outside the production crew.

Once roles are assigned and the scripts and storyboards are finalized, the next step is videotaping the preliminary video. It is important to use the storyboards to create the scenes and videotape every scene in the proper order. At times, ideas will arise during videotaping that will cause storyboards and scripts to be modified. Following videotaping, editing will include reviewing and cutting footage, adding effects such as transitions and music, correcting text and credits, and making final edits.

There are several software packages that can be used to edit videos, such as Final Cut, Cyberlink Powerdirector, Corel VideoStudio and Sony Vegas Movie Studio. After editing is complete, the final video needs to be converted to the appropriate format to fulfill the desired resolution and size requirements. Depending on the target audience and available resources, the video can be published in a high definition format for projection or in a lower definition for streaming over the internet.

The collaborative podcasting and video production initiatives described here demonstrate how collaboration and creativity can significantly expand traditional classroom instruction and learning—even well beyond simulated learning experiences. Because it is often challenging to provide experiences that will help students successfully compete in the work environment, we should view our classroom not as a restrictive environment, but as a platform

for creative endeavors. Completing meaningful projects provides many intrinsic rewards and long-term benefits for students and the instructor. Designing innovative, technology-rich student projects is stimulating and fun for the instructor, too.

We believe the incentive for creating relevant and motivating assignments is best summarized by a comment shared by many of our students: "I've already applied the knowledge I gained from the project to my job. I know I will value this really fun learning experience throughout my life."

Acknowledgements

The multi-class projects described in this article were presented at the University of Houston faculty showcase conference in 2008. In addition, a session, sponsored by ASQ's Education Division, entitled "Podcasting—An Innovative Instructional Technology," was presented at the 2009 World Conference on Quality and Improvement. A recording of this session and sample podcasts are available on the Education Division's website (see resources listed at the end of this article).

References
1. G.R. Armstrong, J.M. Tucker and V.J. Massad, "Achieving Learning Goals with Student-Created Podcasts, Decision Sciences," *Journal of Innovative Education*, Vol. 7, No. 1, 2009, pp. 149-154.
2. D.K. Griffin, D. Mitchell and S.J. Thompson, "Podcasting by Synchronizing PowerPoint and Voice: What are the Pedagogical Benefits?" *Computers and Education*, Vol. 53, No. 3, 2009, pp. 532-539.
3. R. McHaney, "Distance Learning Video Grid: Online Teacher Exchange, Decision Sciences *Journal of Innovative Education*, Vol. 7, No. 2, 2009, pp. 457-462.
4. Encyclopedia of Educational Technology, "Podcasting in Education," http://coe.sdsu.edu/eet/articles/podcasting/index.htm, 2009.

Learn more about the resources mentioned in this article:
University of Houston podcasting resources:

- www.class.uh.edu/classidt/tutorials_help/profs/software/podcasting.

- www.bauer.uh.edu/technology/ttg/mobile-learning.asp.

- http://itunes.uh.edu/.

YouTube: "How to create a podcast" using Audacity: www.youtube.com/watch?v=-hrBbczS9I0 (case sensitive).

Podcasting software resources:

- Audacity: http://audacity.sourceforge.net

- Camtasia Studio: www.techsmith.com/camtasia.asp (Note: TechSmith is generous to academic institutions and provides discounts for students to buy software to use in conjunction with their course assignments)

- iTunesU: www.apple.com/education/guidedtours/itunesu.html (Introduction)

- Stanford University: http://itunes.stanford.edu

- ASQ's Education Division website: www.asq.org/divisions-forums/edu/index.html (A podcasting "how to" and example podcasts are listed under "Learning Opportunities")

Video resources:

- California Arts Project: http://csmp.ucop.edu/tcap/nbpts/tutorials/video.html

- Television production: www.cybercollege.com/tvp_ind.htm

- How video editing works: http://computer.howstuffworks.com/video-editing.htm

- iMovie: www.apple.com/ilife/imovie

Some of the winning video projects from our students over the past two semesters:

- Reengineering: www.youtube.com/watch?v=CyeJvoxVBEg

- The Ice Cream Shop's Inventory Control: http://paul-waldrop.com/UHstuff/final-videos/14/14.htm

- West Golf Container and Logistics: http://paul-waldrop.com/UHstuff/final-videos/2/2.htm

Jamison Kovach is an assistant professor in the Department of Information and Logistics Technology at the University of Houston. She received her doctorate in industrial engineering from Clemson University in Clemson, SC, and is certified in Six Sigma Black Belt training

Sharon Lund O'Neil is a professor at the University of Houston. She earned her doctorate at the University of Illinois and has authored more than 100 publications, made hundreds of presentations and received grant awards totaling more than $2.6 million.

Xin David Ding is an assistant professor in the Department of Information and Logistics Technology at the University of Houston and teaches classes in organizational leadership and operations management. He received his doctorate in Operations Management from the University of Utah.

ASQ Higher Education Brief August 2009

www.asq.org