Reasons to Rethink the Use of Audio and Video Lectures in Online Courses

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Submitted to the 4th ICTL**: June 30, 2013 | **Refereed and accepted by the 4th ICTL**: July 15, 2013
Submitted to HLRC: October 9, 2013 | **HLRC Editorial review**: October 30, 2013
Presented at the 4th ICTL: Nov. 13-15, 2013 | **Accepted by HLRC**: Dec. 3, 2013 | **Published**: Dec. 13, 2013

Abstract: Recent technological developments allow any instructor to create audio and video lectures for the use in online classes. However, it is questionable if it is worth the time and effort that faculty put into preparing those lectures. This paper presents thirteen factors that should be considered before preparing and using audio and video lectures in online classes. In addition, recommendations for when and how to use lectures in online classes are presented.

Keywords: online, effective, teaching, course design

Introduction and Background Information

Recently Hawaii Pacific University [HPU] changed its learning management systems (LMS). This transition created opportunities and challenges – and some interesting observations. During the switch, full-time and adjunct faculty received assistance to transfer their courses to the new LMS. The LMS change also provided an opportunity to allow faculty to update and improve their online courses; at times, this involved completely starting over. Throughout the transition process, many of the faculty expressed a strong desire to have audio and video lectures in their online course. They were often distressed when advised that a traditional lecture is not a requirement for an online course. For many faculty members, the lecture has been the foundation of their teaching for years.

Lecturing as a teaching method goes back centuries, when books were not readily available. When books became more available, lectures still remained as a main teaching method. Obviously lecturing has strengths as it has survived over the years, but it also has weaknesses. Among the pros of lecturing are its ability to reach a wide audience, the ability to share the instructor's knowledge and enthusiasm of the subject, and the ability to cover ancillary to the course textbook. The cons of this teaching method are passive learning; extended sitting and listening, which is troublesome with dull lecturers; and questionable suitability for higher levels of learning, such as analysis and critical thinking.

This article presents reasons why instructors and course designers should be cautious about automatically placing self-made audio/video lectures in their online courses, rather than focusing on interaction and communication. For the purposes of this paper, online courses are those offered completely over the Internet and which do not require a physical presence of the

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** Fourth International Conference on Teaching and Learning (ICTL), Bangkokm Thailand, November 13-15, 2013

Suggested citation: Stetz, T. A., & Bauman, A. A. (2013). Reasons to rethink the use of audio and video lectures in online courses. *Higher Learning Research Communications, 3*(4), 49-58. http://dx.doi.org/10.18870/hlrc.v3i4.168

instructor and students in the same classroom. These courses are designed and developed by instructors within a learning management system (such as Blackboard).

The authors of this paper are not completely against online audio/video content. Instead they offer factors, commonly overlooked by faculty members, to ponder before using such content. The following thirteen factors presented are recommendations for when and how to include audio/video content in online classes, based on personal experiences and conceived while assisting in a major LMS transition.

1. Students Do Not Read Enough

According to Taboada and Buehl (2012), "[r]eading is fundamental to individuals' participation in modern society". Snow argued that "[l]iteracy skills are not a luxury but an economic necessity" (as cited in Taboada & Buehl, 2012). Thus, it is unfortunate that our faculty often lament that students do not read enough. This claim is bolstered by the recent popular book *Academically Adrift*, whose authors stated that a third of the students did not take any courses with more than 40 pages of reading per week (Arum & Roksa, 2011, p. 71). Coultier and Smith (2012) noted that for example, in medical education, "more than 70% of students do not comply with required readings" and this is despite the evidence that reading enhances student understanding of course materials (p.109). Furthermore, students often rely too heavily on supplemental material, such as prerecorded lectures at the expense of scholarly reading (Deal, 2007, p.7). In this context, instructors must not only tell students what to read, but they must also assess students on the reading material. Students will quickly learn if reading is required and adjust their behavior appropriately.

2. TV Show or a Classroom

Over reliance on audio and video lectures can turn a class into a TV show that students watch. There is nothing wrong with TV. In fact, many TV channels are both educational and entertaining: TLC, Discovery, History Chanel, NatGeo, Netflix documentaries, etc. However, a college level course is different. Students should actively read and then do something with the information.

An additional consideration is that TV shows are developed by teams of highly trained and experienced professionals. It is highly unlikely that many professors have the required production skills to develop a professional quality video lecture. Granted lecturing is a learned skill that many professors have mastered. However, lecturing and making a video of a lecture are two different things. A grainy low quality video cannot completely capture the gestures, tones, and the speaker's personality. The result is a very different experience from an in-person lecture.

It would seem that purely audio lectures might be easier to develop than video, but this is not the case. Without visual information a lot of richness of in-class lectures is lost. Essentially, the instructor becomes a radio broadcaster. There is a reason why radio broadcasters go to school, intern, and spend years developing and crafting their delivery skills. With purely audio lectures, Brabazon (2006) stated, "[e]motion and energy must be injected into the voice, to compensate for the lack of body language and props."

One might think that there has been widespread proliferation of poorly produced video content on the internet. Many of these videos receive millions of views. Although users do not

necessarily expect high quality production when searching and viewing online video content on the Internet, students' attitude and expectations might be different. Since students are paying to take an online class, they might expect a higher level of quality and professionalism when it comes to the course materials. Poorly produced videos reflect poorly on the university as a whole, not just the particular instructor or class.

3. Lack of Student Interaction

When lecturing in-class, the instructor is directly in front of the students. He or she can "read" students' facial expressions and judge the amount of understanding and engagement and adapt as necessary. The lecturer can adjust on the fly, clarify, use additional examples to get the point across, take questions, etc. This is impossible with prerecorded lectures that instructors usually upload to their online classes; it is truly one-way communication. Instead of the best of both the online and in-class worlds, it could be easily argued that the online instructor is getting the worst of both. Furthermore, very few instructors are capable of making their own interactive videos that follow a non-linear structure and require students' involvement.

Consider the study conducted by Zhang, Zhou, Briggs, and Nunamaker (2006) that compared four learning environments for students: online classroom with interactive video, online classroom with non-interactive video, online classroom without a video, and a traditional classroom environment. The purpose of the research was to determine if *interactive video improves learning effectiveness*, which was measured by students' test scores and perceived learner satisfaction. The results of the study showed that there was no difference in test scores and level of satisfaction between students in an online setting with a non-interactive video and students in an online section without interactive video. The only group that had better scores was the non-linear interactive video. To quote Zhang et al. (2006), "this implies that simply integrating instructional video into e-learning environments may not be sufficient to improve the e-learning effectiveness."

4. Teaching is Lecturing Mentality

Old school mentality is that teaching is lecturing. New pedagogical approaches, such as flipped classrooms, focus on student interaction. Pre-recorded video and audio lectures are playing right into this outdated mindset. The well-developed online course changes the professor from a sage on the stage to a facilitator of learning. The instructor motivates and guides students in the right direction, but the student must do the hard work of learning and thinking. In addition, it appears that there is no consensus on the effect of viewing online lectures on students' learning. For example, Wieling and Hofman (2010) found a positive correlation between viewing online lectures and students' grade in class. However, Chiu, Lee and Yang (2006) did not find a positive effect of viewed online lectures on student performance. Finally, Ross and Bell (2007) found a negative effect of viewed online lectures on student performance.

Many online instructors are familiar with the 2011-2013 Quality Matters Rubric Standards used to evaluate the course design. Criteria 6.2 of that rubric states that "[c]ourse tools and media support student engagement and guide the student to become an active learner." "One-way" lectures do not necessarily support this standard. In fact, prerecorded lectures encourage the student to be a passive spectator rather than an active player in the learning process. Furthermore, Folley (2010) stated that, as students progress through academic levels, the

perceived importance of lectures declines as students gradually become independent learners (p. 95). Thus, alternative teaching methods that are more interactive increase in importance.

5. Audio = Text

There are two types of audio lectures that are usually used in an online class: voice over the PowerPoint presentation or a podcast delivered via the iTunes. The first type of lecture is created when an instructor takes a PowerPoint presentation and records his/her lecture that goes along. A podcast is a term that was created from a merge of the Apple's "iPod" and "broadcasting". Podcasts are defined as "digital media files distributed through the Internet and downloaded through syndication for playback on a computer or MP3 player" (O'Bannon, Lubke, Beard, & Britt, 2011, p. 1885). With the burst of podcast technology in 2005-2007, some faculty rushed into creating lectures for students who had iPods. However, the findings of Arduser et al. (2011) suggested that adding audio to an online class does not automatically improve students' experience and other activities, such as instructor's feedback, should be included. Besides, anything the professor is going to say in the audio lecture can be presented in text format. Furthermore, consider a quote attributed to an anonymous source that was used by Exley and Dennick (2009, p. 1), "[l]ecturing is the transference of the notes of the lecturer to the notes of the student without passing through the brains of either." Simply providing the busy student the lecturer's notes seems to be more efficient.

Curiously, the authors of this paper noticed several English as a second language students asking their instructor if there were transcriptions of prerecorded lectures. The students expressed that they were better able to grasp the content while reading the lecture than while watching and listening to the video lectures.

6. Accessibility

Recently, accessibility issues surrounding online courses have become more prominent. Thomas Perez, Assistant Attorney General, U.S. Department of Justice, and Russlynn Ali, Assistant Secretary for Civil Rights, U.S. Department of Education reminded all through a "Dear Colleague" letter:

> Requiring use of an emerging technology in a classroom environment when the technology is inaccessible to an entire population of individuals with disabilities - individuals with visual disabilities - is discrimination prohibited by the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973 (Section 504) unless those individuals are provided accommodations or modifications that permit them to receive all the educational benefits provided by the technology in an equally effective and equally integrated manner. (U.S. Department of Education, Office for Civil Rights, 2010)

While this quote states visual disabilities, the implication for hearing disabilities is clear. If you make your own audio or video lecture, you need to create a text file or ensure it is captioned with the same information for those who require accommodations.

The National Post-Secondary Student Aid Study 2007-08 (National Center for Education Statistics, 2010) showed that the percentage of undergraduates who reported some type of

disability is 10.8%. Furthermore, among those who reported a disability, 6% had a hearing problem and 2.7% were visually impaired. More interesting is the finding that 21.2% of the undergraduate students who took an online class reported a disability.

The professional situation can be somewhat more complicated when it comes to hearing disabilities if working within a military campus program for a university. While topics such as Post Traumatic Stress Disorder [PTSD] and Mild Traumatic Brain Injury have received attention from the educational community, hearing loss and tinnitus (ringing in the ears) are quiet epidemics among the military population. Consider that Humes, Joellenbeck, and Durch (2006) reported that auditory system disabilities are the third most common disability within the U.S. Department of Veterans Affairs (p.16). Furthermore, hearing impairments were the top two most prevalent service-connected disabilities for veterans receiving compensation at the end of 2009 with 639,029 for tinnitus and 570,966 for hearing loss (Department of Veterans Affairs, 2009, p.16). PTSD was fourth on the list with 386,882 (2009). Also, veterans who served in the U.S. military between September 2001 and March 2010 are four times more likely than nonveterans to have severe hearing impairment (Center for Disease Control and Prevention, 2011).

These numbers cannot be ignored by online instructors. The bottom line is that students with disabilities take online courses and reasonable accommodations must be made. However, rather than making accommodations after the fact to ensure minimal compliance, instructors should have a universal design mindset and build such accessibility features into the course.

7. Learning Styles

Some instructors might suggest that online courses should provide the students with various media to allow optimal meshing of the presentation format with the individual students' learning style. This logic surely supports the use of text, audio, and video based instructional materials. Unfortunately, the best review to date of learning styles, by Pasher, McDaniel, Rohrer, and Bjork (2008) failed to find any support for such a need. Pasher et al. (2008) concluded that when asked, people will express a preference for how information is presented to them. Their review, however, failed to find any support that different instructional methods lead to different outcomes for those with different learning styles. They concluded that the use of learning styles in educational settings is an "unwise and wasteful use of limited resources" (p.117). Educators instead should focus on evidence-based instructional methods that enhance everyone's learning.

8. Student Efficiency

Bailey and Bailey (1999) found that, in the United States, the average adult English reading speed is between 250 to 300 words per minute (wpm). However, they also found that reading speed can be increased greatly. For example, when using rapid serial visual presentation (RSVP) people can easily read 400 wpm with just a little practice and some individuals with less than one hour of practice can easily read 600 to 800 wpm (Bailey & Bailey, 1999). Contrast this with speaking and listening. Williams (1998) reviewed over 100 articles and developed guidelines for using multimedia in instruction. He concluded that with simple content the speaking speed should be about 160 wpm and the speed should be slower when complex or new ideas are presented. Coincidentally, narrated books are typically read at about 150 to 160 wpm. From these

numbers is it easy to see that reading a lecture is simply more time efficient. With today's busy students, this is an important consideration.

9. Redundancy

Other professionals have already developed great course content. There is no need to recreate it all over again. Simply link to it. To some, however, this might be troubling philosophically as one might question if someone is teaching if the professor only refer students to other people. However, it is more important to guide students through the information. It does not necessarily matter if the professor is the face in the video. There are many authorities on a subject and faculty are one — not the only one. Providing a link to somebody else's professionally created lectures can be like having a world class guest speaker. It does not lessen the teacher's role. In addition, using videos of expert outside speakers lessens the instructor's burden and frees him or her up to focus on other aspects of course design and facilitating student learning.

TED (Technology, Entertainment, and Design) for example offers a series of presentations by the world's most innovative thinkers in a variety of the research fields. The TED Prize competition of selecting three individuals who discuss their wishes on how to change the world for the better could serve as an inspiration for the life-long learning experience for students. These online lectures are available for free on the TED web site (www.ted.com) or You Tube and iTunes. There are also free applications for iPhone, iPad, and Android that could be incorporated into an online class. For example, Martin Seligman was one of the founding fathers of positive psychology and his TED Talk on positive psychology will clarify this new science field.

Khan Academy (www.khanacademy.org) is another source that offers over 3,000 video clips that cover math, science, finance, and economics, as well as humanities. Incorporating those professionally made clips will provide additional course materials, the use of media, and could help to start a discussion.

10. Instructor Efficiency

An instructor's time is valuable and creating supplemental lectures is time consuming. Interestingly, during the LMS transition work some of the most ardent supporters of lectures in their online course were the least technologically savvy instructors. While software is increasingly available and simple, it still takes time to learn. If the instructor is not savvy, he or she should look for other approaches to communicate their knowledge to students. Faculty should only employ technology that they are capable of using independently. If faculty members insist on using tools beyond their capabilities, then schools will need to continually expand support services to assist instructors who cannot effectively use today's not to mention tomorrow's technology.

11. Effectiveness and Usefulness

Is the use of faculty created audio and/or video lectures effective for student learning? Some research suggested that podcasts are unpopular with students (Cann, 2007). For example, St. Clair (2009) queried two of his online economics classes and found that 79% in one class and 84% in the other class responded that audio and/or video lectures should not be used. In another study Guertin, Bodek, Zappe, and Kim (2007) found that, midway through an online class, just

over half of the students were aware of the ability to download MP3 podcasts and that access logs showed very little student use. Finally, Cuthrell and Lyon (2007) examined six instructional methods and found that audio lectures were students' least preferred method of instruction.

Research has also demonstrated that solely text-based courses can be effective learning environments (Ice, Curtis, Phillips, & Wells, 2007). Consider DeVaney (2009), who compared statistics courses with and without access to online video tutorials. His results showed no significant difference in student performance. Moskal and Martin (2013) found that 30% of the students in their study rarely or never watched video lectures prepared with the Lecture Capture software and that those lectures did not improve their class performance. Forty one percent of students did not think that those lectures enhanced their interest compared to a similar course but in face-to-face environment. Rather than spending time preparing video lectures and then editing and updating them, Tiernan (2013) suggested that instructors use a depository of short video clips from other resources for discussion of a specific issue or a case.

12. Compatibility Issues

The number of software compatibility issues has definitely declined over the years. However, occasional problems still arise. This is frustrating for both the student and the instructor. Neither generally has time to troubleshoot and fix the problems. The result is often a ticket put into the university's helpdesk. Resolving such issues can take substantial time and sometimes they are never fixed. Time urgency is compound by the fact that many online classes are condensed (into 5, 6, 8, and 10 weeks) as opposed to the traditional 15-week in-class semester. One or two days without access to important course materials can have serious consequences. This suggests that, until all issues are resolved, online classes should use the simplest technology with the fewest potential technological issues.

Information Technology departments often try to mandate the use of specific software and hardware to prevent such issues. However, it is one thing to establish a university-wide policy and quite another to actually ensure that it is followed. The heavy use of adjunct faculty, each with their own hardware and software complicates enforcement even further.

13. Sales Pitch

Sales representatives of the multimedia companies and publishers sometimes over promise and under deliver. Just because a video or other multimedia tool is available, it does not mean that the instructor should use it. The tool should only be used when there is a clear pedagogical reason for it and when the instructor has the technological ability to successfully use the tool.

Recommendations

Although this article focused on why instructors should not create their own video and/or audio lectures for online courses, there are some effective uses or audio and video files in online education. However, before any audio and video content is used, the instructor should ensure to address all accessibility issues. For example, a video is a good way of introducing the professor to the class, creating an instructor presence. Anecdotally, some students complain about how

difficult it is to visualize an instructor in the “faceless” online environment; creating a short video clip would help the instructor to convey his/her own personality to students.

Another good opportunity to use audio and video content is for demonstration purposes when there is a need to show how to do something (find an article in the library database, measure something, or use an online simulation, for example). Creating video or audio step-by-step instructions will allow students to replay guidelines as many times as required to learn the proper procedure and focus more on the analysis of the results rather than the process. For example, one of the “Marketing for Managers” classes at HPU uses an online price calculator that shows the effects of the product prices and advertising expenses on a company’s profits and market share. Rather than having students spend their time figuring out how the online calculator works and where to enter the data, the instructor created a Power Point presentation with narration that explains the use of the calculator. The purpose of the assignment was the analysis of four different scenarios and a suggestion for the fifth pricing option. The purpose was not how to learn to use the calculator. Thus, the instructor’s lecture facilitated the students’ successful completion of the assignment, allowing them to focus on its real purpose.

A recent interesting application of audio is for student feedback. When Ice et al. (2007) replaced text-based feedback with asynchronous audio feedback, they found that the audio feedback was associated with increased perception that the instructor cared about the student. In addition, students indicated greater satisfaction with the audio feedback and believed that the audio feedback was more effective. Most importantly the audio feedback was associated with a perception of an enhanced learning community. Another study found that asynchronous audio communication improved perceptions of instructor presence, student engagement, learning of course material, and instructor-student interaction (Oomen-Early, Bold, Wiginton, Gallien, & Anderson, 2008).

Any supplement audio or video content, however should be kept to a reasonable length. Salmon and Edirisingha (2008) strongly recommended producing podcasts less than ten minutes in length. They base this recommendation on studies that showed an inverse relationship between the length of the podcast and the likelihood that students would listen to it. Another reason for short lectures is the number of students with Attention Deficit Disorder. The National Post-Secondary Student Aid Study 2007-08 showed that, of the undergraduates who reported some type of disability, 19.2% reported the disability as attention deficit disorder (National Center for Education Statistics, 2010).

Good instructors are always looking for ways to teach students more effectively. Instructors should do all they can to facilitate student learning, but in the end it all boils down to the student doing the hard work of learning. Online audio and video lectures are teaching tools that are useful only if they are used appropriately. Before an instructor simply deploys a lecture into an online class, both the potential benefits and drawbacks of offering video and/or audio lectures should be analyzed, course and program objectives should be aligned, and student capabilities and technological complications considered.

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