

**YouTube Anchors and Enders:
The Use of Shared Online Video Content as a Macrocontext for Learning**

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The emergence of the Web 2.0 has brought a wealth of new resources and materials for teaching and learning (Alexander, 2006; Downes, 2005; The Horizon Report, 2008; Time Magazine, 2006/2007). One day you hear about a new online news service, the next day there are pronouncements about the scanning of more than a million books (Benson, 2005), and the day after that there is a new document or video repository (e.g., Scribd.com, SciVee, YouTube, et.). Colleagues down the hall or in another university will record podcasts of their classes and make them available for you and your class (Deal, 2007). Others create repositories and summary lists of those podcasts. When attending conferences and professional development forums you hear about innovations of instructors at other universities and institutes.

Lately, one craze in higher education is related to the use of open educational resources (OER) (Geser, 2007; Johnstone, 2005) which typically offer freely accessible contents for anyone with an Internet connection. There are free and open online courses from MIT (Huijser, Bedford, & Bull, 2008; Lee, Lin, & Bonk, 2007) and dozens of other universities around the world. In addition, there are open access portals such as MERLOT and Connexions as well as and shared online video of class lectures, invited speakers, and other content from many higher education institutions and professional organizations. A second trend is that the content available for learning is shifting from that which was formally authored by an organization or institution to that designed by learners or trainees. This is a participatory learning age (Brown & Adler, 2008) where "YouContent" (Masie, 2008, p. 12), or content that is personalized and perhaps created by the learner (Lenhart & Madden, 2005), is becoming more accepted and expected. As highlighted by a special issue of Time Magazine wherein "You" were named the "Man of the Year," Web 2.0 technologies offer increasing power to the learner or user (Time Magazine 2006/2007).

Inter-Institutional Collaboration

As such participatory and collaborative technologies become increasingly common, so, too, are calls for collaboration with them across classes, universities, countries, and regions of the world. When you teach in instructional technology, experimentations with collaborative technologies are simply expected. I have spent the past two years trying out an assortment of new ideas and approaches with emerging technologies and associated pedagogy with instructors from other universities and countries.

For instance, two years ago, Dr. Mimi Lee from the University of Houston and I discussed various ways we might foster rich and engaging interaction and collaboration of ideas across our classes to collaborate. As we talked, various emerging technology ideas filled the air. Might we use videoconferencing to start or end our courses? Sure! With free Internet-based videoconferencing, that was a relatively seamless way to collaborate. Might we try to have our students matched up for feedback on online papers and book chapters and turn them into a wikibook? Yes, that would be possible as well, though many more steps would be involved.

Wikibooks. We have coordinated online paper exchanges across our classes, critical friend activities on critique papers and final assignments, videoconferencing introductions, discussions, presentations, and celebrations, and even jointly created wikibooks. During that semester, we

each taught courses on learning and instructional design theories and decided to have our students create wikibooks related to the practice of learning theories (The POLT). At the same time, I engaged in a similar wikibook project with instructors from universities in Taiwan, China, Malaysia, and the United States.

As my colleagues and I soon discovered (Bonk, Lee, Kim, & Lin, 2008), the coordination of these wikibook efforts was not easy. Factors that needed to be considered included those related to the scheduling of the posts and interactions, feedback, grading, reward structures, and coordinating book completion. Still other factors related to mechanisms to create a sense of community within a bounded course, fostering acceptance of edits from alternative sources, following wikibook procedures and practices, and overcoming the digital divide. In these wikibook projects, students constructed meaning with students they normally would never meet physically. In effect, Wikibooks are a participatory form of learning technology wherein students reflect on their assumptions and biases, understand diverse points of view, and create new knowledge for others to read, reflect on, and tinker with.

Shared Online Video. While Wikibooks activities have been the most challenging and perhaps exciting technologies we have embarked on, in the fall of 2007, Dr. Lee and I found a simple way to embed technology in our classes while empowering and motivating students—this approach involved shared online video presentations of course concepts. Prior to the start of the fall semester, Dr. Lee and I discussed how to motivate our students in weekly lectures and discussions. One activity we incorporated into our classes was the use of a cool resource provider. Students signed up to be a cool resource provider for one week of the semester. They could have been a cool resource provider alone or with a partner. We asked the “Cool Resource Provider” to “explore the Web resources for the course, for the week, and beyond the course and present them to the class.” Such work might include online psychology tests, simulations, animations, models, videos, or audio clips, etc. as well as paper-based information. A corresponding handout was helpful but not required. The presentation took from a mere 4-5 minutes to perhaps an hour or more followed by question and answers from the class and explorations in a computer lab or at home after class. The cool resource provider(s) might also be asked to help moderate discussion for that week by introducing and briefly summarizing some of the ideas from the chapter as well as a few starter questions and controversial issues.

The majority of what students discovered and presented was online resources and ideas related to their content. Some students decided to create PowerPoint presentations, others moved the class to a computer lab for guided Web safaris of resources that they had found, and still others showed specific Web sites and online videos after which they fostered interactive small and whole group class discussions and reflections. It was not the particular format of their presentation that was important but the fact that students were empowered to be the instructors of the class. By the end of the semester, it was clear from these presentations that there are a plethora of Web portals and online resources for learning theory and instructional design.

Dr. Lee and I used the same books, assignments, agenda, and course activities. As part of these efforts, we shared with each other videos that related to each week of the course; such as behavioral theory, motivation, cognitive information processing, sociocultural theory, and instructional design. Where did we go for such videos? In the past, such courses relied on

personal movie libraries or the audio-visual department to check out videos, films, etc. In the twenty-first century times have definitely changed. Now any instructor can search YouTube, Google, or TeacherTube videos (see Appendix A) as well as other resources for current videos that might help students understand course concepts.

Using YouTube

YouTube videos were not available just a couple of years ago yet they are now pervasive in higher education. In a recent survey research project of over 1,000 participants, I have found that short videos of 1-4 minutes are ideal. Not surprisingly, those that are humorous, informative, current, interesting, and engaging are preferred by learners. While most people do not create or comment on YouTube videos, the majority of students have watched and shared them. Such viewing tends to take place at night; typically, between 6 pm and midnight. Clearly, YouTube technology is something in which students in higher education settings in the United States are highly familiar. It is a tool of the culture. And it is one that instructors from K-12 to higher education to corporate training need to begin experimenting with in their classes.

There are more educational videos available online than we first imagined. For the week on behaviorism, my students found documentaries on B. F. Skinner's life (see Appendix B). In addition, there was also one on operant conditioning wherein a rat performs a series of tasks to obtain a reward. While such information can personalize learning and make ideas come to life for students, humorous videos related to behavioral concepts are also powerful. For instance, in the popular sitcom, *The Office*, there is a YouTube video wherein Jim gives Dwight a mint every time a computer reboots and eventually Dwight holds out his hand for a mint when he hears the sound. Behaviorism is a discipline with many complex terms and principles which often confuse and overwhelm students (e.g., negative reinforcement, unconditioned stimulus, satiation, contingency contracting, etc.). Timely use of online video content related to any of these concepts can help students grasp more of the concepts and arouse interest in learning other aspects of the theory or framework.

But we did not stop with behaviorism. In the following week on cognitive theory, students discovered and shared YouTube videos on maximizing memory, artificial intelligence, and robotics. Here too we found videos created for the general public—everyone wants to learn ways to improve their memory--that again were highly appropriate for our classes. For instance, there is also a series of quite fascinating videos on Daniel Tammet who is a savant from the United Kingdom with rare mathematical and language abilities which both Dr. Lee and I used in our respective classes. Daniel had a series of seizures at age 4 which rewired his brain so that he can see, experience, and remember things that most people would believe impossible such as remembering the mathematical expression known as pi to more than 22,500 digits. Our students were amazed that Daniel can also calculate the day of the week in which someone was born. Reading about such feats is not the same as witnessing it in a video. By selecting key videoclips about Daniel's "savantism" from this British documentary, our students became highly interested in cognitive theory and the limits of human information processing. When Daniel learns one of the world's most difficult languages, Icelandic, in one week and converses with others on live television in this language, it is quite stunning. More importantly, this sets the stage for discussions about size of working memory, the limits of long term memory, and how to improve personal cognitive abilities and daily study skills.

As indicated, online videos such as YouTube videos can augment or illuminate the weekly assigned readings. These videos can anchor instruction at the beginning of class as well as help end the class meeting. As we and our students soon found out, there are hundreds and perhaps thousands of educational videos available for free for any class. In one of my classes in the fall of 2007 on the Web 2.0 and Participatory Learning, I posted a set of online videos from George Siemens at the University of Winnipeg on a new theory called “connectivism” (Siemens, 2006) to the course management system and informed the class that they were there. During class the following week, I showed each video one-by-one and then brainstormed questions or issues which were confusing from the videos. Questions were sent the following day to Dr. Siemens and he replied to the class via email. His responses were also posted the course management system we were using and then discussed.

Given such possibilities, every instructor in higher education should be thinking about incorporating short online videos at least a couple of times per course. They are free, they are available in many formats and from many sources, and they are at your fingertips. Gone are all the silly forms from an AV department as well as the associated wait time. In addition, an instructor can feel less guilty not showing the entire video. Since there is no return policy, she can always show it again later on in the semester, while students who miss the class where it was shown can access it on their own. The use of video in instruction is now on demand, highly flexible, AND can anchor most any lecture or course activity. Instructors might still lecture, rely on textbooks, hold discussions, and pass out summary handouts, but the videos spring learning to life!

Linked to Psychological and Instructional Theory

Of course, many educational researchers will say that they have heard this story before. In fact, much of what has occurred recently regarding the use of technology in education links to existing educational research. Fortunately, much of it has some freshness that is worth writing about. Back in the late 1980s, John Bransford and the Cognition and Technology Group at Vanderbilt (CTGV) (1990, 1991) were researching the use of video as a way to anchor instruction. In many of their projects, they would anchor learning in a common event such as a videoclip or movie. Short movie snippets from “Raiders of the Lost Arc” and later from the “Jasper Woodbury” series (which they produced) were used to teach complex science and math concepts in a meaningful and interactive way. From their perspective, these rich online videos situate learning in a story or learning context. When that happens, knowledge is less inert. The connections that students make within and among concepts and principles can be revisited in later sessions or units of a course. In effect, the videos provided a “macrocontext” (CTGV, 1990, p. 3) or commonly viewed experience for later learning and reflection. According to the CTGV, a macrocontext provides a learning space that can be replayed or revisited and discussed from many perspectives and over an extended period of time. Online shared video content such as that found in YouTube has the potential to anchored instruction in such rich learning contexts.

Well before the work from Vanderbilt, educational psychologists such as David Ausubel (1978) argued that knowledge was hierarchically organized. As a result, educators need to find ways for new learning concepts and ideas to be subsumed under or anchored within prior learning experiences. Ausubel suggested that new information is going to be meaningful to the extent that

it is anchored (i.e., attached or related) to what learners already know and understand. YouTube videos can help in that regard. A key part of this effort is finding ways to link prior learning experiences to new concepts and ideas. The advance organizer, here in the form of shared online video content, provides the glue or connections among the learning content that is vital for both the learning of basic facts as well as higher-order thinking skills. Advance organizers come prior to instruction to help learners organize and draw relationships among the concepts being learned. In effect, they guide learner attention to key elements or aspects of that learning. Effective advance organizers can be used as an initial priming of one's rich knowledge stores as well as scaffolding new knowledge.

In addition to the links to anchored instruction and advance organizers, the use of shared online video content is an example of dual coding theory (Paivio, 1986, 1991) in action. In effect, when a course combines verbal lectures or course readings with a few short YouTube or CNN videos, there is immense learning power. The class comes to life and ideas begin to resonate with students. And since the videos are short, instructors do not have to give up much time. Short 3 or 4 minute YouTube videos help an instructor make a key point without having to sacrifice significant time. The learning payoff is potentially immense as the learner can recall the information through both verbal and visual channels.

It is clear that the use of YouTube videos in instruction is linked to educational and psychological research conducted during the past few decades. For of all, they provide a context for learning (Brown, Collins, & Duguid, 1989). Second, they extend learning beyond text to visual or episodic memory, thereby fostering student dual coding of information (Paivio, 1986) and increase learner retention of information (Fox, 2003). Third, they provide a common experience for learners to discuss and reflect on concepts and ideas as in anchored instruction (The Cognition and Technology Group at Vanderbilt, 1990, 1991). Fourth, they can also provide an advance organizer for later class lectures, discussions, and small group activities (Ausubel, 1978). Finally, they can be created, watched, shared, or commented on; hence, they link to the emerging culture of participatory learning (Brown, 2006; Brown & Adler, 2008; Lenhart & Madden, 2005). Across these five theoretical linkages related to using shared online video in instruction is the realization that video technology will increasingly find a role in teaching and learning in this century.

When effectively embedded in instruction, shared online videos serve as an advance organizer and learning anchor while provoking student interest in a topic. As in anchored instruction, they offer a context or scenario to learn from and later reflect upon or replay. They rouse students' minds to life by showing them new insights, perspectives, and situations to learn from.

Ideas for YouTube Anchors and Enders

A multitude of technologies arose in the 1990's to foster student dialogue and collaboration (Bonk, Appelman, & Hay, 1996; Lajoie & Derry, 1993; Salomon, 1993; Soloway, 1993). Much of the focus at the time was on emerging technologies for computer conferencing and collaboration (Bonk, Medury, & Reynolds, 1994; Schrage, 1990) that brought students closer to real-world environments and abundant apprenticeship opportunities. In the current decade, the technologies of interest are still collaborative ones, but, also, those that foster student generation and visualization of knowledge. As the current wave of technology shifts to be more

participatory, educators are starting to notice the wealth of pedagogical uses of tools such as wikis (Bonk et al., 2008; Ferris & Wilder, 2006), shared online video (Williams, 2007), and blogs (Downes, 2004; Lenhart & Fox, 2006). For instance, wikis could be used a class discussion boards, group data collection tools, project development sites, virtual group study rooms, and repositories of collaborative lecture notes (Konieczny, 2007).

As indicated earlier, during the past couple of years, my colleagues and I have come to perceive that shared online video is an easy to use and powerful tool for teaching. We have used shared online video content such as YouTube to spur learner interest in a topic. Some ways an instructor might utilize YouTube videos in a class are listed in Table 1 below:

Table 1. Ten Anchors and Enders: Instructor Centered

Pedagogical Activity	Brief Description of the Idea
1. Online Video Anchoring	Online videos are used as an anchor or advance organizer of a class lecture.
2. Online Video Ender	Online videos are used after discussion and activities as a class “ender” or capstone event.
3. Anchoring and Ending	One or more online videos are used to start discussion as well as others at the end of the class to draw a sense of closure to that discussion.
4. Online Class Previews and Discussion	The instructor(s) finds videos and then posts them to the course management system for students to watch prior to or after class. If students participate in an online discussion based on such videos, the instructor should be clear about the length of post (e.g., two paragraphs) and how many comments of peers to respond to.
5. Anchor with Discussion	The instructor(s) finds videos and shows them in class and students discuss them in small groups with certain assigned tasks.
6. Pause and Reflect	The instructor(s) plays a portion of a YouTube video and pauses for reflections and then continues playing the video which is followed by still more class reflection.
7. Key Concept Reflections	Instructor shows the YouTube video and asks students to reflect on concepts embedded in it. He may replay the video 1-2 more times while prompting the class for certain key concepts. He might ask students to say “pause” when they see a concept from a particular chapter or unit displayed.
8. Video Anchor, Lecture, and Test (VALT)	Instructor(s) might show 1-2 YouTube videos at the start of a class and then lectures on topics related to concepts in those videos. When done lecturing, the instructor might show the same YouTube videos and ask for student reflection papers or discussion of what concepts are displayed in them. Such an activity might be embedded in a course quiz or examination.
9. On-Demand Conceptual	Instructor pauses a class activity or discussion at any moment and shows a YouTube videos related to a concept, theory, or

Anchoring	idea being presented or discussed.
10. Videoconferencing Anchors and Enders	YouTube videos might be shown in a videoconference or web conference with other classes and then used to spur discussion and interaction across sites. Controversial videos might be purposefully chosen to foster such interaction.

Of course, instructors are not the only ones who might incorporate YouTube videos in a classroom setting. Others who might use them include students as well as peers at other institutions in inter-institutional collaboration. Table 2 documents ten ways that learners might use YouTube videos as a course anchor or ender activity.

Table 2. Ten Anchors and Enders: Learner Centered

Pedagogical Activity	Brief Description of the Idea
1. Cool Resource Provider Handouts	Students find videos and show them in class and discussion unfolds. Students assigned as the cool resource providers for the week are asked to create a handout for the videos and other course resources selected.
2. Class Previews of Student Anchors	Have students (as cool resource providers) find videos and share with the class which previews them prior to the class meeting and discussion of them.
3. Collaborative Anchoring	A pair of students as well as the course instructor each find a few relevant videos for the week and then share what they have found with each other and decide which ones to use in class.
4. Student Anchor Demonstrators	Each student brings a video to class and presents and explains how each one is related to course concepts. A coinciding handout of videos and concepts is recommended.
5. Anchor Creators	Students create their own YouTube videos to illustrate course concepts.
6. Anchor Archives	An archive is created of videos from previous years and students are asked to update them.
7. Video Anchor Competitions	Students find relevant videos and send the list to the instructor(s) for viewing and selecting. The students whose videos are selected might receive special class recognition or bonus points.
8. Anchor Sharing and Rating	Students might share YouTube videos across class sections or institutions and perhaps rate those posted by their peers.
9. Video Anchor Debates	Students are asked to find YouTube or other online video content on the pro and con sides of a key class issue and then use them in face-to-face or online discussions and debates.
10. Anchor Creator Interviews	Students find YouTube videos relevant to course concepts and email interview the creator about the purpose and potential uses of the video or perhaps request that the creator join the class in a synchronous chat.

Those are just a few potential uses of YouTube and other online video content as an anchor or ender for instruction. As shared online video continues to escalate, there will be hundreds of

other uses documented and mashed-up with other emerging technologies to perhaps create totally new educational experiences. For instance, YouTube videos might be embedded in educational courses taught in Second Life. They might also be embedded in Google Maps for geography, history, or environmental science courses. Traditional and electronic textbooks might arrive with links to shared online video content and associated starter and ender course activities. Such online video content can be watched, reviewed, and shared anytime. As my late friend and colleague, Chris Essex (2005), pointed out, learners or instructors can randomly or purposely access any portion of a YouTube video or other Web streamed video content and watch it at their convenience or simply listen to it while they complete some other tasks. As he accurately noted, such personalized access is the preferred means of education and training today.

Potential Problems

The use of shared online video is not without stumbling blocks or challenges. As Stacey Williams (2007) argues, given the wealth of freely available online videos, be sure to use videos that relate to course content and objectives. Do not select something simply because the video is captivating or funny; there must be some instructional value. However, in the age of “YouContent” (Masie, 2008, p. 12), that value is increasingly determined by the learners or users, not some formal authority. At the same time, if learners are empowered to rapidly create their own online video content, they will need appropriate support tools and structures. Whether students design it or instructors select it, learners should be told the purpose or rationale for the video or be asked to figure it out. For effective anchoring or ending, the instructor must set the stage for the video.

Some problems may not arise until at the very moment you wish to show a particular video. Obviously, you should recheck all videos used in the past just prior to the class session to make sure they are still available. Videos are often taken off-line from YouTube and other sources without notice. Along these same lines, be sure that the video is accessible within the classroom setting you will be using, or, if it is a distance course, it must be accessible from the locations of your students. Given these potential problems, you should have a back-up plan in place (Williams, 2007). Even when the contents are triple checked, many educational organizations and institutions filter out video content such as YouTube. Unfortunately, sometimes those filters are only in certain classrooms or buildings; other times, they extend across the entire campus. As a result, be sure to check the exact location wherein you will present any online video content. If you plan to convert the videos to another format or download them to your course management system, permission is typically required. There are plenty of videos available today; you do not need to put yourself at risk for legal problems.

Conclusions

There are many uses for YouTube and other videos for learning—some will use them as anchors and others as enders. Whatever the use, we have just seen the start. In coming years, shared online video content may entail more than one-third of the content of courses in higher education. This is not insignificant. As a result, understanding how to embed online videos in instruction is perhaps one of the more pressing needs of college faculty members as well as those in other educational settings. The uses we report here as a starter or ender for instruction is but one example. Once created, such videos can be reused and replayed many times as well as mixed

and mashed-up with other content. Their uses are only limited by the creative imagination of instructors, students, and technical support personnel.

The use of online video and other online resources and materials can supplement a traditional course or perhaps push it into a blended learning format. Ways to empower learning by placing students in the role of cool resource provider or online video presenter is just one way to foster student learning engagement and retention. Ideas related to anchored instruction through the use of visual media were not as pervasive two decades ago when initially designed at Vanderbilt. However, with thousands of educational videos available in YouTube, TeacherTube, Google Video, and other online video repositories, their use will be increasingly common. And such use meshes well with learning approaches and preferences of students of the twenty-first century.

Anchoring instruction with online video content can happen at any moment—at the start of class, at the end, or whenever deemed necessary or advantageous. It can also happen when surfing the web before class, in the midst of a class presentation, or when accessing content with a mobile phone after class. Equally important, it is useful in face-to-face courses as well as blended and fully online ones. What is perhaps most important is for instructors to begin to reflect on the power of such online video technology, to experiment on their use, and to share their results. Anchored instruction is now a tool we all can use in nearly any lesson to make it come alive.

Online videos link many Web 2.0 technologies and associated pedagogies in instruction. They provide the context for learning and perhaps an advance organizer prior to the start of a lecture. They can be anchors as well as enders for instruction. Increasingly instructors will be relying on shared online video content in their teaching arsenal.

While research on anchored instruction in the 1980s and 1990s clearly demonstrated the power of the method, it is only now that most instructors can actually take advantage of it. We are fortunate to live in such times. While the Web 2.0 presents many rich and exciting learning possibilities, as shown in this paper, psychological and instructional theory can provide clues on how they might be best harnessed for fostering student learning. And that—personalized and powerful student learning—should be the goal.

References:

- Alexander, B. (2006, March/April). Web 2.0: A new wave of innovation for teaching and learning? *EDUCAUSE Review*, 41(2), 32-44. Retrieved July 9, 2007, from <http://www.educause.edu/apps/er/erm06/erm0621.asp>
- Ausubel, D. P. (1978). In defense of advance organizers: A reply to the critics. *Review of Educational Research*, 48(2), 251-257. Retrieved October 1, 2006, from <http://www.jstor.org/view/00346543/ap040234/04a00040/0>
- Benson, Heidi (2005, November 22). A man's vision: World Library Online. *San Francisco Chronicle*, A-1. Retrieved July 23, 2007, from <http://www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2005/11/22/MNGQ0FSCCT1.DTL>
- Bonk, C. J., Appelman, R., & Hay, K. E. (1996). Electronic conferencing tools for student apprenticeship and perspective taking. *Educational Technology*, 36(5), 8-18.
- Bonk, C. J., Lee, M., Kim, N., & Lin, G. (2008, March). *The tensions of transformation in cross-institutional wikibook projects: Looking back twenty years to today*. Paper presented at the American Educational Research Association (AERA) 2008 Annual Meeting, New York, NY.
- Bonk, C. J., Medury, P. V., & Reynolds, T. H. (1994). Cooperative hypermedia: The marriage of collaborative writing and mediated environments. *Computers in the Schools*, 10(1/2), 79-124.
- Brown, J. S. (2006, December 1). *Relearning learning—Applying the long tail to learning*. Presentation at MIT iCampus, Available from MITWorld. Retrieved February 9, 2007, from <http://www.mitworld.mit.edu/video/419>
- Brown, J. S., & Adler, R. P. (2008, January/February). Minds on fire: Open education, the long tail, and learning 2.0. *EDUCAUSE Review*, 43(1), 16-32. Retrieved February 23, 2008, from <http://connect.educause.edu/Library/EDUCAUSE+Review/MindsonFireOpenEducation/45823>
- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-41.
- The Cognition and Technology Group at Vanderbilt (1990). Anchored instruction and its relationship to situated cognition. *Educational Researcher*, 19(6), 2-10.
- The Cognition and Technology Group at Vanderbilt (1991). Technology and the design of generative learning environments. *Educational Technology*, 31(5), 34-40.

- Deal, A. (2007, June). Podcasting. *A teaching with technology white paper*. EDUCAUSE. Retrieved July 5, 2007, from http://connect.educause.edu/files/CMU_Podcasting_Jun07.pdf
- Downes, S. (2004, September/October). Educational blogging, *EDUCAUSE Review*, 39(5), 14–26. Retrieved August 27, 2006, from <http://www.educause.edu/pub/er/erm04/erm0450.asp?bhcp=1>
- Downes, S. (2005, October). E-learning 2.0. *E-Learn Magazine*. Retrieved October 26, 2006, from <http://elearnmag.org/subpage.cfm?section=articles&article=29-1>
- Essex, C. (2005). Faculty development through streaming video: A new delivery medium for training. *Distance Learning*, 2(3), 1-5. Retrieved March 23, 2008, from http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/a7/e4.pdf
- Ferris, S. P., & Wilder, H. (2006, June/July). Uses and potentials of wikis in the classroom. *Innovate: Journal of Online Education*, 2(5). Retrieved March 23, 2008, from <http://innovateonline.info/?view=article&id=258>
- Fox, G. (2003, December). Teaching normal development using stimulus videotapes in psychiatric education. *Academic Psychiatry*, 27, 283-288. Retrieved March 23, 2008, from <http://ap.psychiatryonline.org/cgi/content/full/27/4/283>
- The Horizon Report (2008). *The Horizon Report: 2008 Edition*. A collaboration between The New Media Consortium and the EDUCAUSE Learning Initiative (ELI), an EDUCAUSE program. Retrieved February 28, 2008, from <http://www.nmc.org/pdf/2008-Horizon-Report.pdf>
- Huijser, H., Bedford, T., & Bull, D. (2008, February). OpenCourseWare, global access and the right to education: Real access or marketing ploy? *International Review of Research in Open and Distance Learning*, 9(1). Retrieved March 23, 2008, from <http://www.irrodl.org/index.php/irrodl/article/view/446/1002>
- Konieczny, P. (2007, January). Wikis and Wikipedia as a teaching tool. *International Journal of Instructional Technology and Distance Education*, 4(1), 15-34. Retrieved March 23, 2008, from http://itdl.org/Journal/Jan_07/article02.htm
- Lajoie, S. P., & Derry, S. J. (Eds.). (1993). *Computers as cognitive tools*. Hillsdale, NJ: Erlbaum.
- Lee, M., Lin, M.-F., & Bonk, C. J. (2007, November). OOPS, turning MIT OpenCourseWare into Chinese: An analysis of a community of practice of global translators. *International Review of Research in Open and Distance Learning*, 8(3). Retrieved March 23, 2008, from <http://www.irrodl.org/index.php/irrodl/article/view/463/980> (HTML)
<http://www.irrodl.org/index.php/irrodl/article/view/463/982> (PDF)
<http://www.irrodl.org/index.php/irrodl/article/view/463/966> (audio file)

- Lenhart, A., & Fox, S. (2006, July 19). *Bloggers: Portrait of America's new storytellers*. Washington, DC: Pew Internet & American Life Report. Retrieved on July 9, 2007, from: <http://www.pewinternet.org/pdfs/PIP%20Bloggers%20Report%20July%2019%202006.pdf>
- Lenhart, A., & Madden, M. (2005). *Teens content creators and consumers*. Washington, DC: Pew Internet & American Life Report. Retrieved on November 19, 2006, from: http://www.pewinternet.org/pdfs/PIP_Teens_Content_Creation.pdf
- Salomon, G., (1993). On the nature of pedagogic computer tools. In S. Lajoie & S. Derry (Eds.), *Computers as cognitive tools* (p. 179-196). Hillsdale, NJ: Erlbaum.
- Schrage, M. (1990). *Shared minds: The technologies of collaboration*. New York: Random House.
- Siemens, G. (2006, November 12). *Connectivism: Learning theory of pastime for the self-amused?* Retrieved March 23, 2008, from http://www.elearnspace.org/Articles/connectivism_self-amused.htm
- Soloway, E. (1993). Reading and writing in the 21st century. *Communications on the ACM*, 36(5), 23-27.
- Paivio, A. (1986). *Mental representations: A dual coding approach*. New York: Oxford University Press.
- Paivio, A. (1991). Dual coding theory: Retrospect and current status. *Canadian Journal of Psychology*, 45, 255-287.
- Time Magazine (2006/2007). *Time Magazine Person of the Year*, 168(26), December 25, 2006/January 1, 2007.
- Williams, S. (2007, November). Using video clips to stimulate discussion. *Faculty Focus*.

Appendix A. Online Video Resources and Portals

Video Resources and Portals:

BBC News: Video and Audio: http://news.bbc.co.uk/2/hi/video_and_audio/default.stm
BBC News: Video and News: <http://news.bbc.co.uk/>
BBC Video Nation: <http://www.bbc.co.uk/videonation/>
CNN.com Video (see also Interactive News and News Documentaries):
<http://www.cnn.com/video/>
CurrentTV (see also Interactive News and News Documentaries): <http://www.current.tv/>
Global Nomads Group: <http://www.gng.org/>
Google Video: <http://video.google.com/>
MIT World: <http://mitworld.mit.edu/index.php>
MSNBC Video (see link to videos): <http://www.msnbc.msn.com/>
Nomadsland: <http://www.nomadsland.com/>
SciVee: <http://www.scivee.tv/>
SplashCast: <http://web.splashcast.net/catalog/search.aspx>
TeacherTube: <http://www.teachertube.com/>
Yahoo! Video: <http://video.search.yahoo.com/>
YouTube: <http://www.youtube.com/index>

Appendix B. Sample YouTube and Other Videos for Learning and Instructional Design Theory Classes:

1. Memory Check: <http://www.youtube.com/watch?v=CJ2MP5eJ3TU>
2. Brain Man: The Boy with the Incredible Mind:
<http://www.youtube.com/watch?v=LU9pcPDvQWg> or
<http://www.youtube.com/watch?v=AbASOcqc1Ss&feature=related>
3. Mind Mapping with Tony Buzzan <http://www.youtube.com/watch?v=MlabrWv25qQ>
4. Improve Your Memory: <http://www.youtube.com/watch?v=k8D8WRgVJA0>
5. How your memory work?: <http://www.youtube.com/watch?v=2vrVXWjKdQo>
6. Robots: <http://www.youtube.com/watch?v=rokOtmUhos0>
7. Asimo Running: <http://youtube.com/watch?v=wSTex0Vfy9o>
8. Operant Conditioning: http://www.youtube.com/watch?v=I_ctJqjlrHA&feature=related
9. B. F. Skinner Modelagram:
<http://www.youtube.com/watch?v=mm5FGrQEyBY&feature=related>
10. 3 Chain Behavior: <http://youtube.com/watch?v=XpbBgxvVJeM&mode=related&search>
11. George Siemens, The Changing Nature of Knowledge (4 short videos):
<http://www.homozappiens.nl/node/77/play>