# Using Technology To Create A Dynamic Classroom Experience

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**ABSTRACT**

*There are a multitude of diverse technologies available for integration in the college classroom, but considering how to implement these initiatives can be overwhelming to the instructor. The adaptation of this technology is often very simple and involves little more than the Internet and basic word processing skills. A review of the multimedia applications, which are inexpensive (often free), easy to implement, and require limited technology skills, is covered. Multimedia items that can be easily implemented in the college classroom include animation, slideshows, blogging, instant messaging, podcasting, and video on demand. Multimedia, which uses the Internet as its transfer mechanism, can be an effective method of creating a dynamic college classroom experience.*

**Keywords:** Multimedia; Technology; Higher Education; Classroom; Internet; Curriculum

## INTRODUCTION: TECHNOLOGY IN THE CLASSROOM

A college student is more likely to be familiar with SparkNotes than CliffNotes, Wikipedia than WorldBook, and more comfortable locating bibliographic material in an online search engine versus a card catalog. Peek in on college classroom and you are likely to see desks lined with iPads, laptops and Smartphone's. The instructor may be using online videos as lecture notes and social networking and blogs to post information on homework problems or challenging course material, and office hours might be replaced with instant message chat times. While utilizing many of these newer technologies in the classroom may seem foreign to veteran teachers, the youth entering colleges today are accustomed to creating, learning and communicating using technology (Green & Hannon, 2007). It is not just the younger generation who has adapted to using technology on a daily basis. According to Entertainment Software Association (2010), the average game player is 34 years old and 26% of Americans over 50 play video games. According to Facebook's press room statistics (2011), people spend over 700 billion minutes a month on Facebook. Technology and the advent of the Internet have changed how we gather and share information. Online resources and technology-based applications allow educators to serve students quickly and efficiently and in a manner in which the 21st century student is accustomed.

There is a significant amount of high quality academic work online for free. For example, Massachusetts Institute of Technology (MIT) offers free lecture notes, exams, assignments and solutions, and even online textbooks via open courseware, for anyone to view without registration and at no cost (MITOPENCOURSEWARE, 2011). Multimedia Educational Resource for Learning and Online Teaching (Merlot) is a free online community of resources with over 28,000 learning materials for review, including art, science and humanities (http:www.merlot.org). There are numerous other sites, such as videlolectures.net, Ted.com, and Stanford Universities Entrepreneurship corner, which offer videos, podcast and lectures pertaining to all kinds of different topics with a click of a mouse. Flatworld Knowledge (www.flatworldknowledge.com) offers free open source college textbooks online which contain interactive media elements for instructors or students.

The technology to support learning, the ability to bring this technology to the classroom, the climate, and consumer demand, which supports the sharing of knowledge, already exists. The challenge is to find ways to augment current instruction while maintaining academic integrity utilizing the technology the students expect to

enhance learning in the college classroom. While most Institutions are implementing some form of technology in the classroom, many fall short of meeting today's student expectations. The technology generation - those born between 1990 and 2004 - have always had access to the Internet and the World Wide Web (Age group, 2011). The Generation Z students are well adapted at communicating via the Internet and many were using computers before they entered pre-school. The traditional education model has made some strides in adapting to the learning styles of these students by developing curriculum which utilizes some form of technology, but the technical knowledge and interest of today's technologically savvy student requires technologically savvy curriculum.

There is some debate on whether technology actually enhances learning. In a meta-analysis study conducted by the Department of Education, incorporating multimedia such as videos or online quizzes, did not appear to influence the amount of learning which takes place in the classroom, but they did tend to increase the engagement of the student (Means, Toyama, Murphy, Bakia, & Jones, 2010). A study conducted by Agodini, Dynarski, Honey, and Levin (2003) concluded that enhancement in learning did occur in schools where teachers demonstrated an interest in using technology and the schools had the infrastructure to support technology initiatives.

The learning process is changing in all organizations, not just higher education. Collaboration, communication, accessibility and timeliness are concepts promoted in organizations of all different types and sizes and in all different kinds of industries. The inclusion of multimedia in various forms in the classroom enables educators to enhance learning environments, improve the teaching and learning experience, and also mimic what learners will find in the workforce.

**THE SUPER HIGHWAY**

According to Internet world stats (www.internet worlstats.com), 77.4% of the U.S. population used the Internet in 2010. Not surprisingly, 86% percent of college students consider themselves frequent Internet users and 76% report they are using multimedia while on the Internet (Hughes & Dennison, 2008). The Internet is where college students are and what they are using to interact, socialize and assimilate information. Higher education institutions can utilize the broad coverage and diverse features of the Internet to deliver a wide range of topics quickly to students. Most universities have, to some degree, transformed many of their conventional media to a digital format that can be used by students in an asynchronous environment. This adaptation can involve the use of multimedia and exposes students to real-world technology skills within their classroom.

Cloud computing, or the delivery of information technology over the Internet, is quickly being adapted in higher education. Webmail services, such as Gmail or social networking sites such as Facebook, are examples of cloud computing (Mitrano, 2010). A survey conducted by The Campus Computing Project indicates that nearly 60% of respondents from public universities who use an email hosting service use the web-based Gmail system (Carter, 2010). Many students already have a Gmail account when entering college, so acceptance is fairly seamless. When universities partner with Google to provide email for their students, they are allowed to keep their previous email addresses and customize the look and content of their Gmail accounts. Instant messaging, calendaring and scheduling tools are also embedded in the Gmail accounting, making these web-based email accounts appealing to many universities. Moodle is another example of how institutions are using Internet-based applications to reach their students. Moodle is a free course management system (similar to eCollege or BlackBoard) which allows educators to create and deliver course material via the Internet. One of the benefits of utilizing these cloud-computing components in higher education is the ability to purchase and use resources only when you need them versus huge outlays of capital costs which might be difficult to recover (Mitrano, 2010). Cloud-computing allows for just-in-time access to technology.

Animation, text, audio, video, slideshows, podcasts instant messaging, and simulations are all examples of multimedia. Research has shown that multimedia has a positive influence on the effectiveness of the Internet (Ko & Ho, 2003, and Ussahawanitchakit & Intakhan, 2010). Learning how to incorporate mulimedia expands the boundaries of the classroom (Simkins, Cole, Tavalin, & Means, 2002). Students are no longer confined to learning material from static sources such as text books or stagnant websites. Multimedia and the Internet allow students to experience a learning environment rich in knowledge and experiences.

 

## MULTIMEDIA CONSIDERATIONS FOR ENHANCING THE CLASSROOM

There are numerous multimedia tools which can be used to enhance the learning experience in the college classroom. There are various levels of this integration which range from the very simple and static (such as including a PowerPoint presentation to augment lectures) to the more complicated and interactive (such as simulations which focus on active learning and problem-solving). Resource constraints can obviously have an impact on the type of mulitimedia which can be incorporated in the classroom, but there are a wide variety of low (or no) cost tools currently available. Several options for beginning the process of integrating multimedia in the classroom are presented in the remainder of this section.

### AUDIO

There are many multimedia technologies available involving audio. Some of the more recent technologies include streaming audio over the Internet, such as web radio, real audio feeds or webcasting, and Voice-over Internet Protocol (VoIp) which transmits voice conversations via the Internet, all of which can be incorporated into the classroom experience. Audio files in the form of a podcast placed on the Internet for students to download are an example of how this technology is being incorporated in both online and on ground classrooms. Apple's iTunes has thousands of podcasts on a wide variety of subjects readily available for free download. Podcast Alley (www.podcastalley.com) is just one of numerous free podcast websites where students can download podcasts for free. A quick search on the Podcast Alley website for podcasts pertaining to business brings up almost 5,000 podcasts available for free download. Some of the topics include personal and corporate finance, organizational communication, project management and effective leadership. Many of these podcasts are updated weekly with current information by both educators and business professionals. Instructors and students can resister for free and create, upload, and view podcasts as they wish. Podcasts can be created with a simple computer microphone.

Integrating audio resources, such as telephony, or the use of some type of equipment to provide voice communication, in the classroom can help foster interest and participation and encourage active learning (McGlinn, 2007; Tanner, 2009, and Enstrom, Nohlgren, Olofsson, Peisa, & Synnergern, 2007). Teleconferencing, telephone interviews, group projects and tutoring (individual or group) are examples of how telephony can be used in the classroom. The ability of several students to simultaneously communicate with each other can increase satisfaction (Rourke & Anderson, 2002). Many institutions have already made this latest technology available to their full-time instructors, but adjuncts may not be afforded the same benefits. For those without these resources, low or no cost VoIP services, such as Skype (www.skype.com) and Vonage (www.vonage.com), can be used for research and collaboration in the classroom by simply installing it on a computer and connecting the computer to the classroom (Branzburg, 2007). Many students use Skype to contact their instructors for help with their homework via the instant message service. Skype even has a tutoring and homework directory listed on their website. Instructors are also using Skype and webcams to allow students to interact with guest speakers and experts around the globe (Young, 2011).

Free conference calling sites, such as Free Conference Call (www.Freeconferencecall.com), offer teleconferencing services for up to 96 callers at no cost. Instructors can set up a free account and are assigned a teleconference number which they can send to their students. Simple and intuitive voice tools can enhance education in both the distance learning and on ground campuses by creating a more collaborative environment for the students (Hargis & Wilcox, 2008).

### VIDEO

According to the National Teacher Training Institute (NTTI, 2011), incorporating videos in the classroom leads to increased retention of information by students and helps them comprehend the material quicker than students who are not exposed to videos in the classroom. Videos may allow teachers to reach students who are visual learners and tend to learn best by seeing the material rather than hearing or reading about it. Interactive video games, where the user or player can choose the outcome from a number of possible scenarios, is an area currently being integrated in the curriculum at both K-12 and the higher education institutions. Florida Virtual School students earn high school history credits while piecing together historical clues in a multiplayer online role-playing game

called Conspiracy Code (Solochek, 2009). Simulations, or interactive videos designed to imitate real world scenarios, have been used to increase skills for over two decades. Medical students use simulations to hone their surgery skills on computerized mannequins before working with live patients and aviation students receive training in flight simulators to perfect their flight skills prior to manning an aircraft. Similar techniques are being used in the classroom to teach everything from social skills to quantitative analysis (Wilson, 2009). For many years, educators have been trying to figure out a way to compete for students' attention with digital content. Integrating the digital content in the classroom not only captures the students' attention, but might also maintain it.

Video conferencing, video storage for viewing video later, and multimedia email that allows the sending of electronic mail with video attachments, are additional methods that can be used to enhance student learning. There are academic video database services, such as www.films.com, which distribute and archive academic content for the humanities and sciences via DVD or streaming for educators. There are a variety of ways to use these applications in the classroom. Classroom instructors are finding creative ways to integrate videos into their once static lectures. A science teacher can discuss the concepts of photosynthesis and then show the actual process using a video clip from the video library. Data modeling can be illustrated by graphing an equation and then showing the process via an animated video clip. A chemistry teacher can record his demonstration of a chemistry experiment and post it on YouTube for their students to view. The Chicago public school system found that using videos in the classroom has improved their state assessment scores as the videos allow students to visualize difficult concepts, such as isosceles triangles (Gillespie, 2007).

Streaming videos can enhance the online classroom by supplementing text-based learning with online videos which support the topic being covered. Integrating streaming videos requires only that the institution and its students have high-speed internet connections. The University of Washington has a streaming television website called UWTV which is accessible to faculty, students and the general public. Lecture series, news broadcasts, and human interest stories are all accessible via streaming video. CNN and the New York Times, along with most major new stations across the country, also provide streaming videos via their websites. Capture programs, such as Keepvid.com, allow any video on the Internet to be captured, downloaded and easily integrated into classroom lectures or assignments. There are countless methods of effectively integrating multimedia applications into the classroom. Today, instructors are limited more by their imagination and creativity than by accessibility of technology.

Jing (www.jing.com) is free video capturing software which is free for videos up to five minutes in length. Instructors have used this type of program to visually represent a concept. For example, if students are having difficulty understanding the idea of hanging indent format for an APA reference page, the instructor could create a short Jing video which shows the process of formatting a paragraph correctly. Similar services that offer longer video times and additional features are available. Screenr (www.screenr.com) is a web-based screen recorder which allows the capture of longer videos and uploading them via a computer or smartphone. Animoto (www.animoto.com) allows screen-casting of video clips, photographs, and music into a video piece which could be used for student presentations, or instructors could develop a unique welcome announcement to post in their online classroom or send to their students via email. Students who attend college on campus often want their classroom lectures either recorded or broadcasted so they do not need to attend class or can review the content later. It is a matter of convenience and can be a determining factor in the student enrolling in the particular class (Young, 2011).

## BLOGGING

A weblog, or blog as it is more commonly called, is similar to a personal diary in that it allows the blogger to post their thoughts, ideas, and commentaries on a website. Oravec's (2002) research found that incorporating blogs into the classroom allows students to "gain a sense of empowerment and personal identity while learning how to interact with others online" (p. 6). Blogging can facilitate an inviting environment where students and teachers can exchange information relevant to their academic studies. For example, if students were having difficulty understanding a complex concept, an instructor could post links to research articles or websites on the topic on the blog site. Students could also post questions and comments on the blog site for everyone to view. This can create a collaborative learning environment and may reinforce classroom learning. Metacognitive learning strategies reinforce active learning by encouraging self-questioning, thinking and reflecting about concepts (Sheid, 1993).

Blogging allows students and instructors to share their thoughts and comments on the thoughts of others which could create an interactive learning environment. Blogging integrated technology in the classroom with little or no technology knowledge. Blog sites such as www.blogger.com are free and are as simple to use as a Word Processing program and could enhance student experiences in the classroom.

## CLASSROOM LEARNING AND MOBILITY

Portable computing devices, such as laptops, netbooks, tablets, and Smartphone's with wireless networks, allow teaching and learning to take place anywhere there is an Internet connection. Many Smartphones - cell phones with operating systems similar to a personal computer - have the ability to open, edit, and send Microsoft Word, Excel and PowerPoint documents, as well as PDF files and images. In addition, learning management systems, such as BlackBoard and eCollege, have mobile applications, like BlackBoard Mobile, which allows students and instructors to access their online classes via their Smartphone. Instructors can post announcements, grade assignments, check on course activity, and participate in class discussions. Students can submit their work, read and respond to discussion questions, and take quizzes all via their Smartphone.

The iPad, made by Apple, is still a novelty in the business world, but it is being used more frequently for content delivery and even as a content creation tool in academia. iPads can allow students to automatically update information as instructors facilitate up-to-the-minute information, research, multimedia, and news stories for each lesson, all via the iPad. The iPad can also be used as an E-Reader, and E-textbooks are currently being developed for college classes (Fishman, 2011).

## FACEBOOK

Facebook incorporates multimedia and social networking and many colleges and universities are including Facebook applications at their campuses. The Global MBA Facebook app for Smartphones lets users sample typical business school courses through the social networking site. The free course material includes message boards, over 80 hours of video lectures, and course notes. The content is free and the only cost is when the student decides to enroll in a college to take the exams. Another school - The University of Whales in England - has launched the Facebook MBA, and the Facebook courses being offered by The London School of Business and Finance already have 34,000 users (Toliver, 2011).

## CONCLUSION

New and emerging technologies allow college curriculum and instruction to be developed which is diverse and interactive. Multimedia allows students and instructors to become engaged in their learning, increase comprehension of abstract concepts, and increase interest and motivation (Mayer, 2005). The integration of multimedia in the online, on-ground, or blended classroom has been demonstrated to increase student awareness and attention which might lead to increased satisfaction on the part of both the student and the instructor (Avila, Biner, Bink, and Dean, 1995).

While content knowledge is certainly still a major component of teaching, effective teachers also need to create a classroom environment that facilitates learning, which might involve integrating technology. Multimedia can be used in various ways and in multiple curriculums to add clarity, provide guidelines, and engage students (Lachs, 2002). College classes that integrate multimedia and technology in their assignments may help prepare students for the technologically demanding careers they will face once they graduate.

The idea of integrating multimedia into the classroom is not a new concept and multimedia technology is simply a teaching tool which can be used to enhance the classroom experience. As new technologies emerge, both students and educators are often eager to find methods of assimilating these technologies in their college classroom experience. Integrating multimedia in the classroom can allow students to apply real-world skills, learn effective collaboration techniques, learn creative ways of expressing their ideas, and synthesize complex content (Shank, 2005). While multimedia offers unique opportunities to enhance the learning environment, it does not guarantee an effective learning environment. The facilitator, students, administrative support, and technology available will

impact the success of the integration of multimedia in the classroom. As more and more no-cost, easy setup technology become available, the integration of technology should continue to become more common in the college classroom.

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**NOTES**

 