Cloud Based Instructional Resources for Distance Learning

Noah Sturdevant

Stamford International University

Bangkok, Thailand

Abstract

Technology has advanced sufficiently, especially in the area of communication, to be on par with traditional face to face classrooms. In many ways, distance education meets or surpasses traditional classes, especially in regards to being easily evaluated and revised. The technologies explored relate to different media, mostly in a cloud computing setting and are developed using rapid prototyping.

Keyword

Cloud computing, distance education, technology, rapid prototyping, hyperstory, and educational games

Online Teaching Resources

One of the major issues in the early days of distance education was communication. In the beginning of this industry, assignments and responses actually had to be mailed back and forth. These "correspondence courses" did the best they could with limited resources, but were not equal to a traditional face to face classroom. These days, though many people still have this old time mindset about the inferiority of distance education, things have changed. In reality, distance students may be are getting at least as good an education as their face to face peers, thanks to technology. In this technologically driven age, almost anything that can be done in a typical

classroom can be done online, individually or in a group, and the internet has allowed more flexibility and chances to evaluate and revise teaching materials. Ever since the invention of electronic mail, or e-mail as it is commonly known, communication has become easier for all parties involved and does not have to depend on telephones for immediate access or voicemail and letters for any time access.

The technology behind e-mail and much of what is done on the internet is something called cloud computing. According to Armbrust et al. (2009), "Cloud Computing refers to both the applications delivered as services over the Internet and the hardware and systems software in the datacenters that provide those services. The services themselves have long been referred to as Software as a Service (SaaS)."

Basically, cloud computing lets you share and access programs, like Microsoft Office, Skype, and Blackboard, for example, without downloading and keeping them on your computer. As long as you are online you have access the programs. Often, in the case of documents, you can edit and share documents through the cloud, which is like trading papers, working in groups, or handing in assignments in a traditional class.

One of the best known and most used cloud based programs is Skype. Skype has been available as a cheap, or free, way to talk to people over the internet for years, using video, audio, or both; but it has also been a way to educate. Virtual face to face tutoring sessions are one method currently being used, but that is just scratching the surface.

"In addition to language studies, proponents of Skype in the classroom point to other

Skype-friendly educational environments: geography and other social studies, where virtual field trips can easily be aligned to a course curriculum, and English

courses, with the possibility of hosting a book's author through a virtual visit"
Quillen (2011).

Speaking of authors, e-books are also responsible for making distance education successful. In fact, in some places, e-books and tablets are replacing traditional text books. For example, "South Korea is taking a $2 billion gamble that its students are ready to ditch paper textbooks in favor of tablet PCs as part of a vast digital scholastic network" (Associated Press, 2011).   E-books are also being adopted in the USA and are expanding beyond just reproductions of the ink and paper editions. "McGraw-Hill's cloud-based textbook platform, called Cinch, incorporates the company's curriculum into a Web 2.0 format, in which students can start discussions with each other about the content, complete interactive assessments and activities, and search Google or Wikipedia for further information."

Some learning management systems are also moving to mobile devices, like tablets and smart phones. Blackboard (2013), is available on many devices, including the I-phone and I-pad. In this way, the distance student actually has an advantage over the face to face classroom student, because a mobile device can hold many books, and is much lighter than the average textbook. Also, many e-books are available to be rented and cost less to buy because there is no physical product to be manufactured or shipped. The rental policy of Amazon.com, states "Rental times start at 30 days and can go up to 360 days, depending on how long the student needs access to the book. Users can increase their rental times in one-day increments, or opt to buy the book. Amazon will also save any notes made in the margins, even after the rental expires."

Tablets and mobile devices are not just limited to reading though. Video games have been a part of these types of devices almost as long as they have been around. Though known as a form of entertainment, video games have also been used as a tool for learning in the educational

community for years. "Games, by their very nature, assess, measure, and evaluate," states an article by Ash (2010). The article goes on to say "When used in the correct way, they can actually increase subject-matter knowledge as well as help students to build higher-order thinking skills."

Using games to educate is also addressed by Falstein (2005), who stresses that success in this area can be improved by making the games fun and "hiding" the educational content. These games can range from specially made educational games, to games like Second Life, which are interactive and able to be used as a social meeting place. While not as popular as it was intended to be (Ash, 2011), Second life is flexible and can be adapted to teach many subjects and topics in a virtual world.

Another technology that takes place in a virtual world, though on a smaller scale, is the hyperstory. Hyperstories are "an interactive, multi-perspective story that uses the engaging quality of a movie to create an evolving learning experience" (Clothier, 2003). They work by simulating a task or scenario told through a story and making choices along the way that change the story. A tour of a Museum is an example of when a hyperstory could be appropriate, because it is more interactive than a video or slideshow and lets the user see things they might never see in person.

But while hyperstories are complex and interactive learning tools, what if something more simple is needed? If that is the case, screen casting may be the answer. Screen casting is simply using a program, like Adobe Flash or Camtasia to record the action taking place on your computer screen. Roberts (2011) talks about how using screen casting to record your computer aids in education. "It really lets you show your patrons (instead of tell them) how to perform a task." For instance, if you know someone who is having trouble figuring out how to do something in

photoshop, you could film your screen as you do that task on your own computer and then send it to them or upload it to YouTube for them to watch.

Youtube, in general, is also a good resource for education because it allows people to share video with each other, using the cloud computing model and not requiring videos to be emailed or downloaded. This kind of video is known as streaming video, and is used in many educational settings. When classes can't be attended at the same time by every student, a lecture can be recorded and uploaded to a server like Youtube, or a local website, so that it can be viewed later.

Implementation

After the type of technology is selected, it must be implemented. Rapid-Prototyping is often chosen, primarily because it is the fastest way to get an idea of how a project will turn out. Rapid-Prototyping is "literally a process of taking only one aspect of your training program all the way from analysis through evaluation before you do any other piece of the design" (Piskurich, 2006, p. 298). Because of this, each type of technology can be given a beta test in order to evaluate their effectiveness when paired with the material being presented.

Conclusion

In conclusion, The previous resources listed should prove that while the face to face and distance education experiences are different by necessity and reach the goal of educating the learning in different ways, they both do reach that goal in the end. Also, while the technology available to the distance learner is vast and flexible, it should be remembered that technology is just tools for a teacher. Cloud computing, Skype, streaming video, educational games, hyperstories, e-books, and mobile devices are useful, and do make it possible to learn just as well as in a traditional classroom, but only if the instructor is willing and able to use them.

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