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Technical Report Instructional Technology

Creating Community in the Virtual Classroom: Breeze and Tegrity

Deborah L. Wise, MSIT
Colorado Technical University
dwise@coloradotech.edu

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Deborah Wise, MSIT
Senior Curriculum Designer, Colorado Technical University
dwise@coloradotech.edu

Abstract: As the demand to meet the needs of the non-traditional student increases, institutions need to adopt tools that leverage the technical knowledge of existing faculty with the ability to create curriculum that is interesting and applicable to an active learning model. Tegrity and Macromedia Breeze are two easy-to-implement tools that don't require specialized knowledge yet can have substantial returns in terms of student interaction and retention - as long as they are used to enhance, not replace, what is currently used in the classroom. Features of both Tegrity and Breeze are compared and recommendations are given for where they can best assist current pedagogical methods.

Purpose

Colorado Technical University has developed an accredited graduate degree program in instructional technology, to begin in May 2006. Two target markets for this program have been identified: Corporate trainers/educators and k-12 teachers who may be looking for a graduate degree to increase their income potential and advance in their field. These target groups work with very different types of learners, yet their challenge is the same: How do teachers/trainers amend traditional methods to engage learners in a digital society? The degree program will initially be offered as a hybrid degree (virtual classroom in addition to on-ground class time), although it may be offered as a fully online program in the future. In an effort to serve these two markets, CTU has researched the types of tools that may be used by these groups in their professional environments and have focused on two digital learning tools: Breeze (Macromedia/Adobe) and Tegrity. Each of these tools has a distinct purpose in the delivery of this degree program and will be incorporated into other programs as results of the instructional technology program are analyzed.

Community in the Classroom

The classroom is the workplace of a student. Here community is developed - the student's voice is established and their place (in terms of the whole class) is identified. Great instructors draw out naturally shy students and reign in those who might otherwise dominate the group. Eye contact is made, body language is read - it is how we understand communication. Is it possible to replicate that sense of community in a virtual world? In a world where students may never meet? This type of community has traditionally been part of the gaming world, largely due to role-playing. How might instructors bring this sense of community to the classroom?

Enlightened learning - the "ah-ha" moment - is awakened when we leave the literal, allowing individuals to strive for depth, to entertain ideas, to explore the full range of experience found in their own imagination (Briskin 1998). Can this depth of interaction be accomplished when we are nothing more than images on a computer screen? The challenge in virtual communities is to create an environment that touches as many of the senses as possible, allowing for the synchronous exchange of dialogue and ideas between students and instructors, while remaining mindful of course goals and objectives.

Quality of Learning in a Technology-Driven Environment

Will a student learn better just because we can throw more materials at them through a content management system? Will 2G of class materials actually cause a student to learn the material more effectively than 500M? Meaningful learning depends on the learner's cognitive activity during learning rather than on the learner's behavioral activity during learning (Mayer 2001). Reading ten white papers on a subject won't create meaningful learning if the student can't actively relate what is being taught to what they already know. Meaningful, active involvement reinforces learning (Rosenberg 2001). More content is not necessarily better. Technology is a tool, not an end. Curriculum that is delivered digitally needs to include activities that will stimulate learning by allowing students to share ideas, collaborate on projects and have fun despite the subject matter. Game-based activities and rewards can not only demonstrate active learning of subject matter, it can provide instant gratification in terms of rubric-based scoring (Calongne and van Tonningen 2006). Students will know in advance how to "score" points in terms of learning outcomes.

Faculty Acceptance of New Technology

According to the Sloan Consortium, "...a relatively stable minority of Chief Academic Officers (28% in 2003 compared with 31% in 2005) continue to believe that their faculty fully accepts the value and legitimacy of online education." (Sloan 2005) *That leaves 69% who don't!* Why is faculty so seemingly resistant to online technology?

One reason may be *time*. Many instructors are teaching full course loads, volunteering for committee work and doing research. They believe an online course takes longer to prepare in terms of curriculum. If they are teaching a hybrid course, there may be confusion as to what should be presented in class as opposed to online. They may also be concerned about maintaining discussions and creating interactive, engaging activities. This is where acting as a "guide on the side" may be more helpful than feeling compelled to answer a student's every thought. Assigning student facilitators can also allow instructors to watch discussions unfold, intervening only to bring a straying discussion back on track.

Another reason faculty may be reluctant to adopt online learning is that the majority (64%) believe that it takes more discipline for a student to succeed online. If that is true, then faculty may be more hesitant to use online learning at the undergraduate level, when students are less disciplined in university-level instruction. It may also be more of a challenge to transport traditional curriculum to an online format, where sensory barriers are present. Why not instead develop curriculum that uses the online environment to its greatest potential?

Specialized Hardware

If specialized hardware is needed for an online tool, who will bear that cost? Will it be mandatory? Will the tool be compatible with every operating system that might appear on campus? Right now, students have laptops, cell phones and MP3 Players (among other devices) in their personal electronic arsenal. Can we expect the student to purchase and manage yet another device as a requirement for online learning? What if they come to class without the special equipment?

Breeze Features

Breeze is made by Macromedia/Adobe, companies that have long been associated with online learning and the delivery of print materials electronically. The breeze product has multiple uses for education:

- Deliver engaging self-paced courses
- Conduct live virtual classes
- Manage online training programs

- Facilitate virtual meetings

While these uses may seem more at home in the corporate training world, the Breeze platform can accomplish two things in an educational/training setting: Synchronous virtual learning and archiving sessions for on-demand viewing.

Breeze has minimal special requirements for either the instructor or student (internet connection, Flash Player). It integrates with PowerPoint, giving an instructor the ability to voice-over slides and even create interactive quizzes as part of their presentation. The instructor can also present from their desktop and give secondary control of the “stage” to students. The optional web camera would allow multiple presenters to be on-screen and VOIP technology (or text) can be used to communicate between students and instructors. The session can then be archived and played back as students need to review.

Tegrity Features

Tegrity is primarily a classroom tool. The instructor can use voice only, or can use an optional camera to record the classroom while in session. The classroom deliverable is similar to what Breeze produces - an online version on whatever is happening on the instructor’s desktop, including PowerPoint slides. With the use of an optional tablet PC, the instructor can annotate their lecture, just like John Madden on Monday Night Football! All annotations are recorded as part of the session. With one click of a record button, the session can also be recorded for upload to the Tegrity servers to be translated into a Podcast, complete with slides and even video (if the receiving iPod will support the technology).

The feature that makes Tegrity unique is the Notes feature. Students have a digital pen and dock, which they will use to take notes on either plain paper or Tegrity notebooks. This pen will store the notes as they are written, requiring periodic docking in order to transfer notes to the dock for storage. Once they are back at their home computer, they can connect the dock via USB and the notes will automatically open the previously-installed Tegrity software and store the notes. Students can then go into the institution’s content management system and view the classroom archive along with their notes. If there is a place where their notes don’t make sense, they can click on the notes and the archive will move to the point in that lecture where the notes were taken. Playback can be made on demand, with or without Notes.

Pedagogical Concerns

If an entire course can be viewed online, what will compel students to attend class? (Silverstein 2006). Aside from a mandate for classroom participation, hybrid instructors will be charged with creating value-added activities that only occur in class to create a sense of community. Will Podcasting be more of a deterrent and less of a study tool? If students can view their notes and the interaction of every other participant in the classroom in the privacy of their own home, will it be difficult to encourage students to work as groups?

Recommendations

While Tegrity and Breeze have different purposes, there seems to be a lot of redundancy. Both products are server-driven, which may or may not create administrative issues. In the case of Breeze, there doesn’t appear to be any special hardware or software necessary and the learning curve is relatively short. Breeze can also be used for online conferencing, expanding its use past teaching and into administration. Since online communication is native to most people, our expectation is a quick integration to Breeze usage.

Tegrity, in contrast, requires the instructor to have a tablet PC (if they want to annotate). The Notes hardware is central to Tegrity’s marketing; the pen, dock and two initial tablets are at additional cost (we have chosen to provide this as part of student tuition expense). At this time the digital pen (made

by Logitech) is not Mac compatible, which could pose a problem for our k-12 target market, who have a higher than average percentage of Mac users. If a student forgets to bring the dock and pen to class, they will not be able to take notes of the lecture, which is a principal feature of the product.

Another concern with Tegrity is how it might be used in the student's professional environment. As students become more comfortable with their ability to learn, they develop their own discipline in how they approach subject matter. By the time a student reaches the graduate level, a tool such as Tegrity may not be useful. Corporate trainers (one of the initial target markets for our program) may not see a need for this tool in their professional environment. Educators in the k-12 environment may find Tegrity a useful tool for younger learners; school districts however, may not have the budgets necessary to implement Tegrity system-wide.

For now, CTU has made commitments to use both products; the questions presented here will be measured and the results will be the subject of an additional research paper.

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