ACCESSIBILITY ISSUES IN ONLINE LEARNING

JANUARY 2014

How do you keep math assessments accessible online?

QUESTION:
I am interested in solutions and ideas regarding how to facilitate learning math online. What are tools and techniques that your faculty are using to help facilitate learning in online Math classes. I am specifically interested in how they are keeping the instruction, assessment and activities completely online. Our faculty use Pearson's MyMathLab, but it has some accessibility issues. Most of our online Math classes also require proctored paper exams – are any of you doing something different that keeps the assessments online? Thanks!

– Laura Ballard, eLearning Director, Mesa Community College

RESPONSES:
We are using the Hawkes system for some of our classes, however the majority of the teaching goes on within our Blackboard system. I don’t know all of the ins and outs of what Hawkes does, but I do know that our faculty use a variety of tablet tools with stylus’ to conduct lectures, Khan Academy Videos, e-conferencing, and proctored testing. Our math classes have been problematic over the years and we are just now engaging in a major redesign effort for all of our math teachers who want to continue their online teaching. We also are designing Supplemental Instruction into our courses through our SI Program. I will be conducting some SI training and I’ll let you know how it goes.

– Pat James, Mt. San Jacinto College

At Lone Star College Cy Fair, the Math Department and Disability Services met with our Pearson reps about this issue 2 years ago. At the time we had students with vision differences that used Screen Reader assistive technology (AT), but were unable to access MyMathLab’s content due to its use of Flash, (which, due in part to its dynamic nature, is basically undecipherable by Screen Reader software). NOTE: Screen Readers (at the moment) typically cannot read more than rudimentary math phrases aloud - at all - unless the content has been specially formatted using MathML. However, perceiving content is only half the battle. Students must also be able to manipulate data. Unless developed correctly, Flash content can also pose significant barriers to students who don’t use a mouse and/or can’t see the display.

To be fair, ALL computer-based/online content publishers and post-secondary institutions today face these challenges. Recently, many like Louisiana Tech University (LTU), have been the object of civil lawsuits and federal legal action because software like MyMathLab continues to have “…some accessibility issues.”

Speaking for my own campus, the Pearson reps we met with seemed sincerely concerned about accessibility. Pearson even went so far as to have software engineers present at the session. These folks were part of a larger national team that continues the work of re-coding MyMathLab to make it more compatible with recent versions of JAWs (mainstream Screen Reader). Although much remains to be done, Pearson has made *some* headway.
During the meeting, faculty were shown “back-end” features of MyMathLab that allow instructors to choose course content specifically marked by the software as “accessible”, (and therefore compatible with Screen Reader AT). Evidently, some colleges have even gone so far as to create entire courses/modules using this content; instructors then simply offer this as an alternative to their students who use Screen Readers.

Pearson’s above solution helps with the problem of perception, but Flash data manipulation remains a significant challenge for students asked to input complex mathematical notations using keyboard commands. Until these and other technical hurdles are overcome, I believe that colleges and universities will continue to offer “off-line” (i.e. proctored testing, alt-text) alternatives.

In the meantime, I highly suggest the University of Washington’s DO-IT faculty resource website, <http://www.washington.edu/doit/Resources/postsec.html>; <http://www.washington.edu/doit/Resources/accessdl.html>, for instructional suggestions specific to Math courses. Finally, I strongly urge everyone to help motivate the industry to author accessible (i.e. Section 508 compatible) products by asking purchasing committees/entities to continue demanding these standards from publishers. For some institutions, it may even be feasible to ask state representatives to introduce legislative measures incorporating these standards into future purchasing requirements/RFP criteria... if they haven’t already.

– Joseph M. Nast, Assistive Technology Lab Coordinator, Lone Star College Cy Fair

**FEBRUARY 2014**

**QUESTION:**

A deaf student needs to distinguish among speakers in her online Blackboard Collaborate session. What have you found successful for real-time transcription? Has anyone used <http://streamtext.net/home/applications with Collaborate>?

– Tonya B. Amankwatia, Director Distance Education and Instructional Technology, DeSales University

**RESPONSES:**

If it is captioned, the captionist should receive a list of people involved in the discussion and any materials that would help prepare for the captioning. Suggestion – captionist can distinguish speakers by voice or gender and identify them on the transcript (i.e., person 1, male speaker, female speaker, etc.) or when each person makes a comment, he or she identifies him/herself. If the session is via webcam application, the captionist may be able to visually identify speakers and indicate the speaker on the transcript.

– Pam Rea, Student Disability Services, University of Central Florida

I forwarded this question to my daughter, an ASL interpreter for Deaf. She did not have software suggestions, but sent the following suggestions. My suggestion would be to have each person identify themselves by name every time they speak. Rachel speaking.... Dave speaking....

– Barbara Illowsky, Academic Affairs Division, California Community Colleges Chancellor’s Office

**How do you help deaf students distinguish among speakers in a live online session?**

WICHE Cooperative for Educational Technologies (WCET) wcet.wiche.edu 303.541.0231 This work by WCET is licensed under Creative Commons [BY-NC-SA]

Contact wcetinfo@wiche.edu for information about WCET’s Connect, Learn, and Advance agenda, and how to join WCET.