Tips for Using UD And ICTs to Create Inclusive Learning[1]

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Adopting universal design (UD) when selecting and using ICTs can assure an engaging and accessible learning experience for the diversity of students. Read on for practical tips and techniques. I realize this article is intended to be brief.

Lea and Moodle

A student's traditional first contact with a course is course outline. A universally designed outline would include a photo introducing the instructor, and a link to a web page that provides instructions on how to use Lea or Moodle, and an invitation stating that students can speak with the instructor during office hours (in-person or virtually) about any concerns they may have with the course.

Lecture Presentations

When using presentation software, such as PowerPoint, instructors need to ensure that their presentations are accessible and inclusive by all students. This involves taking into consideration the amount of content per slide, font size, colors, contrast, and animations. A rule of thumb Adaptech recommends is seven words per line and seven lines per slide in a san serif font such as Arial. Check out this useful resource from WebAIM on how to prepare accessible PowerPoint presentations < http://webaim.org/techniques/powerpoint/ >, which includes advice such as: includes the following:

- Ensure that font size is sufficient
- Provide sufficient contrast.
- Use simple slide transitions.
- Use simple language.
- If you have embedded video, ensure that the video is captioned, and that the player controls are accessible.

To make images on slides or other digital documents accessible to students with visual impairments, alternative text, also known as "alt text," needs to be provided. Alt text is a brief, meaningful description connected with the image. In the same vein, instructors need to select videos with closed or open captioning or subtitles. Captioning can be useful not only to students with hearing impairments but also to second language students.

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[1] Adapted from Thomson, R., Fichten, C., Budd, J., Havel, A., & Asuncion, J. (2015). Blending universal design, e-learning, and information and communication technologies. In S. E. Burgstahler (Ed.), Universal design in higher education: From principles to practice (2nd ed.), pp. 275-284. Boston: Harvard Education Press.

Course Materials

Digital textbooks. While digital textbooks seem to promote accessibility in general, many academic book publishers use their own proprietary formats. This can be confusing and may restrict accessibility for certain students. Offering a choice of hardcopy textbook or the equivalent digital format provides for more inclusion.

PDF files. In certain cases, instructors have posted PDF files of multi-generation photocopies (e.g., book chapters, journal articles). When paper documents are scanned and saved as a PDF file, the text is saved as an image and cannot be selected, copied, or read by screen reading software. In order to ensure that these files are accessible they must be 'clean' versions of the material that can be put through an OCR program (Optical Character Recognition). Many academic documents are available online and can be downloaded to replace older, illegible documents. Check out this resource for further explanation of the OCR process < http://www.explainthatstuff.com/how-ocr-works.html >.

Posting course notes/PowerPoint presentations. For instructors concerned about copyright, this can be assigned through though a free license provided by Creative Commons <http://creativecommons.org>. When notes are posted online, it is a good idea to make these available online in a timely fashion in several formats (e.g., Microsoft Word and PDF).

Audio and course notes. Some schools provide lecture recording, including video and audio capture (Leadbeater, Shuttleworth, Couperthwaite, & Nightingale, 2013). Recordings are typically stored on the course web site, allowing students to review the lecture at their own preferred time and pace. This benefits all students: including those who are unable to attend class as well as those who wish to review.

Communication

Students can engage with course content by communicating with their professors and their peers, both with individuals as well as with the whole class, through tools built into Lea and Moodle. In addition, instructors can schedule virtual office hours using Skype, email, or the telephone. This can be useful to students for a variety of reasons: some students are unable to attend face-to-face office hours due to jobs, mobility issues or inclement weather. There are also students who are better able to communicate through technology.

Evaluation: Accessible and Usable

To ensure that students can optimally demonstrate their learning, diverse evaluation activities need to be offered (e.g., virtual group projects, online testing, blogs, portfolios, mind/concept mapping, discussion forums, hands-on demonstrations, online oral examinations through Skype or similar tools). In the same vein, when completing in-class essay writing, students may benefit from working on a mobile device through which can email the essay to the instructor at the end of class. The same is true of having the choice to submit assignments online through email or Moodle or Lea. This choice can remove barriers students may have delivering assignments in person. Providing a confirmation notice is helpful to ensure that both the student and instructor are aware that the electronic submission is successful and on time.

Course participation. For students who do not like or are unable to participate in traditional class discussions, course participation can be evaluated by assessing students' engagement through discussion forums or participation in class activities.

Online testing/examinations. Providing the option of completing testing online inside Moodle may be beneficial for students who are disadvantaged by paper format testing. But some aspects of online testing create barriers including: the necessity for correct spelling for fill-in-the-blank answers to be recognized as correct, errors in submission of responses which result in incomplete tests, software/hardware malfunctions, and incompatibility with screen readers and other assistive technology.

CONCLUSION

Considering the principles of universal design when selecting and using ICTs can ensure an engaging, accessible and inclusive learning experience for the diversity of students in today's classrooms.

Learn more about the Adaptech Research Network and our work at www.adaptech.org.

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UDL OnCampus http://udloncampus.cast.org/page/planning_syllabus -.VEvk81ZSk7Q