Accessibility Round Table: Adaptive Technology and Online Learning

Adaptive (or assistive) technology is any technology used by a person with a disability to compensate for the disability by changing the environment (in our case the educational environment.)

Screen Reader Users and Online Synchronous Learning:

1. A screen reader is a full audio interface intended to replace the computer monitor for students who are blind.
2. Using only a screen reader to receive information is like viewing the screen through a straw. This becomes complex when in an environment where information is dynamically changing (like a chat or a power point deck.)
3. A screen reader fills up the audio channel and competes with other audio information like a lecture that is being delivered. This can interfere with comprehension.
4. Complex environments require the user to know more advanced short cuts for efficient navigation.
5. Participation is challenging because the audio channel is full and the screen reader user needs the audio channel to participate. There are strategies that can be used to help with this like the electronic raise hand feature of many synchronous learning environments have.
6. Users with weak knowledge of how screen readers work will have a harder time with synchronous learning environments compared to advanced screen reader users.

Some keyboard commands that are useful to students using a screen reader with Bb Collaborate:

The tab key is used by JAWS to scroll through elements on the interface.

JAWS uses the D key to scroll through elements on the interface. (This actually goes to the next different element.)

JAWS uses the ; key to scroll through ARIA landmarks on a web page (which will let a student toggle between the big sections of Bb Collaborate.

JAWS uses the R key to scroll through the regions of a web page. (This is a good way to get to the white board in Bb Collaborate.)

JAWS uses the B key to scroll through buttons on the interface.

Insert F3 will bring up multiple element lists on the current interface.

Alt H is a Bb Collaborate shortcut for electronically raising ones hand.

Link to Bb Collaborate Ultra Accessibility page:
https://help.blackboard.com/Collaborate/Ultra/Participant/Accessibility

Suggestions for Screen Reader Users in Synchronous Learning Environments:

1. Student should get the power point presentation (or lecture notes) before the lecture for review (this will reduce the need for the student to follow the presentation while listening to the lecture.)
2. It is helpful if the lecturer can make themselves available after lecture for 1 to 1 questions and clarifications. (this could be office hours or dedicated time for a specific student depending on the student's needs.)
3. It may be necessary for alternatives for participation (especially if marked) to be arranged.
4. If possible lecture should be recorded for asynchronous learning.

   For the Lecture Delivery
5. Any graphics, graphs or charts on slides should be described by the lecturer.
6. In the online lecture it is important that the lecturer share the power point file and not their computer screen running the presentation (particularly in Bb Collaborate.)
7. The lecturer should avoid drawing on the white board. If drawing on the white board is necessary, the same information in an alternative format should be provided (in advance.)
8. Ideally the lecturer should make time for additional examples and descriptions (or alternatively a slower lecture pace could be considered.)

   For Group Work
9. Making asynchronous participation / contribution possible is helpful.
10. Ensuring that all members of the group are able to participate in all synchronous components of work is important. (Using the e-raise the hand feature and calling on each member one at a time can be useful.)

Closed Captioning of Lecture Material

Closed captioning is the representation of information given in the audio channel as visual information on the screen (usually text.)

Captioning of Asynchronous Lectures:

Microsoft Stream is a part of Office 365 and allows a user to add automatically generated captions to a pre-recorded video.

Captioning (real time captioning) of Synchronous Lectures:

Students who have profound to severe hearing impairments are eligible to have real time captioning (which involves a person and is very accurate) put in place for their lectures. Accessibility Services funds this service. A Professor will need to add the captioner as a member of the class, so they can access the lecture. Students who have real time captioning in their online lecture would also be receiving real time caption in in person lectures. Verbit (verbit.ai) is an example of a service that provides real time captioning.

Captioning (computer generated or automatic) of Synchronous Lectures:

Many groups of students benefit from automatic captions (including students with mild hearing impairments; some students with a learning disability; some students with a head injury; students who have sensitivity to sound and needs to keep volume low; as well as student who prefer captions – these students might turn on closed captions when they watch a movie.)

Automatic captions (computer generated) are not as accurate as captions generated by a person. Accuracy can be as low as %80. Students who benefit from this type of service use their hearing to correct mistakes made by the computer.

MS Teams and MS Power Point can generate automatic captions and they are available to staff and students through MS Office 365.

There are a few additional services which can provide automatic cations for a price. These include Streamer (streamer.center); Otter (otter.ai); Rev (rev.com).

Reading Disabilities and Online Learning

A reading disability can be created by a learning disability or acquired head injury or a vision disability or in some cases a mental health disability.

The most common adaptive technology used by a student with a reading disability is Kurzweil 3000. U of T Accessibility Services owns a license of Kurzweil 3000, which means we can give students with reading disabilities access to this reading software.

It is very helpful if the readings in a course are accessible when they are distributed to the class. At a basic level this means that the text is real electronic text (as opposed to a picture of text from a scan.) To be completely accessible a reading would need to be tagged (in practice this means that the file contains meta information that identifies titles/headings, alternative text for images, table headers and structure.)