

Online teaching in emergencies: accessibility best practices

Note 1: Although digital accessibility is established by law to benefit individuals with disabilities, in practice it has implications for a much wider audience, including individuals who speak English as an additional language, individuals with limited prior technology experience, individuals with older technologies or limited Internet access, individuals juggling education with childcare or elder care, etc.

Note 2: Not all postsecondary institutions will have the same level of resources. We encourage everyone to do as much as possible on a reasonable timeline. We also encourage you to communicate with your disability services office, your Information Technology office, and other relevant offices to see what accessibility resources specific to your campus have been provided.

Note 3: We understand that disabled faculty and staff may also be affected, and have included as much relevant information as possible.

Note 4: The information in this document tends to fall in the “Keep Teaching” category addressed to faculty/staff. As of this writing, there are also starting to be some “Keep Learning” that will have relevance for disabled students:

- [Keep Learning at Iowa](#) (University of Iowa)
- [“Keep Learning”](#) (University of Nebraska)
- [Adjusting Your Study Habits](#) (University of Michigan)
- [Guide](#) (University of Kansas)
- [Learning Remotely](#) (Tufts)

We will post more as available.

Note 5: Comments and additions are deeply appreciated, and questions are welcome. (Contact info forthcoming)

Accessibility of instructional delivery methods

- Provide an accessibility statement in all class syllabi. [Rutgers](#) has a good model.
- Not all video conferencing systems have the same level of accessibility. When considering accessibility, it is necessary to consider the following at a minimum:
 - Can frequently used and important features be accessed without requiring mouse use?
 - Will navigational elements (e.g., buttons) be read by screen readers?
 - Can chat messages and other interactive text be read by screen readers? Will screen reader users be notified when new chat messages appear?

- Can the system be used to provide captioning? Can the captions be saved as a transcript?
- Here is guidance on some of the most popular video conferencing systems:
 - Bluejeans
 - Has made significant recent improvements, but can still pose accessibility problems. A list of problems and solutions or work-arounds is available at [Bluejeans Accessibility](#) (University of Michigan).
 - [Bluejeans Support: Accessibility Features](#)
 - Zoom
 - Anecdotally considered to be the most accessible videoconferencing system currently available
 - [Zoom: Accessibility](#)
 - [Getting Started with Closed Captioning](#)
 - “Zoom recordings can be uploaded to YouTube and automatically captioned. Captions will not be 100% accurate but it is a good starting point. To upload to YouTube, you will need to create a YouTube channel. For instructions, visit [Create a New Channel](#).”¹
 - Blackboard Collaborate
 - [Accessibility in Blackboard Collaborate](#)
 - Google Hangouts
 - [Hangouts Meet accessibility](#)
 - [Use Hangouts with a screen reader](#)
 - [Accessible Google Hangouts](#) (University of Minnesota)
- Not all learning management systems (LMS) have the same level of accessibility. It is important to ensure that all features, including those that will be used exclusively by faculty or staff, are accessible. Because some of the onus for accessibility will be on the person creating the class, LMSs should also provide them with accessibility guidance.
- Tools are available to check the accessibility of content as it is posted. These include [Ally](#) (works with multiple LMSs) and [UDOIT](#) (Canvas only). Since these can take some time to fully implement, they may be better considered as part of a long-term accessibility plan rather than as part of emergency measures.
- Here is guidance on some of the most popular systems:
 - Canvas
 - [Canvas Accessibility](#) (University of Michigan; under active revision)
 - [Generating Captions with Canvas Studio](#) (RMIT University)
 - [Creating Accessible Content in Canvas](#) (Emerson College)
 - [Canvas Accessibility Considerations](#) (University of Nebraska-Omaha)
 - Blackboard Learn

¹ California State University, Northridge [Keep Teaching--Accessibility](#)

- [Accessibility Features in Blackboard Learn](#)
- [Design Accessible Content](#)
- Moodle
 - [Moodle Accessibility](#)
 - [Accessible Course Design](#)

Accessibility of synchronous (real-time) classes

- Disabled students may not be able to participate at a fast pace online; e.g., their assistive technology or CART (text transcription provider) may require some time to communicate the information. Fast paced classes may also be problematic for students who speak English as an additional language, students in areas with slow WiFi, etc. Consider pacing your instruction accordingly and check in with students about how your pacing is working.
- “Encourage all students to self-identify (“Hi, this is ___ speaking”) as they begin comments to make clear who has the floor.”² [Editor’s note: This is particularly helpful to blind students and to captioning efforts.]
- “When looking for and selecting multimedia for a course, choose videos that are already accurately captioned whenever possible. Note that “machine” (or automatic) captioning, which is now available in YouTube, Zoom, and Kaltura, is generally only about 80% accurate. We want to aim for 99% accuracy of captions. When recording audio or video for your course, develop a script. It can be posted alongside the media as a transcript, and can also help you to create a better recording.”³
- “You may consider assigning a student to take notes for the class in Google docs or similar platforms. This will help others focus while one person documents what was said.”⁴ “If you have someone designated to take notes (an accessibility best practice), you can enable closed captions, which allows your notetaker to transcribe what’s being said in real time.”⁵
- “Do not penalize students for spelling or grammatical mistakes. The extra cognitive load of so much typing (or text production via voice transcription technology) may make things difficult for them.”⁶

² Aimi Hamraie, [Accessible Teaching in the Time of COVID-19](#)

³ Oregon State University, [Quick Reference: Accessibility Tips for Online Content](#)

⁴ Aimi Hamraie, [Accessible Teaching in the Time of COVID-19](#)

⁵ University of Minnesota, [Zoom: Teach Online Class Sessions](#)

⁶ *Ibid.*

- “For certain needs, efforts such as working in small groups or pairs, note-sharing can also help. Note that synchronous lectures may require different support services than asynchronous lectures.”⁷
- “Don’t assume that all students can see or make the same sense of your visual display as you intend. For accessibility, get in the habit of describing whatever is happening visually on the screen. If you are showing a picture of bunnies while talking about animal testing, say, ‘Here is a picture of bunnies, which are often used as the subject of animal testing particularly in the cosmetics industry.’ By the same token, get in the habit of being verbally explicit, especially while walking students through a screen demonstration. Because students use different devices, we recommend against using directional language in this context. It’s better to say “the arrow-shaped icon that says Share; it’s between Polling and Chat”. And remember that students access the Zoom interface from different kinds of devices, including mobile phones, tablets and laptops, so your verbal descriptions should account for those differences.”⁸
- “An important difference when teaching online instead of face-to-face is that you can no longer rely on being in the same place at the same time to convey important information. It is essential that you stay in close communication with your students about changes to the course, and it is recommended that you use multiple modes of communication to ensure that all students are receiving all pieces of information. Using a combination of email, Canvas announcements, and Canvas Inbox will allow you to create a sense of continuity from the classroom to the virtual world. Record your session so students who aren’t able to join in real time can watch it later.”⁹
- Resources:
 - [Adapting Your Subject Content for Online Classes](#) (University of Technology Sydney)
 - [20 Tips for Teaching an Accessible Online Course](#) (University of Washington)

Accessibility of asynchronous (self-paced) classes

- Asynchronous teaching, by its nature, is likely to be accessible to more individuals: Assistive technology users don’t have to worry about keeping up with the pace of the rest of the class, users who benefit from reviewing information multiple times will be able to easily do so, and users who have access to slower WiFi won’t be left out. However, it

⁷ University of Georgia, [Technology for Teaching and Learning Continuity](#)

⁸ University of Minnesota, [Zoom: Teach Online Class Sessions](#)

⁹ Jason Buzzell, University of Nebraska-Lincoln, personal communication

will still have the same requirements for accessible accompanying materials, captioning, etc. as synchronous classes.

- Resources:
 - [Creating Inclusive Learning Video](#) (RMIT University)

Accessibility of websites and documents

- HTML tends to be the most accessible format, followed by word processing formats such as Microsoft Word..Relying on PDFs could pose barriers, as they often require workarounds to make documents accessible. Two easy workarounds for improving the accessibility of PDF creation are:
 - If you are scanning a hard copy article into a PDF format, make sure that you are using an optical character recognition (OCR) program such as [ABBY FineReader](#) or [Omnipage](#) instead of scanning documents as images.
 - If you use Word or a similar word processor to create a PDF, post both versions online.
- “When saving your file, give it a meaningful name. “Lecture Notes” or “Chapter 1” does not give students enough information. A better example would be “Lecture Notes, Chapter 1.”¹⁰ [Editor’s note: Also use the Title attribute to provide meaningful names to websites.]
- “Accessibility Quick Tips on webaccess as you create online course materials to ensure inclusive learning experiences:
 - **Text Contrast:** Use black text on a white background to ensure that the text stands out on the page. [Editor’s note: Pure white backgrounds may cause problems with glare or distraction for some students. Consider using off-white or light grey backgrounds instead.]
 - **Text Styles:** Do not use color alone to denote differences in emphasis and content meaning. [Editor’s note: This also applies to some graphic elements, such as charts. See [Use of Color](#) (WebAIM) and [Color Contrast](#) (WebAIM)]
 - **Heading Styles:** Use built-in heading styles to designate content organization. [Editor’s note: Ensure that headings are used to create a hierarchy, not just for formatting. See [Using Headings for Content Structure](#) (WebAIM)]
 - **List Styles:** Use the built-in bullet or number styles for lists.
 - **Alt Text:** Provide a brief text alternative for images, graphs, and charts that answers the question: Why is this image important? [See [Alternative Text](#) (WebAIM) and [Creating Good ALT-Text](#) (RMIT University)]

¹⁰ Oregon State University, [Quick Reference: Accessibility Tips for Online Content](#)

- **Closed Captioning:** Captioning your media provides greater student comprehension of the material covered and provides accessible media for individuals with hearing impairments in compliance with federal regulations.
- **Link Text:** Use descriptive titles for link text, titles, and headers. [See [Link Text](#) (WebAIM)]
- **Tables:** Use simple tables when possible, with column and row headers [See [Data Tables](#) (WebAIM)]¹¹
- **Additional Resources:**
 - [Accessibility 101: Accessibility and Online Instruction](#) (University of Iowa)--excellent resource that covers Word, PowerPoint, etc.
 - [DIY IT Accessibility. Six Essential Steps](#) (University of Maryland)
 - [Web-Based Course Content Access Checklist](#) (University of Maryland)
 - [Faculty Toolkit for Web Accessibility](#) (Brandeis University)
 - [Creating Accessible Digital Materials](#) (Middlebury College).
 - [Accessibility](#) (RMIT University)
 - [PowerPoint Accessibility](#) (RMIT University)
 - [Accessibility](#) (Seattle Pacific University)
 - [Webcourses Accessibility/UDL Guide](#) (University of Central Florida)

Testing

- Extended time is a frequently approved accommodation, and instructors should be prepared to explore strategies for providing this. (Note that an extended time accommodation is not the same as providing more time for all students; it means that the accommodated student should get an additional percentage of time above whatever other students are getting. For example, the standard test time might be one hour and an approved student gets time-and-a-half, or 1.5 hours. If the test is expanded to two hours, the accommodated student would then get three hours.)
 - Guidance on how to do this in Canvas is provided at [“Once I publish a timed quiz, how can I give my students extra time?”](#) (University of Washington)
- “Breaks from class during exams” is an accommodation that may have online, timed implications. A student may have extended time or they may have extended time plus “breaks” or class time plus “breaks”. Can an online, timed test have the ability to be stopped and restarted to account for needed breaks? “If

¹¹ Michigan State University,
<https://tech.msu.edu/about/guidelines-policies/keep-teaching-guide-to-moving-classes-online/>

your student has breaks during exams, add in their total break time to their exam, if there is no way for the student to stop and start.”¹²

- “Once a Quiz is published [in Canvas], there is also a feature enabling you to provide extra time and other accommodations that might be in place for specific students via Student Accessibility Services.”¹³
- “Tests and quizzes should be easy to set up in your university’s course management software. Turning in papers online should also be built-in. Consider the energy it will take to grade papers or use a screen for a long time. If necessary, adjust assignments to prevent fatigue.”¹⁴
- It is important to let your students know how questions to instructors should be addressed during an online quiz/test.

Flexibility

- “If you move your class online with short notice, be aware that some students may need some time to work with their disability service coordinator and the Assistive Technology and Accessibility Centers (ATAC) to make adjustments to their accommodations. Be flexible and adjust deadlines and strategies to create an inclusive learning environment. Students with diagnoses such as Autism or anxiety may not adjust well to abrupt changes, making flexibility even more important.”¹⁵
- Be aware that some students may be unable to access their technology during this time; e.g. if they are dependent on attendant care to get out of bed, turn on the computer, etc., their attendants may also be affected by the emergency. Other students with certain types of disabilities (low vision, migraines, seizure disorders, etc.) may not be able to spend extended time in front of a computer. Determine and provide a reasonable extended timeline for completing the work.
 - Lauren Cagle from the University of Kentucky has created a useful [survey](#) for learning about students’ accessibility and other issues that may affect online learning.
 - “Consider reducing screen time for folks who get migraines or have other issues (I ration my screen time to 1-2 hours per day max). Making text available for printing out, or making it possible to participate in Zoom calls with voice only and no image can help reduce problems.”¹⁶
- “Please do: Reach out individually to students who were attending on-campus

¹² University of Washington, [Disability Resources for Students COVID-19 FAQs](#)

¹³ Dartmouth University, [Academic Continuity During Disruption](#)

¹⁴ Aimi Hamraie, [Accessible Teaching in the Time of COVID-19](#)

¹⁵ Indiana University, [Accessibility Quick Tips](#)

¹⁶ Aimi Hamraie on Twitter, <https://twitter.com/AimiHamraie/status/1237057301204197377>

classes but are missing virtual classes. This may be a sign they are experiencing accessibility or other challenges.”¹⁷

- “Instructors may also wish to think creatively about the assignment itself, through an approach that may not be intensively digital. For example, an assessment that relies on face-to-face interaction (e.g., discussion, presentations, debates) might be re-tooled or potentially substituted with an assignment in a different format that meets the same course objectives. One example of this type of adjustment includes asking students to write a pro/con issue comparison memo, in lieu of participating in a classroom debate.”¹⁸
- **“Keep things accessible & mobile friendly:** In a crisis, many students may only have a mobile device available, so make sure you are using mobile-friendly formats including PDFs and [Canvas Pages](#). Consider saving other files in two formats, it’s original application format and a PDF. PDFs are easier to read on phones and tablets and keep the file size small, and original file format often have application features that are helpful to students who use accessibility software for accessibility reasons. Also note that videos take lots of bandwidth, so only require them if you are confident students will have access to them during the current situation.”¹⁹
- Please be aware that student accommodation needs may change with different modalities of instruction and that we must be responsive to the needs of students with disabilities. Work with the Disability Services Organization (DSO) for your organization if you have questions about student accommodations.
- As we make shifts to teaching and learning online, we must recognize that this is a shift for instructors and students. As needs arise, units should be responsive to students and instructors with disabilities and should consult with their DSO and Accessibility Program Office (APO) with concerns and questions on the matter of online teaching and accessibility. An important aspect of shifts in pedagogy, technology, or content is being receptive to the needs of community members with disabilities.

¹⁷ Arizona State University, [Teaching remotely at ASU](#)

¹⁸ Brown University, [Teaching Continuity Guide](#)

¹⁹ Stanford University, [Teach Anywhere](#)

Emotional support

- “Build in elements of pleasure and connection to counteract social isolation. Begin class by asking how everyone is doing. Encourage them to check in on each other.”²⁰
- “Please do: Ask your student how you can help them during the transition. Students may have additional challenges that can amplify during times of stress or uncertainty. Be helpful and direct them to advising, counseling, or any other student support services if needed.”²¹
- “Please do not:
 - “Engage in private consultation with individual students (i.e. messaging or chat functions) that you would not extend to all students who seek your support.
 - “Ignore expressed student needs (i.e. advising, counseling services, financial aid, etc.) that fall outside your immediate duties as a teacher.”²²
- Resources:
 - [Creating Community and Connection](#) (University of Technology Sydney--created for international students but has many applications for disabled students)

²⁰ Aimi Hamraie on Twitter, <https://twitter.com/AimiHamraie/status/1237057301204197377>

²¹ Arizona State University, [Teaching remotely at ASU](#)

²² *Ibid.*