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Mastering Accessibility: Tips and Tricks

This video demonstrates some accessibility tips and tricks using Mastering and the NVDA screen reader. I'm Sarah Smith. I had a profound speech defect until my mid-teens, and accessibility is one of my favorite topics.

In this video we're concentrating on visualization issues and screen readers, which can be especially unfamiliar and challenging. But "accessibility" covers many situations. A student with accessibility needs is just a student who learns differently, using different presentations of materials, and everyone's different.

Most "blind" students, for instance, actually have some vision, so one student may decide to read a graph with a magnifier; another may use a screen reader; others may adjust color or screen brightness. Students may need extra time on an assignment, or may read captions as they watch a video, or use a stick input device or voice input instead of a keyboard. But they're students and you're a teacher, and that's the bottom line.

How do you teach them? Your students are your best resource. Talk with them early and often. Before the semester starts, get together with them and ask the questions that help you teach anyone. What are their strengths as a student? How do they learn? Figure out with them how you'll work together and where the pain points might be.

As the course continues, keep checking in with each other. You and your students won't have thought of everything.

Be aware that some students in your course may have learning needs they haven't recognized, or don't want to talk about. Students for whom English is a second language may have analogous needs. And some students just need to learn in their own way. You can ask about this, respectfully. What you learn about teaching accessibly from them helps everyone else learn too.

Gear and Resources

Some students use specialized software and hardware, tablets, or phone apps. Find out what they use and get them to demonstrate. This is fun and eye-opening and can give you teaching ideas that help everyone.

As you present material to students, use multiple channels of communication to improve learning for everyone. For instance, one student may need 3D printed visualizations of an atom, but most students can learn from them. If you always think about presenting through multiple channels, you'll be far on the road to teaching accessibly.

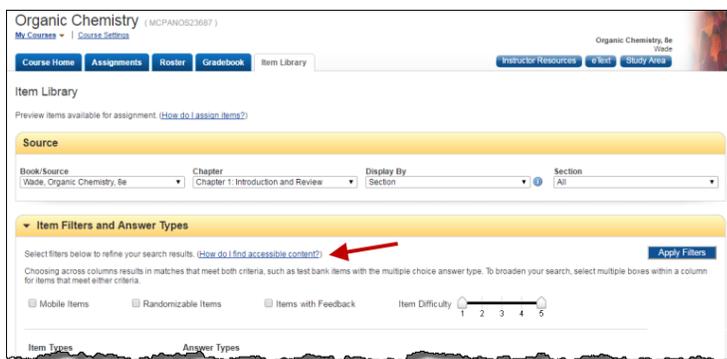
Your university accessibility office is a great resource. For instance, they may be able to print out 3D visualizations and help you find 3D materials online.

In addition, each Pearson product has its own accessibility guidelines and resources. You can find Mastering's on the Support site by searching for the article "Mastering ADA and Section 508 Accessibility".

<https://support.pearson.com>

Choosing Content

What CONTENT to use depends on how your students learn. "Finding Accessible Content", available in the Item Library, lists general guidelines. Check this article whenever you need it; we are adding to the list of accessible answer types all the time.



The goal is never to limit content to what you think your student can learn. All students deserve the full experience. Talk with your students when you think they might need a study buddy or additional time or help from you. Decide if you need to make any substitutions, but make as few as possible. Our most complex and rewarding answer types can be the ones where students may need help, but don't shortchange your students by avoiding them.

Here are a few things to notice when you're choosing content you think your students can work by themselves.

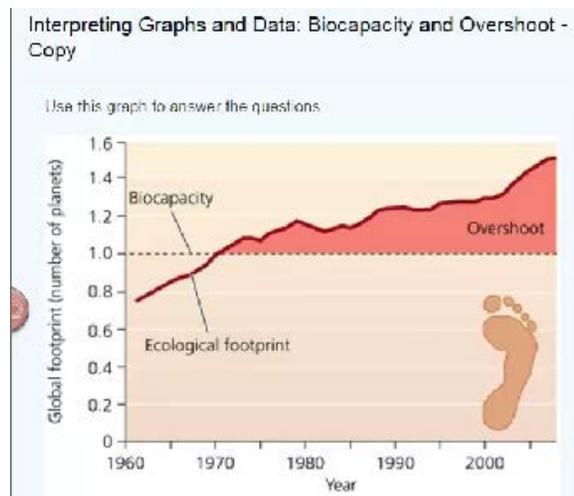
For example, here's an image and its alt-text:



Element B is centered, with two electron dots above, one to each side, and one below. On the left and right of B are atoms of A, each with one electron dot between A and B. Below is an atom of A, with an electron dot above it, also between A and B.

The text describes a visual representation of electron pairs. This works well for a low-vision student who uses visual representation. But a fully blind student will learn more from a conceptual description.

Here's another example. In this case, what looks like good content actually isn't good for anyone. A student is answering a question that contains a graph. She's fully blind, so instead of looking at the graph, she reads alt-text.



A line graph showing how our global footprint (on y axis) has increased over time (x axis). The ecological footprint graph line shows an irregular but steady increase over time. It starts at 0.75 planets in 1962 and reaches biocapacity, which is 1.0 planets, in 1970. By 2007 it has reached 1.5 planets.

There's a catch here. The purpose of this item is to teach any student how to read a graph.

But this student isn't reading a graph; she's reading alt-text. You both already know she can read...so she may not be learning anything useful about graphs. Moreover, any student can use the same alt-text to understand what the graph means. So no one's learning to read graphs!

Accessibility issues can be subtle. Here a student--same student, still fully blind--is listening to answer instructions that tell her to submit two answers.

Listen to how the screen reader reads "Which *two* statements are supported by the data in the graph?"

Screen readers don't know how to stress formatted text. Here the visual text stresses "two" but the audial text doesn't. The student might not hear "two" and she might submit three choices—as she did.

This item is theoretically accessible and usable, but it'd be better without the reliance on formatting. Using Contact the Publisher, we asked the publisher to change the item so that the text tells the student to submit two choices.

Giving Feedback

When one of your students discovers an accessibility issue with an item you've assigned, have them report the question to you. Use Contact the Publisher, then replace the item with its updated version. To save time, you may choose to make a personal copy of the question and edit it for your student; if so, we'd be glad to hear what you did.

For other issues, you can ask questions via email at disability.support@pearson.com

Trying It for Yourself

We urge you to try out a screen reader. In this demo we've used NVDA. It's a Windows screen reader with a big market share. It's designed by blind programmers to work over a large range of content and in many languages, it's easy to learn, and it's free. You can get it at www.nvaccess.org. A screen-readable list of its basic commands is attached to this page.

On the same page, we've also included a list of selected open-source scientific teaching resources.

If you have a specific accessibility issue you'd like to get help on, please reach out to your sales representative.

For more demonstrations of a screen reader in action, see the accompanying videos.

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