



## Blackboard Best Practices: Making Course Content Available to Students with Disabilities

### Introduction

The personal computer holds the potential of providing a more level learning space than ever before for students and professionals with disabilities. Digital information is largely display independent, and can be output in different modes to meet the different needs of individuals with disabilities. However, the wrong design choices by content providers can also create new and needless barriers to their material.

Blackboard has designed its interface to conform to the Federal Section 508 Web accessibility standards. There are two primary resources that guide content providers on Web accessibility: Federal Section 508 standards and the Web Accessibility Initiative (WAI), guidelines and quick tips. The standards and quick tips are quoted here with pointers to those items that content providers will most likely need to use.

While most of what providers need to know relates to Web design, this document also contains information on providing accessible documents, PowerPoint presentations and to spreadsheets, all of which may be displayed in Blackboard.

### Web Accessibility Basics

Faculty and instructional technology course providers using HTML to develop content will need to be familiar with both Section 508 and the WAI guidelines and tips. Those using less technical formats may only need to know a few Web accessibility features.

- First and foremost, use a format that is simple and easy to understand. Use text that is easy to read, and employ good contrast between the foreground and background.
- If using images, refer to Section 508 A and WAI tip 1.
- If using colors, refer to Section 508 D.
- If using tables and/or columns, refer to Section 508 G and H and WAI tip 9.
- If using graphs or charts, provide a text summary of the content as suggested in WAI tip 6.

When using technical content, complex graphics, maps or other material that is difficult to make accessible online, be aware that you may need to produce hard copy Braille or tactile graphics in advance, and sending the items to the student by mail.

#### **Section 508 Standards**

- a. A text equivalent for every non-text element shall be provided (e.g., via “alt”, “longdesc”, or in element content).
- b. Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.
- c. Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.
- d. Documents shall be organized so they are readable without requiring an associated style sheet.
- e. Redundant text links shall be provided for each active region of a server-side image map.
- f. Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.
- g. Row and column headers shall be identified for data tables.
- h. Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.
- i. Frames shall be titled with text that facilitates frame identification and navigation.
- j. Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

- k. A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.
- l. When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.
- m. When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).
- n. When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.
- o. A method shall be provided that permits users to skip repetitive navigation links.
- p. When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

### **WAI Quick Tips**

1. Images & animations. Use the alt attribute to describe the function of each visual.
2. Image maps. Use client-side MAP and text for hotspots.
3. Multimedia. Provide captioning and transcripts of audio, and descriptions of video.
4. Hypertext links. Use text that makes sense when read out of context. For example, avoid "click here."
5. Page organization. Use headings, lists, and consistent structure. Use CSS for layout and style where possible.
6. Graphs & charts. Summarize or use the longdesc attribute.
7. Scripts, applets, & plug-ins. Provide alternative content in case active features are inaccessible or unsupported.
8. Frames. Use NOFRAMES and meaningful titles.
9. Tables. Make line by line reading sensible. Summarize.
10. Check your work. Validate. Use tools, checklist, and guidelines at: [www.w3.org/TR/WAI-WEBCONTENT](http://www.w3.org/TR/WAI-WEBCONTENT).

## **Tips for Working with Documents**

Avoid using multiple columns. Screen reader software normally reads across the entire display left to right thereby jumbling columnized content. Avoid small print. Leaving a blank line between paragraphs or sections is useful. However, leaving many blank lines between sections may make the user think the end of the document has been reached when it is only a break. If you include graphics, include a title and some description.

## **Tips for Working with PowerPoint**

Use clear text and good color contrast to help users with limited vision or with visual processing disorders. If you include an image, input a text label for that image via the Image Properties option.

Because students who are blind may not access PowerPoint (depending on the screen reader they use), you may wish to save the slide outline as text. You can save the outline as text via either the "Save As" or "Export" feature. Be sure to review the resulting file to confirm that it conveys your content. Inserting blank lines in that document between each slide will also be helpful.

If you plan to publish your PowerPoint to the Web, try using the PowerPoint accessibility plug-in at <http://www.rehab.uiuc.edu/office/>. Unfortunately, the plug-in can be quirky and takes time to use effectively. It is under constant development, and you should periodically check for updates.

## Tips for Working with Spreadsheets

A spreadsheet that is complex will be confusing for anyone, but can be even more so for users with disabilities. Make it as simple and clear as possible; students with visual or cognitive processing disabilities work better with simple formats.

You can help your visually impaired users by denoting which row and column contains vital header information; this simple communication can simplify initial exploration of the document and facilitate understanding. Remember, a screen reader will “speak” the information from a spreadsheet in a single cell at a time, and exploring a spreadsheet for an initial overview can be frustrating.

## About This Tip Sheet

This material has been provided for Blackboard by **EASI** (Equal Access to Software and Information), which provides month-long, instructor-led, interactive online courses on accessible information technology: <http://www.rit.edu/~easi>

- Barrier-free Information Technology,
- Beginner Barrier-free Web Design,
- Advanced Barrier-free Web Design,
- Barrier-free E-learning,
- Accessible Internet Multimedia,
- Learning Disabilities and Information Technology,
- Business Benefits of Accessible Information Technology Design,
- Train the Trainer.

For additional information...

Norman Coombs EASI CEO [nrcgsh@rit.edu](mailto:nrcgsh@rit.edu)

Dick Banks EASI CTO [dick@easi.cc](mailto:dick@easi.cc)

## Education Opportunities

Blackboard Learning Services offers comprehensive classroom training programs and educational materials for the *Blackboard Learning System* and *Blackboard Portal System*<sup>™</sup> products. For more information about how Blackboard Learning Services can serve your institution’s training needs through on-site events, synchronous WebEx seminars, or via our Certified Education Center partners, please contact your Account Manager at Blackboard or visit the online [Training Center](http://behind.blackboard.com) at <http://behind.blackboard.com>.

For more information about the Blackboard e-Education Suite<sup>™</sup> of applications, please visit the [Blackboard](http://www.blackboard.com) Web site at <http://www.blackboard.com>.



Copyright © 2003 by Blackboard Inc.

All rights reserved. No part of the contents of this tutorial may be reproduced or transmitted in any form or by any means without the written permission of the publisher, Blackboard Inc.