

# CREATING ACCESSIBLE PRESENTATIONS

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## **ABSTRACT**

This document provides an overview of the accessibility challenges inherent in classroom presentation applications and tools, with a discussion on guidelines and strategies needed to accommodate students with disabilities when designing and presenting materials.

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## **INTRODUCTION**

PowerPoint is a widely used academic tool, and provides faculty with a straightforward way of presenting and preserving lecture information. This convenience comes with a hidden cost, however - the end product is often inaccessible to students with disabilities, or anyone trying to access the material from mobile devices or legacy platforms.

Ensuring that content can be viewed by all is a critical concern, and PowerPoint is not well suited for this task. The built-in conversion tools that allow PowerPoint to be published on the Web are clumsy and inexact. Happily, a wide variety of alternate tools and techniques exist for making and sharing presentations.

The most obvious and fruitful avenue of exploration is the World Wide Web, where well-established standards (HTML, XHTML, and CSS) provide a lingua franca for an already well developed visual presentation medium. Numerous tools exist, both for porting PowerPoint content to the Web and developing stand-alone Web presentations. Among the latter are Eric Meyer's S5 (using CSS almost exclusively) and Philip Greenspun's Wimpypoint, which is a direct response to PowerPoint's "bloatware". Applications also exist, including CourseGenie and LecShare, to convert Microsoft Word documents into standards-compliant HTML.

### **Microsoft PowerPoint**

<http://office.microsoft.com/>

### **PowerPoint viewer**

<http://www.microsoft.com/downloads/>

## **ACCESSIBILITY ISSUES WITH POWERPOINT**

Common accessibility problems associated with PowerPoint presentations:

- \* Images (graphics, figures, flow-charts) are not accessible via assistive technologies.
- \* Unstructured text renders content inaccessible.
- \* Design flexibility leads to poor usability, with low contrast, inappropriate sizing of elements, and other accessibility ramifications.
- \* Multimedia elements are often, and easily, incorporated without alternate formats.
- \* Web conversion is difficult and imprecise

## **ACCESSIBILITY ISSUES WITH INTEROPERABILITY**

Centra and other synchronous tools interoperate with PowerPoint, but do so primitively - the content is often simply a static screen-grab image of the original presentation, functionally inaccessible. Similarly, Microsoft's PowerPoint Viewer does not provide the end user with the

tools to manipulate the underlying presentation if they choose to modify it to meet their accessibility needs.

As a stand-alone application, PowerPoint also suffers from portability issues. The presentation typically resides on a local machine, and the display relies on specific hardware and software configurations. When contrasted with the ubiquity and ease of use of the Web, it becomes even less attractive.

## ***SOLUTIONS WITHIN POWERPOINT***

Limiting design elements and providing alternative formats for otherwise-inaccessible objects can allow designers to use PowerPoint accessibly. However, once the application is "stripped down" to make this feasible, other possibilities become more viable.

We believe that the restrictions placed on a designer by using the Web, rather than PowerPoint's rich and dynamic interface, are beneficial rather than harmful. The Web is a logical, semantically-precise medium, and working within its confines forces the designer to clearly organize and present his or her material. The end result may be less visually exciting (although this is far from a given), but the content will likely take precedence as it should.

## ***HTML AND CSS***

Standards-based solutions are a logical and effective departure from PowerPoint. The majority of PowerPoint's functionality can be effectively replicated on the Web, and those items that cannot are no great loss from an instructional design perspective. In the presentation we'll discuss these tools and applications in detail:

### **S5**

<http://www.meyerweb.com/eric/tools/s5/>

Developed as a Web-based slide-show alternative, S5 is built exclusively with XHTML, CSS, and JavaScript. It is easy to mark up presentations, and the final product degrades gracefully in browsers lacking CSS, JavaScript, or both. As a simple, standards-driven solution, S5 is an excellent tool, and its Web-based nature makes it both portable and efficient. S5 requires the author or developer to be comfortable editing HTML, since the "presentation" is contained within a single HTML file using CSS to provide the look and feel of a slide show.

### **Wimpypoint**

<http://philip.greenspun.com/wp/>

Wimpypoint was developed as a free, database-driven Web alternative to PowerPoint. It uses a set of very basic HTML tools to allow content authoring, and leverages the Web's capacity for easy collaboration. Although it lacks many of PowerPoint's advanced features, those are precisely the features that frequently cause accessibility problems in the first place.

### **CITA's HTML converter**

<http://cita.rehab.uiuc.edu/software/office/>

CITA, at the University of Illinois Urbana-Champaign, provides an alternative to the less-than-perfect Web publishing features built into Microsoft Office. The markup it generates is designed to exceed Section 508 and W3C WCAG 1.0 AA disability standards, and it validates to HTML 4.01 loose and current CSS standards. A note on this product: It cannot convert PowerPoint scripts, so some additional work is necessary if you need to include scripts. We'd suggest that this is largely unnecessary, and that, as a rule, simpler is better.

## ***TOOLS FOR SALE***

### **CourseGenie**

<http://www.coursegenie.com/info.htm>

CourseGenie is a product developed in the UK that is designed to convert Microsoft Word documents into accessible HTML. It does a good job and meets a variety of standards, including SENDA, WCAG AAA, and Section 508. It has presentation possibilities, although it is not intended as a PowerPoint competitor. Key advantages are the Web platform and ease of use. CourseGenie's key disadvantage is that it is a closed-source product that requires purchase and licensing to use.

### **Lecshare**

<http://www.lecshare.com/index.htm>

Lecshare is a cross-platform application designed to create accessible Web pages from Microsoft PowerPoint that meet Section 508 standards and WAI's guidelines. You can also use it to create Microsoft Word documents that contain images of PowerPoint slides for taking notes on a computer.

### **Ppt2html**

<http://www.rdpslides.com/pptools/ppt2html/index.html>

Pphtml is a PowerPoint-to-HTML conversion application that has an accessibility compliance focus and batch conversion capability.

## ***FREE TOOLS***

### **W3C slidemaker**

<http://dev.w3.org/cvsweb/slidemaker/>  
<http://www.w3.org/Talks/Tools/slidemaker.zip>

The W3C Slidemaker is a PERL script that can be used to generate HTML slides, using CSS that can be easily overridden by the end user. While there is a learning curve associated with this free tool, it is widely used internally by the W3C staff and is a simple and effective Web presentation option.

### **OpenOffice Impress**

<http://www.openoffice.org/>

OpenOffice is an open source competitor to the Microsoft Office suite, and includes a presentation application similar to PowerPoint.

As a suite, OpenOffice uses the Sun Java Access Bridge for Windows to provide a modicum of accessibility. OpenOffice interoperates with ZoomText 7.11+ as well as several open source accessibility tools, including Gnopernicus and the Gnome On-screen Keyboard. While not completely accessible, OpenOffice offers a competitive presentation solution that is still developing. As OpenOffice begins to integrate the MSAA API, accessibility should continue to improve.

## **Slidey**

<http://www.w3.org/Talks/Tools/Slidy/>

Slidey is a more robust W3C XHTML slide generator that includes many advanced features like SVG support, multiple backgrounds, sequential reveals within slides, and a hotkey-driven virtual table of contents. Work is underway to develop an Ajax interface for both Slidey and S5.

## **SlideML**

<http://slideml.bitflux.ch/>

SlideML is an XML format for generating slide presentations. Promising but perhaps not ready for prime time.

## **PerlPoint**

<http://perlpoint.sourceforge.net/>

A presentation solution written in PERL that includes the ability to export to HTML, XHTML/XML/S5, and (interestingly) LaTeX.

## **PowerTalk**

<http://fullmeasure.co.uk/PowerTalk/ReadMe.htm>

"PowerTalk is a free program that automatically speaks any presentation or slide show running in Microsoft PowerPoint for Windows."

## ***TEXT AND RTF***

The "least common denominator" of data interchange is ASCII text, and both 8-bit ASCII and Rich Text Format (RTF) present good opportunities for ensuring a base level of comprehensibility for all users. It shouldn't be discounted as an option. RTF provides enough flexibility to character and paragraph formatting to allow some presentational flexibility - while still being easily parsed by almost any assistive technology.

## ***SUMMARY***

Although PowerPoint is an attractive and ubiquitous application for creating and sharing presentations, it brings with it a number of usability and accessibility challenges. There are a variety of options beyond PowerPoint for presentations, and many of these provide simple, standards-compliant solutions that will be more accessible and usable.