About this text

From November 30 to December 2, 2009, we lead a discussion about web accessibility on the [Instructional Technologiy Forum](#) (ITforum) mailing-list. For this discussion, we opened a wiki, [accessibility4all.wikispaces.com](#) and put our "Preliminary paper" on its home page. After the mailing list discussion, its messages were copied on another page, [accessibility4all.wikispaces.com/Discussion](#), with the permission of the authors.

This PDF text is based on these two wiki pages, as they stood on Dec 4, 2009 2:50 pm. Their online versions may evolve further in future: wikis do, PDFs can't. Moreover, another page of the wiki, [Doctorow_3Strikes_Death](#), (an illustration of the use of [redundancy](#) for accessibility) is not included here. Therefore the real reference is the wiki.

Claude Almansi and Roberto Ellero

Content

A) Preliminary paper

B) Discussion

Back to [Content](#)

A) Preliminary paper

Accessibility

An obligation and many advantages

Accessibility is often perceived as a moral and civic obligation, but also as a drag, something shackling the creativity of programmers - whether in real life or online. Actually, accessibility rules and guidelines can enhance creativity, just as metrics rules for the sonnet and other poetry forms.

The challenge of making Venice as accessible as possible for people in wheelchair has lead to very interesting solutions, which are also useful for parents who visit the city with small kids in prams, or travelers carting suitcases on wheels, without defacing the historical architecture.

Similarly, in education, making learning objects accessible to students with various kinds of disabilities also facilitates different learning approaches, according to each student's learning style. E.g.:

- structuring a text correctly, using hierarchical header styles to automatically produce a table of content (instead of just mucking around with font size and attributes) will simplify reading for blind people who use a screen reader with which they can jump from header to header, but also for students who have reading problems.
- captioning a video tutorial will make its spoken content available to deaf students, but if you also offer the text transcript used for the captions, all students will find it easier to take notes (see also the Multimedia Accessibility section below)

Accessibility in Mind

One of the great resources about Web accessibility requirements is [WebAIM.org](#), which stands for Web Accessibility In Mind. This is an important point. Teachers do not have to master all the requirements before they start making learning objects: most educational institutions in countries where accessibility is a requirement have accessibility consultants for the more complex issues. However, putting oneself in the shoes of people with sensorial, motor and/or cognitive disabilities when preparing such learning objects is a good start: it also helps understand accessibility rules as resources rather than constrictions.

Why a wiki?

ITForum discussion papers are usually presented as PDFs. We are using a wiki for two reasons:

1. Roberto Ellero lives in Italy, and Claude Almansi in Switzerland, so a wiki is handier for writing together
2. Accessibility resources are evolving fast: since we started this wiki 2 days ago, for instance, Google announced that it was making its speech-to-text technology available for automatic captioning of YouTube education videos (see Multimedia accessibility below).

Besides, we can back up this wiki as HTML pages, which can in turn be reasonably easily transformed into an accessible PDF.

Back to [Content](#)

Pictures

"A black text on a black background would pass automated accessibility tests", as the joke goes, because a screen reader used by a blind person could still voice it. And without going that far, some people end up making text-only pages lest they violate some accessibility rule. This may be OK for blind or deaf users, but it is often not for people with reading or cognitive disabilities. Full accessibility for everybody may not be reachable, but it is possible to strive at it by offering several ways to get at the content, as in the examples that follow.

Alt attribute for pictures

Pictures can be used in accessible documents, provided they are given an alternative description. If this description can be kept short, it should be inserted in the "alt" attribute (see http://en.wikipedia.org/wiki/Alt_attribute) of the picture.

Alt v. title attributes

Most text and web editors - whether desktop or online - will prompt you to add a description when you insert a picture. Some - like this wikispaces one - are not entirely saftisfying, because the result is having the same text for the "alt" attribute and the "title" attribute (which should only give the title of the picture). And that's a bad idea because then a screen reader would voice the same text twice, which is boring and time-consuming (see http://ncsuwebdev.ning.com/profiles/blogs/alt-attribute-v-title).

One way to work around this issue is to first upload the picture to a platform that gives an embed code containing both "title" and "alt" attributes.

Example: say we want to insert the picture in http://www.flickr.com/photos/73527420@N00/374742159/sizes/s/ here. The default embed code says:

```
<a href="http://www.flickr.com/photos/73527420@N00/374742159/"
title="Bild043 ETH Zurich paid by Microsoft by calmansi, on Flickr">
<img src="http://farm1.static.flickr.com/157/374742159_bdceffa63f_m.jpg"
width="240" height="180"
alt="Bild043 ETH Zurich paid by Microsoft" /></a>
```

Here too, "title" and "alt" attributes are the same. But we can change them before embedding the code [1] :

```
<a href="http://www.flickr.com/photos/73527420@N00/374742159/"
title="ETH Zurich paid by Microsoft">
<img src="http://farm1.static.flickr.com/157/374742159_bdceffa63f_m.jpg"
width="240" height="180"
alt="Projection of the Microsoft logo on the façade
of the ETH (Federal polytechnic school) in Zurich" /></a>
```

and we can now use this modified code to insert the picture - with proper "title" and "alt" attributes – here:

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1 We could also remove the link to http://www.flickr.com/photos/73527420@N00/374742159, the main page for the picture, or link to another page; but let's leave it

Back to Content

(see picture under <u>Alt v. title attributes</u> in <u>http://accessibility4all.wikispaces.com</u>)

Long description

Some pictures need a description that would be too long for the "alt" attribute. Here are two examples of solutions for these cases:

The accessibility bicycle

[See picture <u>on the wiki</u>]

This accessibility bicycle appears in the linked web page, i.e. <u>Current and Evolving Accessibility Practices</u>, of the Office of Learning Technology of the University of British Columbia.

As reproduced here, it might perhaps pass an automated accessibility test: it has an alt attributebut the alt and title attributes say the same thing, repeated then in the caption under the picture. And that's incorrect: the title attribute should give the title, the alt atrribute should give an alternative text description of non-text objects. It is silly and rude to make blind people hear three times the same information. But that's the only option for describing uploaded images on <u>wikispaces.com</u>.

There would be a fairly simple work around: upload the picture to a picture-hosting platform like <u>flickr</u>, grab its embed code there and modify it to get proper title and alt attributes, then use the "embed other html" widget of wikispaces.

But it would not solve the main problem, i.e. conveying all the text parts of the picture, which would be too long for the alt attribute. So let's look at the corresponding code part in <u>Current and Evolving Accessibility Practices</u> to see how they solved it:

```
<a href="http://olt.ubc.ca/Accessibility%20Bicycle.pdf">
<p align="center"><img alt="Accessibility%20Bicycle.jpg"
src="http://olt.ubc.ca/Accessibility%20Bicycle.jpg"
 width="576" height="371" /></p></a>
```

I.e. they linked the mute picture <u>http://olt.ubc.ca/Accessibility%20Bicycle.jpg</u> to <u>http://olt.ubc.ca/Accessibility%20Bicycle.pdf</u>, where the whole text can be read by a screen reader.

Making such a bicycle-shaped textual PDF is not easy, granted. But one could also link to a normal web page where the same concepts would be developed in text, as in:

The HTML5 Super Friends

In <u>Accessibility: Take 2</u>, Kyle Weems discusses technical ways to make images requiring long descriptions accessible to blind people. And he points to the solution he has used for his HTML5 Super Friends comic in <u>http://www.cssquirrel.com/comic/?comic=35</u>. A screen reader (or the source code of that page if you don't have a screen reader) links the comic's page to its transcript in <u>http://www.cssquirrel.com/comicscripts/script35.htm</u>.

The coding solution used by Weems is perhaps rather complicated for many teachers, but the principle of allowing blind users to read a textual description should they wish to can be enacted in other, more simple ways: by directly linking to it on the image itself, as in "The accessibility bicycle" above, or by adding a link on the word "Description" or on the letter "D" under the picture.

Back to <u>Content</u>

As to educational value: in language classes, asking students to describe pictures is a staple exercise, often perceived as extremely boring by the students. But if they knew that the description was to serve a practical and useful purpose, they would probably be more interested.

Multimedia

Videos can also be made accessible to deaf people by captioning them, and to blind people by adding an audio description of what goes on without words.

Adding an audio description is a bit complicated. Therefore, for teaching purposes, it is better to plan the video so that there will be no need for an audio description: e.g. in the case of a chemistry experiment, by having the experimenter describe verbally what s/he is doing.

Captioning is way easier: there are several online and desktop user-friendly tools for that[2]. But until very recently, transcribing the audio was time-consuming - and rather boring. However, on November 19, 2009, Google announced a:

New automatic captioning tool for YouTube videos

And automatic time-coding for transcripts.

Here is a video explanation about these features: http://www.youtube.com/watch?v=kTvHIDKLFqc

Further info in Automatic Captions in YouTube by Ken Harrenstien. Official Google Blog. Nov. 19, 2009.

Beware of Flash players

Not all flash players - whether for audio or for video - can be used with a screen reader by blind people. In doubt, add a straight link to the audio or video file. For instance, in the case of the YouTube video about automatic captioning above, we can add a link here to its audio capture: http://accessibility4all.wikispaces.com/file/view/automatic_captions_YT.mp3. This way a blind person could download it and play it.

There are only 2 instances where visually given info is missing from the audio comment:

- at 1:34-1:47, in the explanation about automatic time-coding of a transcript without time-codes, the screencapture shows that this option is only available for English
- at 2:09-2:12, in the words "You can check out the captions and timecodes by clicking on the caption track here", "here" refers to the link on the word "English" shown in the screen capture.

But for your own videos, as you can download the text file of the caption track, you could offer it too, and add the missing info between square brackets. Or even splice it into the audio capture.

Slidecasting

Slidecasting, i.e. synchronizing a slideshow ("PowerPoint" in MS jargon) with audio[3] is often a better way to offer an online record of a conference than a video that only shows someone speaking, and a sometimes blurred and/or slanted view of his/her slides. It can be done, for instance, at http://

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2 See for instance the ones described in Three Video Captioning Tools.
3 See http://en.wikipedia.org/wiki/Slidecasting.

www.myplick.com or at http://www.slideshare.net, and the resulting slidecasts can be embedded in another site, blog or wiki.

You can add a transcript of the audio in the notes of the slideshow: they won't show in the slidecast, but deaf people can dowload the slideshow with the notes.
However, these slidecasts are also presented in a flash player that cannot be used with a screen reader (see above). In theory, people can download the slides and the audio separately - but they have to sign in for that, and signing up can be a drag, especially if you are blind. So if you use a slidecast in your site (etc), add direct download links for the slides and for the audio tool[4].

Text

Text is also part of multimedia and, as shown above, essential for making audio and visual content accessible. It is also easier to re-use (note taking, quoting by copy-pasting etc). Some accessibility aspects of text:

Don't impose sizes in pixels

While most browsers can ignore such indications, they may lead to problems when people zoom the text, if the author only thought of one precise character size.

Beware of tables and forms

Making tables and interactive forms that can be used by a blind person with a screen reader can be tricky. Either consult an accessibility specialist, or find another way to do the same thing.

Use styles

Changing font size and shape is only visual, using styles conveys a meaning that will be perceived by screen readers used by blind people. Examples:

- If you move the left margin one inch to the right for a quotation, the screenreader will just say the margin has changed. If you use the quotation style, the screen reader will say it is a quotation.
- If you change the font size and use bold for titles, the screen reader will just say the font has been modified. If you use header styles hierarchically for your titles and subtitles, a blind person can use the screen reader to skip between sections. You'll also be able to provide a table of content with links to the various sections.

PDF?

The accessibility and usability of PDFs have - potentially - improved greatly since Vincent Flanders wrote Chairs are for Sitting. PDF is for Printing. But making a really accessible PDF remains complicated, and requires specific software - though you can make a reasonably accessible one without such software by:

- using a text editor that foresees exportation as PDF, with the possibility to fine-tune the

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4   As under "Liens directs" in http://almansi.wikispaces.com/CTE.

exportation settings[5]
- refraining from tables and forms unless you know how to make them accessible (see above)
- using styles (see above: header styles can automatically produce an alternative navigation menu by titles instead of just the list of thumbnails on the right of the PDF)
- refraining from making PDFs by using the "Print as PDF" feature of your printing menu, which will produce a textual PDF, but without navigation features, and links are likely not to work[6]
- never using "scan as PDF" when scanning a printed document: it only produces text images that can't be searched - or read with a screen reader
- never imposing copying and/or printing restrictions to users:
  - even if it is possible to forbid copying and printing and to allow reading with a screen reader, people with reading disabilities or who are not fluent in the language used must be able to copy the text exactly to look it up online, or to ask someone about its meaning.
  - these restrictions are silly anyway, because they can be by-passed with a screen capture and possibly by doing the Optical Character Recognition of the capture

Above all, think twice before offering text content in a PDF:

- Is it really necessary?
- What for?
- Won't the same content in a web page or in a normal formatted text file (.doc, .odt ...) also print decently?

Web 2.0

Web 2.0 "read/write" online applications are great, but some have accessibility barriers: see the section about flash players above; visual CAPTCHAs for creating an account - or worse, for adding a comment - also block blind people.
However, the Web 2.0 platforms are improving, and so is accessive technology. Moreover, people with some types of disabilities (cognitive, reading, but also severe motor disabilities) can be very keen on using them - think of social networking - and yet particularly need guidance in this. So schools cannot just simply ignore them: compromises must be found.
If your school has an accessibility consultant, ask him/her. Otherwise, there is a LinkedIn Web 2.0 Accessibility Forum (you'll have to sign up, but it is free).

Redundancy

"The foundation of accessibility for people with disabilities is the concept of redundancy. A foundation of redundancy allows the configuration of products, so an individual can access information and the computer in a method that is most beneficial and meaningful to that individual. Accessibility to products is a compromise. All accessibility features do not need to be built into a product. However, the "hooks" or links to information for access for people with disabilities MUST

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5   OpenOffice Writer for instance. Illustrated tutorial on how to make accessible PDFs with OpenOffice Writer in http://www.appligent.com/adobeaccessibility/AdobeAccessChapter3a10.html; some of it might also work for MS Word, perhaps.
6   The Page List of this wiki offers the option to save pages "as PDF", produced by TCPDF, apparently in the same way as by using the "Print as PDF" feature, and with the same drawbacks.

be in place to provide access through existing accessibility tools. "
From: [Access to Multimedia Textbooks and Instructional Materials](#) (Texas School for the Blind and Visually Impaired).

Tools

The [Cory Doctorow on the Three Strikes Death Penalty](#) page shows how this redundancy can be offered easily, with simple, for-free tools. Given the existing original video in http://blip.tv/file/2857773, the tools used were:

- [IMovie](#), desktop proprietary video editing software present by default on Mac computers; but there are other alternatives: see http://en.wikipedia.org/wiki/List_of_video_editing_software
- [Audacity](#), desktop free, multiplatform and for-free audio editing software, with keyboard shortcuts
- [DotSUB](#), for-free web application for captioning and subtitling, which also produces text transcripts; the video player for the transcription interface has keyboard shortcuts; unfortunately some online authoring platform do not accept embedding the DotSUB viewing player - hence:
- [YouTube](#), for-free video hosting web platform where you can add captions and comments to/ on the video
- [Wikispaces](#), for-free[7]

Resources

General

http://www.diigo.com/user/calmansi/accessibility contains resources tagged "accessibility" over three years ca. So some links might be dead

For education

http://www.diigo.com/user/calmansi/accessibility_of_elearning contains resources mentioned by participants during the 2006 online [Accessibility of eLearning](#) seminar, and other resources gathered afterwards. Again, some links might be dead.

About us

Roberto Ellero, a videomaker, webdesigner and accessibility specialist, founded the [Webmultimediale](#) project in 2006. For more inf, see http://robertoellero.it/videomaker-webdesigner/ (in Italian, but will translate passably with Google language tools)
Claude Almansi, translator, language teacher and accessibility advocate, participates in Webmultimediale. For more info, see http://etcjournal.wordpress.com/2008/10/01/claude-almansi/ .

Webmultimediale

As the [Webmultimediale](#) site is in Italian, here is a video (with English and Italian subtitles, and

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7   In this public version. For the various non-paying and paying options, see http://www.wikispaces.com/site/pricing. See also http://www.wikispaces.com/site/for/teachers about non-paying private, ad-less wikis for K-12 educators.

Italian sign language translation). It is an announcement of a coming seminar lead by Roberto Ellero together with Silvia Mattia, Roberta Gherardi and Simone Cericola at [Cultura Senza Barriere 2010](), and it summarizes in a nutshell what Webmultimediale is about:

[http://www.youtube.com/watch?v=d2gnZnFIzLk]()

English text

When you work on video accessibility, you find out that the prejudice of an absolute, normative language – e.g. textual language in the narrow sense – arises from a scanty familiarity with other kinds of languages. You also realize that conveying the same content in different manners reveals new aspects that remained previously in the shadows. The common prejudice tends to privilege the importance of text.
At Cultura Senza Barriere (culture without barriers), I shall describe how to communicate by using simultaneously all possible languages: text, video, audio, audio description, images, subtitles and sign language towards an ever increasing fullness.

Back to [Content]()

B) Discussion

Context

This part contains messages from the discussion about accessibility (Nov. 29- Dec. 2, 2009) on the Instructional Technology Forum mailing-list for which re-use permission has been granted.

Messages

Threads by alphabetical order, then messages in each thread by chronological order

1 Accessibility

1.1 Denise Wunderlich

Nov 29, 2009 at 6:11 PM

I would like to expand on the idea of Universal Design. Universal Design was first conceived in the 1950s with the idea of trying to design barrier-free physical spaces for persons with disabilities. As this concept gained acceptance, designers realized that using principles of Universal Design not only benefited the disabled but also benefited everyone. The best example of this is the "curb cut", a city planning feature designed to benefit individuals in wheel chairs, but it turned out to also benefit people riding bikes, pushing strollers, and joggers. The concept of Universal Design grew in practice among many types of professions with the overarching goal of making what is designed usable by everyone to the greatest extent possible. An example of an educational "curb cut" is the use of placing captions on course videos. This not only benefits the hearing impaired or deaf, but also helps students whose second language is English and students studying in a noisy environment. Universal Design is much more than making use of assistive technologies to be in compliance with laws pertaining to educational accessibility. It also addresses environment, learning materials, strategies, modeling, assessment and motivation. The basic idea in Universal Design in education is to provide curricular content in multiple representations in multiple media and formats so the content can be recognized in multiple ways.

The following are several references for Universal Design in instruction:

Burgstahler, S. (2002). Universal Design of Instruction: Definition, Principles, and examples. http://www.washington.edu/doit/Brochures/Academics/instruction.html

(Burgstahler took the 7 principles of Universal Design formulated at the Center for Universal Design in North Carolina State University and applied them to instruction)

CAST (the Center for Applied Technology—http://www.cast.org/about/index.html) has made it their mission to develop innovative, technology based educational resources and strategies based on Universal Design

Hitchcock, C. (2001). Balanced instructional support and challenge in universally designed learning environments. Journal of Special Education Technology. 16 (4), 23-30.

Moore, S. (2007). Teaching every student in the digital age: Universal design for learning [Review

Back to Content

of the book In the Digital Age: Universal Design for Learning]. Educational Technology, Research and Development, 55 (5), 521-525.

Denise Wunderlich
Ph.D. Student
Wayne State University
Detroit, Michigan

1.2 Beverley Ferrell

Tue, Dec 1, 2009 at 7:42 PM

Denise

My apologies..didnt mean to neglect your contribution! I was reading through the links trying to find information on usability vs accessibility.

2 Accessibility tools

2.1 Beverley Ferrell

Mon, Nov 30, 2009 at 9:27 PM

Do the tools used for accessibility dictate or influence any part of the instructional design project?

2.2 Claude Almansi

Dec 1, 2009 at 12:07 AM

On Mon, Nov 30, 2009 at 9:27 PM, [Beverley Ferrell] wrote:

> Do the tools used for accessibility dictate or influence any part of the instructional design project?
> Bev

I am not sure I understand your question, Bev: could you explain what you mean by accessibility tools, or tools used for accessibility, please?

On the off chance I got the idea: take online video players. The YouTube player is not accessible to blind people, because it does not have keyboard shortcuts or textual links for the Play, Pause etc commands: i.e. you have see the player in order to click on the commands with a mouse.

But the US government has issued a "Section 508 Compliant Video Player" for YT videos which does have textual command links for blind people, described in and downloadable from <http://www.business.gov/ about/features/508-video- player.html>.
Actually, the download is an 8k zip file containing (1) a javascriptthat must go somewhere in the head of the pages of a site (which won't influence the design of the site for viewers), and (2) a file with the html code for the player, in which you have to replace a chunk with the ID of the YT video (would that qualify as a tool?). It **will** change the design look of the page: see the difference between

- the video about webmultimediale I embedded straight in the YT default player in <http://accessibility4all. wikispaces.com/#toc27>,

Back to [Content]

and

- the same YT video seen through the 508 Player, in <http://www.webmultimediale. org/videoblog/ 2009/11/cultura_ senza_barriere.html>

But mostly, accessibility is achieved by choosing ways of using existing tools, rather than by using accessibility-specific tools.

Adding an alt attribute to a picture to describe it is useful to let blind people know what the picture is about, but it is done with a normal feature in decent text and web editors (and also means it will be indexed by search engines). And it won't show to people who are not using a screen reader.

Captioning an online video is done by adding a text file containing the transcript and time codes to the video: not an accessibility-specific tool. Thecaptions can be turned off by non-deaf people, so they won't affect the design.

Structuring a web page so that blind people, but also people with motor disability or dyslexia, can simply navigate to all sections doesn't require an accessibility-specific tool. It might affect the design of the page, but site designers seem to prefer to structure their pages this way anyway, by and large.

Some accessibility practices - though they do not require specific tools - will have an influence on design: you can't have music automatically blaring if you wish blind people to be able to hear their screen reader. You must give up pretty-pretty pastel hues for background and text if you want color-blind and visually impaired people to be able to read your content. Etc.

2.3 Beverley Ferrell

Dec 1, 2009 at 6:31 AM

Claude

Here is a list of OS software tools/etc,

http://www.oatsoft.org/ Software/listing/Repository

and I don't have a commercial list handy. Each of them has certain capabilities to assist a person, but not everyone functions the same. So. ..does the design get driven at all by the functionality of the tools used to access it.

I tried using Adobe reader last night (capable since Adobe 7) to read a PDF file and nothing happened, so I had to play around a little today and found two documents that I could read. One is the PDF file from the checklist site yesterday http://www.webaim.org/ standards/508/508checklist.pdf and the other is an Adobe company file on accessibility.

http://www.adobe.com/ accessibility/products/ acrobat/pdf/A9-pdf- accesibility-overview.pdf

It was my first attempt at using the built in Adobe pdf reader.

Select Document-Accessibility quick check to verify document is readable (make sure your sound card is not muted)

View-Read out loud, Activate

Then go to View-Read, and choose the page document etc.

It was a bit cumbersome..why have to go to different menus??

Back to Content

The voice is mechanical and the pace is very artificial. Even MS agents would sound better although they wont be available after Windows 7.

The point here...Adobe has ways that the pdf has to be structured to read it. They are both all text PDFs so if you tried to include videos in the PDF etc. it would cause problems. You would almost have to store the video outside of the pdf with a link and then use a video player. So some of the design is driven both by the content and the readers..unless there is one that does both?

If the design has to be altered in this mode to accommodate the tools, then it almost means two different versions might be needed. I was trying to scan for some of the "universal design" issues, but I can see that there might be differences between business, education and DOD types of application solutions.

2.4 Claude Almansi

Dec 1, 2009 at 2:50 PM

Thanks for the further explanation and link:

On Tue, Dec 1, 2009 at 6:31 AM, [Beverley Ferrell] wrote:

> Here is a list of OS software tools/etc,
> http://www.oatsoft.org/ Software/listing/Repository
> and I don't have a commercial list handy. Each of them has certain capabilities to assist a person, but not everyone functions the same. So... does the design get driven at all by the functionality of the tools used to access it.

I've asked Roberto to answer you more in detail about these tools . My impression is that - as the acronym OATS standing for Open Source Assistive Technology Software - seems to indicate, these are mainly tools for the user with a disability, or for checking how a page would behave with certain accessive technologies - with some exceptions, like "formEdit and the Web Page Communicator Package 2" by Jim Luther, which is a set of templates for making accessible interactive and rich pages. (I couldn't find the NVDA download page).And I believe that "recommended" is to be taken in the sense that these tools have been tested by OATS, not that you have to use them all: only that you can reasonably safely (see the http://www.oatsoft.org/Info/ disclaimer you are required to read before downloading, though) try them for particular situations involving accessibility issues triggered by your design goals - not viceversa.

Re:

> I tried using Adobe reader last night (capable since Adobe 7) to read a PDF file and nothing happened, so I had to play around a little today and found two documents that I could read. One is the PDF file from the checklist site yesterday http://www.webaim.org/ standards/508/508checklist.pdf and the other is an Adobe company file on accessibility. http://www.adobe.com/ accessibility/products/ acrobat/pdf/A9-pdf- accesibility-overview.pdf. It was my first attempt at using the built in Adobe pdf reader.

I haven't tried it and have an older version of the Adobe PDF reader. I usually ask a blind friend to try my PDFs and tell me if they are OK (and refrain as much as possible from making PDFs). About:

> Select Document-Accessibility quick check to verify document is readable (make sure your sound card is not muted)

Back to Content

> View-Read out loud, Activate
> Then go to View-Read, and choose the page document etc.
> It was a bit cumbersome.. why have to go to different menus??
> The voice is mechanical and the pace is very artificial. Even MS agents would sound better although they wont be available after Windows 7.

Screen reading voices are not meant to sound natural. Blind people accelerate the pace in a way that is incomprehensible to non-blinds, in order to read faster. Listen to the last part of <http://www.doit.wisc.edu/ accessibility/video/intro.asp>, or of <http://noimedia.podspot.de/ post/ascoltare-il-web-con- jaws-sotto-la-guida-di- gabriele-ghirlanda-bis/>, the podcast I did with the above-mentioned blind friend using his screen reader

> The point here...Adobe has ways that the pdf has to be structured to read it. They are both all text PDFs so if you tried to include videos in the PDF etc. it would cause problems. You would almost have to store the video outside of the pdf with a link and then use a video player. So some of the design is driven both by the content and the readers..unless there is one that does both?

Adobe is trying to sell the idea that theirs is the only way to make accessible PDFs. But see <http:// www.appligent.com/ adobeaccessibility/ AdobeAccessChapter3a10.html> for how to do that with OpenOffice.

Including videos in a video does create size problems anyway: I did the French translation of the movingAlps Vademecum downloadable from <http://www. movingalpsfoundation.ch/ pagine/standard.php?linguaID= 4&artID=106>.
A behemoth of a file at 6.8 Mb as it is (the first version they put online was over 20 Mb), with severe usability issues[8]. Their initial idea was to embed the videos, but they replaced that with links their external hosting addresses, mercifully.

> If the design has to be altered in this mode to accommodate the tools, then it almost means two different versions might be needed. I was trying to scan for some of the "universal design" issues, but I can see that there might be differences between business, education and DOD types of application solutions.

DOD?

Rather than "accomodate the tools", accomodate the requirements of as many as possible potential/targeted users. And yes, this may mean different versions. Why on earth embed a video in a PDF when you can do so much more easily and efficiently in a web page? Offer both and link between them - and maybe to a transcript of the video. That's the greatness of hypertext. Accessibility means more, not less.

If you follow some basic rational rules in the design of your master document, it is quite easy to derive various formats from it: that's how I was able to use the .odt documents to derive the 3 other formats for each version of the text offered in <http://www.archive.org/ details/TheatreOfSleep>[9] .

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8   When a PDF designer needs to include a complex picture like the <http://www.flickr.com/photos/ 73527420@N00/4149527063/> one on p. "6" (real p. 11) to explain how to navigate the PDF, IMHO there is a problem with his design. Let alone accessibility, as there is no alternative description for the numerous text images., and the column layout does not linearize well for screen readers. But strangely enough, though the movingAlps project had an important distance training part, accessibility remained a totally exotic concept for its conceptors until the end.

9   plus the formats the Internet Archive software automatically derived: the process can therefore be automated, even if

2.5 Roberto Ellero

Dec 1, 2009 at 3:38 PM
Themes: Evaluation, References, Tools, Tools Authoring, Tools Accessibility Evaluation

> On Tue, Dec 1, 2009 at 6:31 AM, [Beverley Ferrell] wrote:
> Here is a list of OS software tools/etc, http://www.oatsoft.org/ Software/listing/Repository and I don't have a commercial list handy. Each of them has certain capabilities to assist a person, but not everyone functions the same. So... does the design get driven at all by the functionality of the tools used to access it.

Hi all,

this list is a little confusing because it is very general, I'd prefer to point out as a reference the Complete List of Web Accessibility Evaluation Tools in W3C WAI Website: http://www.w3.org/WAI/ER/ tools/complete.html

The main part is made by tools useful for verify those aspects of web content accessibility which are machine testable.

But not all are, as you know. Verification of an expert, and support by people with disabilities are necessary, to meet WCAG 2.0 requirements: http://www.w3.org/WAI/WCAG20/ quickref/

About PDF accessibility, Acrobat is the only way to check the full accessibility of Pdf docs, using the embedded checker. With Acrobat you can verify all the aspects, not only if the document is tagged (that is only the basic of the problem). In Wcag 2.0 you read: "WCAG 2.0 success criteria are written as testable statements that are not technology-specific. Guidance about satisfying the success criteria in specific technologies, as well as general information about interpreting the success criteria, is provided in separate documents." For each tecnology, the accessibility reference is the vendor guidelines; for Acrobat: http://www.adobe.com/ accessibility/products/ acrobat/ For a simple text document the tag adding is perhaps sufficient to make it accessible, but for a complex one is not sufficient.

See also: http://www.w3.org/WAI/GL/ WCAG20/implementation-report/ PDF_accessibility_support_ statement Accessibility Support Documentation for PDF.

2.6 Beverley Ferrell

Dec 1, 2009 at 7:14 PM

Roberto and Claude

I think we have 3 different tool lists going here.

1. The one I submitted was open source software http://www.oatsoft.org/ Software/listing/Repository for designers to possibly use in designing for users.

2. Here is a tool list of items that can be used by the users to access the pages/information:http://wac.osu.edu/resources/ at.html

As a designer I would want to know what they are able to do for the user and how they do it if I have never designed before so that I design correctly. I would not know how to make the alternative versions needed for the readers etc. if I was/am new to designing for accessibility and didn't know

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I don't know how.

Back to Content

what tools were available for design and how the other tools are going to interpret them.
3. The list Roberto sent is more of an evaluation tool list that will check my materials to make sure they are compliant in some manner after I have designed them.

What I am trying to draw out and haven't found in my searches yet (really limited on computer mouse use this week) is a process/plan for those who have

1. never designed for accessibility

2. may have had some exposure, but they don't really have a comprehensive process.

I am willing to bet that most of the ID courses do not address accessibility as most of them probably don't address SCORM which may not agree with accessibility?? Haven't found much yet on those issues combined (striaght web pages are not always used especially in a LMS)
http://www.techniques.org/ scorm.html

A list of the accessibility sites/laws for other countries would be helpful in case we are working there.

So far we have in very General ideas:

1. **Leo-** Uses a general universal/usability process but its not defined for us.

2. **David-** Make ID decisions for content, media etc. then determine how to make accessible (the process to decide how is what I am seeking here)

3. **Claude-** Make the materials in one or more formats- how do you determine which is the more effective? If blind people read in a completely different manner (and we may not be aware of this) and screen readers read like this:

http://wac.osu.edu/webaim/ tables2.htm then layout tables and data tables have to be designed differently.

Jim Thatcher has a fairly basic tutorial that explains it http://jimthatcher.com/ webcourse9.htm

I have not had time to read and comprehend all of this vs design for data etc such as Tufte recommends, so is it really the best way to display the data for those who are not sight disabled or must we always design two versions? and what about adding mobile issues to this? There are those who disagree with Tufte's ideas also. Tables might not be useful, so data in graphs etc would be a real challenge for the new person designing accessible information.

4. **Roberto**'s tools could be used to check the materials we have designed using David/Leo/Claude's ideas, but is one better than another? I ran one of my website pages out of curiosity and one tool gave a very understandable report, the other was a hodgepodge that was unreadable.

I was mainly using PDFs as an example of problems because it is ubiquitous for delivery of documents and info,especially if there are time and space constraints. Not everyone has or will use Open Office, but it certainly looks like it would be a good tool for designing different versions.

Jim Thatcher has his chapter from his book on his website: http://jimthatcher.com/book2. htm
as does Laughton Henry (link is from Jims site) http://uiaccess.com/ understanding.html
There are several books on accessibility and UD. Has anyone read or have recommendations for those listed on the same page under this book:

http://www.amazon.com/ Practical-Reader-Universal- Design-Learning/dp/1891792296/ ref=sr_1_1?ie=UTF8&s=books& qid=1259690379&sr=8-1

I had a free one, but seem to have misplaced the link right now.

2.7 John Griffin

Dec 1, 2009 at 7:56 PM

Bev et al:

In 2004 I ran several tests using testing software tools to assess a certain set of government websites for 508 compliance to create a Dept of Justice report. I found several things that the testing software missed. IF memory serves me well, I found both false positives and false negative reporting instances that had to be double checked by a human (me). In addition there was a point in which a qualitative decision had to be made on such things as acceptable alt tags or similar HUMAN language alternatives. There was a lot of varince in the quality of langage discriptions that went into those tags.

By the way, just because a contractor said they made their products meet 508 standards did not mean they did! An awful lot of " optimistic opinion " went into some of their statements of compliance.

John

John H. Griffin, Ph.D.
Communications and Educational Psychology

- Distance Learning
- Instructional Design
- Culture, diversity and communications

Research coaching – Put someone in your corner to help design & plan, implement and write!
McWeadon Education – Culture for Education
1108 S. Stanley
Stillwater, OK 74074
H: 1.405.377.3666
C: 1.405.762.6578

2.8 Claude Almansi

Dec 2, 2009 at 12:14 AM

On Tue, Dec 1, 2009 at 7:14 PM, [Beverley Ferrell] wrote:

> Roberto and Claude
> I think we have 3 different tool lists going here.
> 1. The one I submitted was open source software http://www.oatsoft.org/
> Software/listing/Repository for designers to possibly use in designing for users.

Actually, mainly assistive tools for disabled users and tools helping designers check that what they design is accessible by disabled users with the assistive tools they have to use, and/or in function of their disability. The few "authoring tools" are actually templates for accessible solutions that use normal tools.

> 2. Here is a tool list of items that can be used by the users to access the pages/information:

Back to Content

http://wac.osu.edu/resources/ at.html
As a designer I would want to know what they are able to do for the user and how they do it if I have never designed before so that I design correctly. I would not know how to make the alternative versions needed for the readers etc. if I was/am new to designing for accessibility and didn't know what tools were available for design and how the other tools are going to interpret them.

The http://wac.osu.edu/resources/ at.html page you mentioned has a link to Neal Ewers' <http://www.doit.wisc.edu/ accessibility/video/screen_ readers.asp>. See his other video podcasts on how people with different disabilities access conten: <http://www.doit.wisc.edu/ accessibility/video/>.

Then apart from the simulation tools in the first link you mentioned:

- Fangs addon for Firefox <http://www.standards- schmandards.com/projects/ fangs/>: screen reader emulator (but blind friends tell me they actually can do more than what Fangs suggests)

- Web Developer addon for Firefox <http://chrispederick.com/ work/web-developer/>: a toolbar with several tools with which designers can check various aspects of their work
And then there are automatic accessibility checkers - but see Roberto's message before and John Griffin's message after yours: these checkers are only indicative. CynthiaSays <http://www.cynthiasays.com/> is interesting because it links found errors to the corresponding part of WCAG and emulates various browsers - yet it might be in part obsolete (refers to WCAG 1.0, and browsers have also evolved since the ones listed).

3. The list Roberto sent is more of an evaluation tool list that will check my materials to make sure they are compliant in some manner after I have
designed them.
What I am trying to draw out and haven't found in my searches yet (really limited on computer mouse use this week) is a process/plan for those who have
1. never designed for accessibility
2. may have had some exposure, but they don't really have a comprehensive process.
I am willing to bet that most of the ID courses do not address accessibility as most of them probably don't address SCORM which may not agree with accessibility?? Haven't found much yet on those issues combined (striaght web pages are not always used especially in a LMS)
http://www.techniques.org/ scorm.html

Again, I'm not a designer - and besides, I am not familiar with SCORM. Maybe Roberto Ellero and/ or John Griffin could answer you?
In Switzerland, there has been some progress in recent years in training web designers in accessibility too. But I would have thought that in the US, with Section 508, this was the norm?

A list of the accessibility sites/laws for other countries would be helpful in case we are working there.

- See the external links at the end of <http://en.wikipedia.org/wiki/ Web_Accessibility_Initiative> for the various W3C texts on accessibility.

- English translations of Italian laws and by-laws concerning accessibility <http://www.pubbliaccesso.gov. it/english/index.htm> (important because they are the model for EU recommendations on accessibility)

- EU: E-inclusion project <http://www.einclusion-eu.org/>. Ended 2007 unfortunately, but some

Back to Content

still valid resources. Theoretically taken upwithin i2010 <http://ec.europa.eu/ information_society/eeurope/ i2010/index_en.htm>, but there isn't much there.
On Oct. 1st, 2009, Commissionar Viviane Reding (responsible for Information Society and Media) announced a "European Disability Act" that should cover e-accessibility issues - but merely as something to be developped (press statement: <http://europa.eu/rapid/ pressReleasesAction.do? reference=SPEECH/09/429>.

So far we have in very General ideas:

I think these three approaches are basically the same, we have just stressed different aspects.

1. Leo- Uses a general universal/usability process but its not defined for us.
2. David- Make ID decisions for content, media etc. then determine how to make accessible (the process to decide how is what I am seeking here)
3. Claude- Make the materials in one or more formats- how do you determine which is the more effective?

You don't have to determine which: you give them all, using links (visible to all or just to screenreaders) not to clutter the main page. See the quotation under "Redundancy" in the wiki, http://accessibility4all.wikispaces.com/#toc20 .

If blind people read in a completely different manner (and we may not be aware of this) and screen readers read like this: http://wac.osu.edu/webaim/ tables2.htm then layout tables and data tables have to be designed differently.
Jim Thatcher has a fairly basic tutorial that explains it http://jimthatcher.com/ webcourse9.htm<http://wac.osu.edu/webaim/ tables3.htm> (the page following the one you quoted) does the same, maybe with more illustrations: if you follow these instructions you'll get tables that work visually and that can be read by a screen reader.

The Web developper addon for firefox mentioned earlier allows you to linearize your pages too, hence to check how tables will be read by a screen reader.

I have not had time to read and comprehend all of this vs design for data etc such as Tufte recommends, so is it really the best way to display the data for those who are not sight disabled or must we always design two versions? and what about adding mobile issues to this? There are those who disagree with Tufte's ideas also. Tables might not be useful, so data in graphs etc would be a real challenge for the new person designing accessible information.

I'm not familiar with Tufte's writings - just read the Wikipedia article on him now. But otherwise: you can make an accessible table, you can have its pie chart or column visualisation with an alternative description either in the "alt attribute" or on another page if it's too long, and you can link between them. A dyslexic person can choose the graphic representation, a blind person the textual description, and folks who understand tables better, the table.

4. Roberto's tools could be used to check the materials we have designed using David/Leo/Claude's ideas, but is one better than another? I ran one of my website pages out of curiosity and one tool gave a very understandable report, the other was a hodgepodge that was unreadable.

Then use the one whose report you understand, and maybe try to gain familiarity with the hodgepodge of the other - just in case learning its linguo yields interesting info.

I was mainly using PDFs as an example of problems because it is ubiquitous for delivery of

Back to Content

documents and info,especially if there are time and space constraints. Not everyone has or will use Open Office, but it certainly looks like it would be a good tool for designing different versions.

Errh: I've been using OpenOffice since 2003 (NeoOffice - for-Mac version of OO - since 2005) because I used to write Italian summaries of security warnings when they were only in English, for a Swiss association. Quite a heap concerned MS Office and Explorer. So when someone gave me a CD with OpenOffice, I decided it was boring enough to have to write about MS Office's exploits etc without having to take the measures against them on my computer as well ;-)

(...)Hence the ref. to OpenOffice: I am just totally unfamiliar with later versions of MS Office. But I understand it is compatible with Acrobat Writer. Others will be able to explain about using MS Office in the same way.

> Jim Thatcher has his chapter from his book on his website: [http://jimthatcher.com/book2. htm](http://jimthatcher.com/book2.htm)
> as does Laughton Henry (link is from Jims site) [http://uiaccess.com/ understanding.html](http://uiaccess.com/understanding.html)

Both books were published 2006. So they might contain very useful material, but WCAG 2.0 weren't ready then, and there has been a lot of further work in particular in the field of ARIA (Accessible Rich Internet Applications - see <[http://www.w3.org/WAI/intro/ aria](http://www.w3.org/WAI/intro/aria)>) since. Assistive tech has progressed too.

> There are several books on accessibility and UD. Has anyone read or have recommendations for those listed on the same page under this book:
> [http://www.amazon.com/ Practical-Reader-Universal- Design-Learning/dp/1891792296/ ref=sr_1_1?ie=UTF8&s=books& qid=1259690379&sr=8-1](http://www.amazon.com/Practical-Reader-Universal-Design-Learning/dp/1891792296/ref=sr_1_1?ie=UTF8&s=books&qid=1259690379&sr=8-1)
> I had a free one, but seem to have misplaced the link right now.

I'll let others answer: I can't.

2.9 Claude Almansi

Dec 2, 2009 at 12:26 AM

On Tue, Dec 1, 2009 at 7:56 PM, John Griffin wrote:

> Bev et al:
> In 2004 I ran several tests using testing software tools to assess a certain set of government websites for 508 compliance to create a Dept of Justice report. I found several things that the testing software missed. IF memory serves me well, I found both false positives and false negative reporting instances that had to be double checked by a human (me).In addition there was a point in which a qualitative decision had to be made on such things as acceptable alt tags or similar HUMAN language alternatives. There was a lot of varince in the quality of langage discriptions that went into those tags.

That's also the point Roberto made about automated accessibility checking tools: they help, but don't replace human judgment.

> By the way, just because a contractor said they made their products meet 508 standards did not mean they did! An awful lot of " optimistic opinion " went into some of their statements of compliance.

I even saw a site that deliberately cheated automated accessibility checkers: most of the content was

Back to [Content](#)

in text images instead of text, but they used the empty alt attribute (alt=""[10]) which should be reserved to purely decorative elements, as it instructs screen readers to just skip. So the automated checking software just asked "are you sure all these images are just decorative elements?" but didn't fail the site.

2.10 Roberto Ellero

Dec 2, 2009 at 12:07 PM

> They are both all text PDFs so if you tried to include videos in the PDF etc. it would cause problems. You would almost have to store the video outside of the pdf with a link and then use a video player. So some of the design is driven both by the content and the readers..unless there is one that does both?

It is possible to embed videos in Pdf documents, and add captions but about dialogue with Jaws it is necessary to make a test. This will be made in a session of video accessibility tests I've scheduled within december. I'll publish the results in the Wiki.

> What I am trying to draw out and haven't found in my searches yet (really limited on computer mouse use this week) is a process/plan for those who have
> 1. never designed for accessibility
> 2. may have had some exposure, but they don't really have a comprehensive process.

Yes accessibility is an unending process, related skills are needed in all the professional profiles involved in it.

Accessibility should be in mind all over the process, from idea to executive project.
There are not a unique formula to decide all the aspects for all the possible process, but it may be useful these general documents:

http://www.w3.org/WAI/impl/

http://www.w3.org/WAI/bcase/ Overview

> I am willing to bet that most of the ID courses do not address accessibility as most of them probably don't address SCORM which may not agree with accessibility?? Haven't found much yet on those issues combined (striaght web pages are not always used especially in a LMS)
> http://www.techniques.org/ scorm.html

I know Atutor, which is a Scorm compliant Elearning Content Management System, designed with accessibility and adaptability in mind: http://www.atutor.ca/

> 3. Claude- Make the materials in one or more formats- how do you determine which is the more effective? If blind people read in a completely different manner (and we may not be aware of this) and screen readers read like this: http://wac.osu.edu/webaim/ tables2.htm then layout tables and data tables have to be designed differently.

In my opinion, every situation is context related and only a test with all the types of configurations and disabilities may guide choices.

Data tables should be made with the proper markup, see this Wcag 2.0 tech and related: http://www.w3.org/TR/WCAG- TECHS/H51.html

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10 In the e-mail message, wrongly given as alt="0"

Back to Content

> Unless Roberto wants to go on with the discussion on the list, I'd be in favor of concluding and telling participants they can carry it on on the wiki: Maggie McPherson has already become a member of it. So I'll wait till this evening in case Roberto wants to go on.

Ok, we continue the conversation in the wiki...

3 Discussion- Accessibility

3.1 Beverley Ferrell

Nov 29, 2009 at 2:12 AM

For at least the next couple of days Claude and Roberto will be leading the discussion on accessibility. In the US we have 508, but not everyone thinks about it when designing. Other countries may require you to do different things if you do work in their country or for their citizens. Please take the time to try and participate in this discussion.

If you could, please list list the different disabilities that we might need to consider in design? Has anyone had extensive experience in dealing with accessibility issues?

3.2 David W. Klein

Nov 29, 2009 at 4:01 AM

Rather than list different disabilities, it might be easier at first to list classes of disability. Traditional ways of looking at disability is through categories such as sensory (blindness, deafness), physical or motor (including small and large motor issues), cognitive (largely learning disabilities), and affective or psychiatric disabilities (depression, anxiety). This can get you started.However, rather than think in terms of disabilities, I often prefer to think in terms of barriers -- what are the barriers we build into our designs that keep people from having parity with other learners? Thinking this way shifts the focus from the person with the disability as the problem to the design as the problem. It also opens the door to thinking about designing for people/users who might not otherwise think of themselves as people with disabilities, e.g., a 70-year-old woman who can't read 12-point type without reading glasses, who fatigues easily, and who takes several medications that cause drowsiness and attentional issues.

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Back to Content

3.3 Leo M. Grassi

Nov 29, 2009 at 4:04 AM

My team has had to observe the Rehabilitation Act ammendments in every project we undertake. As a DoD component, it's simply the law, and it is stipulated in every statement of work. I can expound on requirements if interested, along with some interesting "case studies" I can share.

3.4 Beverley Ferrell

Nov 29, 2009 at 5:47 AM

David,

In the cognitive area, you mentioned learning disabilities, but what about accidents to the brain that influence the abilities for cognitive processing? Where do they fit? It would seem that we would need more descriptions so that we understand the difficulty.

3.5 David M. Klein

Nov 29, 2009 at 5:47 AM

Bev,

Fair enough. The broad categories I listed before have been useful for me as a starting place as a designer. But I would suggest that as disabilities are listed and described, we should try to avoid characterizing everyone who fits a particular disability category as having all the category's characteristics. Instead, I've found it more helpful to think of particular types of disability as groups of functional limitations that most individuals in the class experience.

Take a traumatic brain injury, for instance. I'm not an expert in this area, but I know that effects of a brain injury among individuals can vary widely. They can experience to varying degrees problems with shortterm memory, longterm memory encoding, recall, attention, and stamina. It can also affect perception and affect. These are functional limitations that designers can take into account as possible issues during early stages of design and can potentially provide ways learners/users can benefit from the design. For example, ensuring users have control over the speed of presentation and can repeat units can help individuals with shortterm memory and attention limitations. Looking at these as functional limitations is helpful because many of the problems described for brain injury can present similarly for the elderly as well as for people on some medications for, say, depression. I should mention that my focus has been electronic media, primarily the Web as delivery medium, so some disabilities, such as mobility impairments, have not been much of an issue as they might be for classroom-based instruction. On the other hand, learners are more likely to be using assistive technologies when accessing the Web, and these technologies are also a factor in design considerations.

That said, here's an off-the-cuff short list of common disabilities that can affect instructional design decisions:

Sensory:

- Blindness
- Visual impairment / low vision
- Color blindness

Back to Content

- Deafness
- Hard of hearing (lately many prefer to abandon this category and just use deafness)

Physical:

- Mobility impairment
- Large / fine motor impairments
- Spinal cord injury / paralysis
- Amputation
- Cerebral palsy
- Stroke
- Chronic diseases / medical disabilities (cardiopulmonary diseases, chronic fatigue syndrome)
- Addiction

Cognitive:

- Learning disabilities
- Attention deficit
- Autism
- Brain injury

Affective / psychiatric:

- Depression
- Anxiety
- Mood, personality, and other disorders

3.6 Maggie McPherson

Nov 29, 2009 at 8:45 AM

Quite coincidentally, I happen to be teaching the topic of Accessibility this week. Yet apart from drawing students' attention to the fact that we are all differently-abled and therefore cannot all access web resources in precisely the same way, I feel we need to be able to get across what this means in reality. For anyone interested in accessibility issues, I would highly recommend the UK's Joint Information Systems Council (JISC) "SimDis" resource, available at: http://www.techdis.ac.uk/resources/sites/2/simdis/. This has been set up to enable staff to experiment with various activities and simulations in order to gain a more personal understanding of how different conditions might affect student access.

3.7 Claude Almansi

Starting with Maggie's reply, and attempting to integrate those by others:

On Sun, Nov 29, 2009 at 8:45 AM, Maggie McPherson wrote:

> Quite coincidentally, I happen to be teaching the topic of Accessibility this week.

That's great: do you have a public site for this course?

Back to Content

Yet apart from drawing students' attention to the fact that we are all differently-abled and therefore cannot all access web resources in precisely the same way,

This is indeed a key point, which goes beyond disabilities and includes cognitive dispositions / learning styles. And this is the reason why redundancy[11] is so important both for accessibility and for teaching/learning. I.e. it is a matter of shifting the stress from disabilities to what people should be able to do, whatever their possible disabilities or ways of learning.

This shift is also apparent in WHO (World Health Organisation)'s decision to replace its former list of disabilities by the International Classification of Functioning, Disability and Health (ICF) <http://www.who.int/classifications/icf/en/index.html>, with the stress on functioning. I.e. the types of disabilities and the barriers mentioned by David W. Klein in his answers are important, of course, but secondary to the question: "How can I convey this message to everyone?" We used to have a project for furthering a culture of web accessibility in the Italian speaking part of Switzerland[12] . Among other things, we evaluated the accessibility of some local sites of public interest, and Luca Mascaro[13] , who was the accessibility specialist in the project team, showed me how it was done on 2 sites, then gave me the evaluation of the 3rd as homework. The site was so absurdly designed I didn't know how to start applying the criteria he had shown me. So I went: "If I were blind... dyslexic... paralyzed... had a language disability or was not a native speaker..." etc.

These are the same questions designers should start from - and the redundancy answer does not mean that the result is boring, on the contrary: they let each user make his/her own choices, according to what s/he can and wants to do with the content - both towards the purposes intended by the designer and his/her own ones. As Montaigne already put it: "A competent reader will often find in other people's works more and richer things than the author originally intended"[14] .

> I feel we need to be able to get across what this means in reality. For anyone interested in accessibility issues, I would highly recommend the UK's Joint Information Systems Council (JISC) "SimDis" resource, available at: http://www.techdis.ac.uk/resources/sites/2/simdis/. This has been set up to enable staff to experiment with various activities and simulations in order to gain a more personal understanding of how different conditions might affect student access.

Thank you for this resource, which I added to the ones of the wiki.

Your students might also be interested in the University of Wisconsin Madison's Accessibility

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11 On redundancy for accessibility, see "Access to Multimedia Textbooks and Instructional Materials" <http://www.tsbvi.edu/Education/mmtext.htm>:
"The foundation of accessibility for people with disabilities is the concept of redundancy. A foundation of redundancy allows the configuration of products, so an individual can access information and the computer in a method that is most beneficial and meaningful to that individual.
Accessibility to products is a compromise. All accessibility features do not need to be built into a product. However, the "hooks" or links to information for access for people with disabilities MUST be in place to provide access through existing accessibility tools. "
And the illustration of how this redundancy can be realized with normal, for-free tools in <http://accessibility4all.wikispaces.com/Doctorow_3Strikes_Death>

12 It stopped for lack of funding and available time, but we still coordinate on separate issues. The Italian-speaking part of CH was chosen as a target because Italy has very advanced computer accessibility law and rules, which serve as model for the EU directive, and in the elaboration of which Roberto participated with the Italian IWA team: that's why I joined Roberto's Webmultimediale.org project, because being a text person, I had never thought about multimedia access before.

13 See www.lucamascaro.info. Luca was also on the IWA team that elaborated the Italian accessibility law and rules mentioned in note 2 (note 12 in this PDF).

14 Essays, I, 23; my paraphrase. French text: "Un suffisant lecteur descouvre souvent és escrits d'autruy, des perfections autres que celles que l'autheur y a mises et apperceuës, et y preste des sens et des visages plus riches. " <http://www.bribes.org/ trismegiste/es1ch23.htm>. Montaigne would probably have loved the versioning capabilities of wikis btw, but that's another story.

Back to Content

Videos and Podcasts <<u>http://www.doit.wisc.edu/accessibility/video/</u>>

On Sun, Nov 29, 2009 at 4:04 AM, Leo M. Grassi wrote:

> My team has had to observe the Rehabilitation Act ammendments in every project we undertake. As a DoD component, it's simply the law, and it is stipulated in every statement of work. I can expound on requirements if interested, along with some interesting "case studies" I can share.
> Leo

This would be great, Leo, thanks! Yet while you are right in stating that "it's simply the law" - in countries fortunate enough to have a proper accessibility law - it will be easier to convince designers to implement it if the other advantages of accessibility are highlighted.

In February, the "Cultura senza barriere"[15] congress will take place at the University of Padua. As Alessio Cartocci writes in the presentation of his seminar:

> "...Speaking more explicitly of barriers, one could state that one of the yet unsolved and blatant problems is that accessibility is considered as a kind of "waterproof compartment", a module to be (often reluctantly) added to what is conceiced, designed and enacted without originally foreseeing full support for all. And sures, this approach already creates a huge barrier. Accessibility must therefore be freed from its (often unconscious) isolation that still leads to considering disabled persons as different from us, people to whom a "small favor" must be made, just in order to respect the law or - in case of fake moral qualms - in order to be pacify one's conscience. We need instead to think that every public service provided in any form is farm more useful and efficient if it is initially conceived with free access and use for all, without distinctions. ..."[16] .

3.8 Robert Becker

Nov 29, 2009 at 2:23 PM

A problem with Dave's notion of parity is that it can produce intrinsic design flaws for the sake of extrinsic benefits.

Design for the lowest common denominator is not a tide that floats all boats. I would argue that it's a politically correct mirage.

That said, I wonder if language fluency should be considered a "disability." If parity is truely what I'm after I had better not ignore disadvantages to learners for whom English is a second language and not even a close second.

So, to make a point, I could say that assigning Chaucer's Middle English or Shakespeare's Elizabethan text is to erect a barrier to learners. That may be, but to do otherwise is to erect an even greater barrier to Learning.

I recall a personal experience teaching English to inner city adult students trying to earn associate degrees. I dumped the prescribed reading list full of "accessible" texts and replaced it with real literature. The memory of watching most of my students successfully engage with Jane Austin will

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15 culture without barriers <<u>http://www. culturasenzabarriere.org</u>>; see also its YouTube channel with brief video presentations of the seminars <<u>http://www.youtube.com/user/ CulturaSenzaBarriere</u>>. The presentations are in Italian, but captioned: so you can get the automatic translation of the captions.

16 my translation; original at <<u>http://www. culturasenzabarriere.org/2009/ 11/liberare-l%E2%80% 99accessibilita/</u>>. Alessio Cartocci was also member of the IWA team mentioned in note 2 (note 12 in this PDF) who elaborated the Italian accessibility law and rules. And he is one of the co-founders Webmultimediale.org.

Back to <u>Content</u>

never fade.

In Learning generally there is no greater barrier than the absence of challenge and aspiration.

3.9 Maggie McPherson

Nov 29, 2009 at 3:22 PM
Responding to Claude's last post:

> Quite coincidentally, I happen to be teaching the topic of Accessibility this week.

> That's great: do you have a public site for this course?

This topic forms part of the MAICTE at Leeds, and although the programme is online, it isn't an open access course as such. Although there is probably too much content in this unit to post the entirety of it here, if anyone would like to see it, please send me an email - I'd welcome feedback to improve it further...

> Your students might also be interested in the University of Wisconsin Madison's Accessibility Videos and Podcasts [http://www.doit.wisc.edu/ accessibility/video/](http://www.doit.wisc.edu/accessibility/video/)

Thanks - I've posted a stop press to add this to their reading. In addition, I found a useful YouTube video from the Washington TheDOITCenter showing students and their views about assistive technology:: Working Together - People with Disabilities and Computer Technology [http://www.youtube.com/watch? v=X92Cd6jicko](http://www.youtube.com/watch?v=X92Cd6jicko)

3.10 Clark Quinn

Nov 29, 2009 at 4:41 PM

One reference I regularly hear from people is 'Universal Design': [http://en.wikipedia.org/wiki/ Universal_design](http://en.wikipedia.org/wiki/Universal_design)I wonder if the underlying principles:

1. [Equitable](#) use
2. [Flexibility](#) in use
3. [Simple](#) and [intuitive](#)
4. [Perceptible](#) information
5. [Tolerance for error](#)
6. Low physical effort
7. Size and space for approach and use

While not near as specific as your media design recommendations, are worth including, and maybe even thinking of as a layered design process (ala the learning design principles recently discussed).

3.11 Leo M. Grassi

Nov 29, 2009 at 8:26 PM

Claude,

Alessio Cartocci's words,

> "We need instead to think that every public service provided in any form is farm more useful

Back to [Content](#)

and efficient if it is initially conceived with free access and use for all, without distinctions. ..."

raises the question of whether personal creations destined for digitally distributed settings must always be maximally accessible. Barring some legislative statute, is it not up to the author to decide their intended audience?

3.12 Claude Almansi

Nov 29, 2009 at 8:47 PM

Hi Clark,

On Sun, Nov 29, 2009 at 4:41 PM, Clark Quinn wrote:

> One reference I regularly hear from people is 'Universal Design':
> http://en.wikipedia.org/wiki/Universal_design
> I wonder if the underlying principles:
> Equitable use
> Flexibility in use
> Simple and intuitive
> Perceptible information
> Tolerance for error
> Low physical effort
> Size and space for approach and use
> while not near as specific as your media design recommendations, are worth including, and maybe even thinking of as a layered design process (ala the learning design principles recently discussed).

Roberto will be able to answer you more accurately[17]: I am not a designer, I only strive to do things as accessibly as possible with already designed tools within already designed containers - so I didn't intend to make specific media design recommendations, rather to use concrete examples of how bearing accessibility in mind lead to some choices.

To my knowledge, yes, designing from scratch with access for everybody in mind - rather than "adding accessibility" afterwards - is at the basis of efficient accessibility. But I know there are disputes about the word "universal".

3.13 Claude Almansi

Nov 29, 2009 at 11:18 PM

On Sun, Nov 29, 2009 at 8:26 PM, Leo M. Grassi wrote:

> Claude,
> Alessio Cartocci's words, "We need instead to think that every public service provided in any form is farm more useful and efficient if it is initially conceived with free access and use for all, without distinctions. ..." raises the question of whether personal creations destined for digitally distributed settings must always be maximally accessible. Barring some legislative statute, is it not up to the author to decide their intended audience?

Hi Leo

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17 He has a seminar tomorrow, so please be patient.

Back to Content

I should have indicated the context there: Alessio Cartocci is writing about accessibility for public administration just before this passage, though what he says also applies to accessibility in general. Of course, you can't ask musicians to only write music with strong percussion beat so that deaf people can feel it with the soles of their feet, or artists to provide an alternative description of all their visual works.

And yet, some creators are finding the challenge of accessibility stimulating: see the part about Kyle Weems' "The HTML5 Super Friends" in http://accessibility4all.wikispaces.com/ - and see the video madeby Roberto Ellero of "Dio era tra noi", an opera by the indie rock group Malazeta on a text from Primo Levi's "If this is a man", with the narration sung in Italian sign language by Antonio Pellegrino, in <http://www.webmultimediale.org/malazeta/#video> - or his video of Marco Pernich's Il grande nudo rosso <http://www.webmultimediale.org/il_grande_nudo_rosso/#video>: in both cases, the video results from a collaboration with the spectacle's director.

Of course, you are right: creators must only do that if it is their own free choice. But you are touching a very sensitive issue: accessibility v. author's rights. Blind and deaf people have been asking for a restriction to international copyright treaties that would enable them to obtain accessible versions made in other countries for at least 27 years now: see "The 1982 WIPO and UNESCO Working Group on Exceptions for Access to Protected Works for Visually and Auditory Handicapped Person" <http://www.keionline.org/blogs/2009/05/30/1982-wipo-unesco-meeting>. And the 2009 proposal by Brazil, Ecuador and Paraguay, of a WIPO "Treaty for the blind, visually impaired and people with reading disabilities" is being opposed with almost exactly the same arguments as in 1982 by the richer countries representing the own-foot-shooting position of the content industry (see keionline.org texts tagged "Treaty for blind and other reading disabilities" <http://www.keionline.org/taxonomy/term/66>).

Or take, more concretely, the US Chafee Amendment <http://www.loc.gov/nls/reference/factsheets/copyright.html>, which "allows reproduction for blind or other people with disabilities" - but only by "authorized entities". Would a teacher making a captioned version of a YouTube video by streaming it to DotSUB.com or Overstream.net be considered as an "authorized entity"? Special education teachers yes, according to the FAQ of the quoted page - but other teachers?

I don't know the answer. But I wouldn't do it with the videos of <http://www.youtube.com/user/warnerbrosonline> without asking.

3.14 Bev Ferrell

Nov 30, 2009 at 6:45 AM

David,

Thank you for the list of possible issues.

Leo, you mentioned dealing with accessibility as a built in requirement. As a matter of design, what kind of approach does the team take? Try to consider all issues? Survey for those present? or take a universal design approach? The checklist indicates some items to check when you are done, but it doesn't really consider how to start the design process in addressing issues.
http://www.webaim.org/ standards/508/checklist

Back to Content

3.15 Alice Goodwin-Davey

Nov 30, 2009 at 8:18 AM

Here at the University of South Africa, we are a distance education institution, and we find that we have a higher proportion of students with disabilities who are registered because they don't have to find accommodation or transport to campus, etc. For instance, now we have about 2000 students registered with the Advocacy & Resource Centre for Students with Disabilities, which is probably more than all such students at the contact universities combined.

Now that we are doing more and more online, we have to take this into consideration and make sure that our electronic materials are not too dependent on the mouse, too many multiple windows, etc. so it does affect how we design and which programs we use, etc.

Alice Goodwin-Davey
Directorate: Curriculum & Learning Development
Unisa, Univ of South Africa

3.16 Claude Almansi

Nov 30, 2009 at 10:32 AM

I second Bev's question to Dave:

On Mon, Nov 30, 2009 at 6:45 AM, Beverley Ferrell wrote:

> David, Thank you for the list of possible issues.
> Leo, you mentioned dealing with accessibility as a built in requirement. As a matter of design, what kind of approach does the team take? Try to consider all issues? Survey for those present? or take a universal design approach? The checklist indicates some items to check when you are done, but it doesn't really consider how to start the design process in addressing issues.
> http://www.webaim.org/ standards/508/checklist
> Bev

Because as I said in another reply in this discussion, I am not a designer, I only try to choose and use already designed resources with accessibility in mind. From what I understood of the explanations by people who do design - for instance Luca Mascaro (<http://www.lucamascaro.info>) is that one particularly efficient approach is UXD, i.e. user experience design, where users are involved in testing the product during its elaboration, including users with various types of disabilities. More expensive than only going by what a contract requires, but in the long run, the difference in price is compensated by the greater efficiency of the product.

At Alice Goodwin-Davey:

> On Mon, Nov 30, 2009 at 8:18 AM, Goodwin-Davey, Alice wrote:
> (...)
> Here at the University of South Africa, we are a distance education institution, and we find that we have a higher proportion of students with disabilities who are registered because they don't have to find accommodation or transport to campus, etc. For instance, now we have about 2000 students registered with the Advocacy & Resource Centre for Students with Disabilities, which is probably more than all such students at the contact universities combined.

Back to Content

> Now that we are doing more and more online, we have to take this into consideration and make sure that our electronic materials are not too dependent on the mouse, too many multiple windows, etc. so it does affect how we design and which programs we use, etc.

Thank you for sharing your experience. By coincidence I just received an e-mail from M. Cahill of <http://www.mediaaccess.org.au >, where he indicates their page on resources about media accessibility and education: <http://www.mediaaccess.org. au/index.php?option=com_ content&view=category&layout= blog&id=21&Itemid=92> (or <http://tinyurl.com/ mediaaccess-education>).

3.17 Leo M. Grassi

Nov 30, 2009 at 10:28 PM

We take a universal approach in that, at a minimum, artifacts must meet level "A" conformance according to W3C WCAG 2.0 guidelines. We have incorporated current guidelines even though the CFR dated December of 2000 still mentions WCAG 1.0. Additionally, our iterative development process integrates screen reader and human testing, as well as validation and test logs should the resources be outsourced.

3.18 David M. Klein

Dec 1, 2009 at 5:04 PM

I agree with Robert Becker that these issues can make design decisions hard. But there's a substantive difference between choosing difficult reading materials and disability barriers.

The learners studying Middle English probably have the capacity to get better at reading the idiom with practice, as was demonstrated, but if you repeatedly present a textbook to someone who is blind, he will never get better at reading it. In effect, putting barriers up for people with disabilities is denying them access to the information because of a personal characteristic they can't change. In one sense, that makes this a civil rights issue, as was argued in the passage of the ADA.

To design instruction, as instructional designers we have to decide what our goals and objectives are, and then find ways to meet those goals. If your objectives include teaching students to appreciate classic works in their original language (Middle English), then the materials should be provided to them in Middle English at some point. Would it matter if the materials were provided in large print or using audio books? Where learners with visual and learning disabilities would probably benefit from these media choices, I would suggest that these choices could benefit other learners who don't have disabilities. And it's likely the addition of these media would not detract from the learning experience.

One of the major issues in accessibility is for us as designers to evaluate what we want as outcomes and then to find a way to allow everyone the capacity to achieve those outcomes.

3.19 Beverley Ferrell

Dec 1, 2009 at 7:48 PM
We have been discussing areas that mostly deal with visual or hearing type issues, but the cognitive issues need to be addressed also.
http://juicystudio.com/article/cognitive-impairment.php

Back to Content