

# Southampton Accessibility Tools

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## ABSTRACT

In this paper, we describe three tools that facilitate 'crowdsourcing' open source development to help overcome accessibility, usability and productivity issues identified by disabled students.

## Categories and Subject Descriptors

K.4.2 Social Issues - Assistive technologies for persons with disabilities

## General Terms

Design, Human Factors

## Keywords

accessibility

## 1. INTRODUCTION

The Access Technologies Team at the University of Southampton School of Electronics and Computer Science (ECS) has developed a series of tools to help overcome accessibility, usability and productivity issues identified by disabled students. One of the points that arose out of the JISC funded LexDis project<sup>1</sup> was the degree to which students were able to use their assistive technologies with Web 2.0 type services such as Facebook, blogs and wikis. It was found that those who did not need access tools, such as screen readers or keyboard only access, did not necessarily use their text to speech or spell checking software in these situations. There were also many students who did not have these technologies but still wanted to check their spelling and to change the look of the web pages they were reading. There were also those who wanted to access the web when using computers in other places and they needed some form of support. An issue that also arose was the general inaccessibility of some of the Web 2.0 sites and so it was decided that a more comprehensive approach was needed which is described further in this paper. Working through the issues discussed, a chart of document types was produced to enable the team to make the flash drive application choices and add to the JISC TechDis Accessibility Essential Guides, which cover the creation of accessible Word, Adobe PDF and PowerPoint documents for on-line use. The tools have been

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beta tested by ECS MSc students as part of their coursework and assessment for a module on assistive technologies and universal design.

## 2. TOOLBAR

Although most browsers offer ways to change the look and feel of websites whether through colour or text changes and the use of add-ons such as text to speech, these only work within that particular browser. It was felt that it would be useful to have a toolbar that would work with all browsers and with the majority of accessible websites. The Toolbar allows for text resizing, colour changes and text to speech. It can also be used with forms to check spelling and meanings of words. There is a tool for grabbing a web page's information such as the author, date and URL which may be handy when capturing sites for referencing and many other ideas have come up in discussion with those testing the toolbar. The toolbar has a Fix the Web report form feature that has been developed in collaboration with Fix the Web<sup>2</sup> and allows users to report any accessibility problems with web sites. The Toolbar can be downloaded<sup>3</sup> under the BSD Open Source license has been used more than 3 million times<sup>4</sup>. Not everyone wanted all the features on the toolbar and it lacked the flexibility of allowing people to easily develop and add new features and so we developed AtKit as an extensible toolbar framework to allow people to build toolbars for their web sites or to choose to personalise a toolbar as a bookmarklet that could sit within any browser they wished to use, with the tools of their choice. The framework allows cross-browser toolbars to be created with ease, by eliminating the reliance on browser-dependent plugin architectures and instead using a common language for all: JavaScript. When developing a toolbar, the programmer simply needs to tell the page to download the AtKit library, and then sets up some simple JavaScript to define names, logos and finally an array of buttons that they want on their toolbar. As the project is open-source, we plan that a community will develop around the framework, and the buttons developed by different authors. This will allow people to share their code and work buttons as well as allowing the toolbars to be available in many languages. An example toolbar has been created using the framework along with a video and code<sup>5</sup>. You can either select it, opening it on that page, or add/drag it to your bookmarks bar for later use. There is limited functionality at this stage, but it is the framework (rather than the currently included features) that we think is ground breaking. It is simple to use, requires no installation, is cross browser with flexible personalised features and will even work on the iPhone and iPad.



Figure 1. Toolbar

### 3. ACCESSIBLE MENU

There are many portable pen drive applications that can help with accessibility, productivity and leisure activities when on the move but these can be rendered virtually useless without an accessible pen drive menu. An accessible menu<sup>vi</sup> has therefore been developed to help with navigation to these applications. The settings allow for colour and font changes, large text and keyboard access. This pen drive has been developed for staff to check the accessibility and usability of websites and applications but should also be useful for students. The tools that have been used to test the Web 2.0 services and applications have been added to the Access Tools download page along with a page of instructions.



Figure 2. Accessible Menu

### 4. WEB2ACCESS

A website was developed that allows users to test any Web 2.0 site or software application against a series of checks<sup>vii</sup> linked to the WCAG 2.0<sup>viii</sup> and other guidelines<sup>ix, x, xi</sup>. Over 150 Web 2.0 services have already been checked and results can be viewed for each site or for a particular disability. A wizard offers a step by step walk through with links to the techniques used for others to independently conduct tests. Web2Access will help students, teachers and course developers to check the accessibility and

usability of websites and applications they will be expected or required to use during their studies.

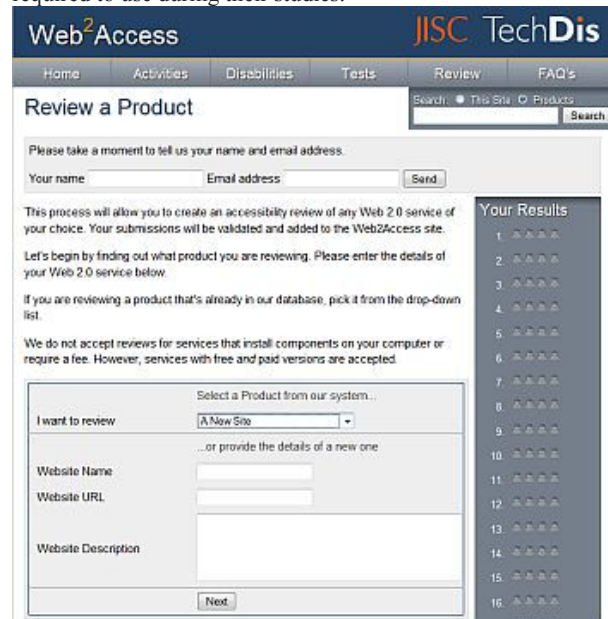


Figure 3. Web2Access

### 5. CONCLUSION

Web2Access allows users to test any Web 2.0 site or software application against a series of checks linked to the WCAG 2.0 and other guidelines. The Access Tools accessible menu helps with navigation to portable pen drive applications that can help with Web2Access evaluations, accessibility, productivity and leisure activities when on the move. The accessible toolbar provides support for the majority of browsers and accessible websites through magnification, text and page style, colour and layout modification, spell-checking, text to speech readout, dictionary definitions and referencing and Fix the Web reporting. A video demonstration is available for downloading<sup>xii</sup> and is also available on Synote<sup>xiii</sup> captioned. If users wish to annotate the recording on Synote they need to register before logging in with their registered user name and password, otherwise they can go to the "Read, Watch or Listen Only Version". The panels and size of the video can be adjusted and the size of the text can also be enlarged.

<sup>i</sup> [www.lexdis.org.uk](http://www.lexdis.org.uk)

<sup>ii</sup> <http://www.fixtheweb.net/toolbar>

<sup>iii</sup> <http://access.ecs.soton.ac.uk/ToolBar/>

<sup>iv</sup> <http://www.access.ecs.soton.ac.uk/projects/toolbar/stats>

<sup>v</sup> <http://www.devx.co.uk/ATBar/>

<sup>vi</sup> <http://www.access.ecs.soton.ac.uk/projects/accessTools>

<sup>vii</sup> <http://www.web2access.org.uk/test>

<sup>viii</sup> <http://www.w3.org/TR/WCAG20/>

<sup>ix</sup> <http://www.universaldesign.ie/useandapply/ict/itaccessibilityguidelines/applicationsoftware/guidelines/>

<sup>x</sup> <http://www-03.ibm.com/able/guidelines/software/accesssoftware.html>

<sup>xi</sup> <http://www.itic.org/resources/voluntary-product-accessibility-template-vpat/#1194.21>

<sup>xii</sup> [http://users.ecs.soton.ac.uk/mw/recordings/Mike Wald/Access toolkit2/Access toolkit2.wmv](http://users.ecs.soton.ac.uk/mw/recordings/Mike%20Wald/Access%20toolkit2/Access%20toolkit2.wmv)

<sup>xiii</sup> <http://www.synote.org/synote/recording/replay/55576>