

EAHIL Workshop

Implementation of quality systems and certification of biomedical libraries
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Quality of Biomedical Libraries Webpages: a survey

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Abstract

It is widely known the great extent of Internet and its role as a vehicle for the information and knowledge, for this reason web sites should be designed to be accessible to all people (Universal design). In Italy recent provisions of law (Law n. 4, January 8, 2004) focused the attention on problems related to web sites accessibility and especially to those belonging to public administrations.

In 2003 our Library joined the CABI project (Campaign for Accessibility of Libraries on the Web) and becoming more sensitive to the accessibility problem tried to develop its web pages according to international standards (W3C, WAI, etc.).

A representative sample of the Italian Biomedical Libraries Homepages was selected and carefully examined in order to assess their compliance to accessibility standards.

Different validation software were used to ensure a greater reliability to the survey and to evaluate several accessibility aspects and the priority level reached by web sites under study.

The results are really not very encouraging and draw a current scene in which the main feature is represented by the fact that the sample achieved a low rate of accordance to the rules of accessibility stated by International standards.

This may be considered as a symptom of a lacking sense to the problem. On the other hand it seems to be much more spread the trend to update web pages content rather than allow easier and faster accessibility.

It is widely known the great extent of Internet and its role as a vehicle for the information and knowledge spreading. This is especially true for Libraries whose primary goal is to provide access to knowledge and learning, offering services to all, regardless of any distinction. For this reason Library web sites should be designed to be accessible to all people (Design for All, Universal Design, Inclusive Design, etc.).

In 2003, "The European Year of People with Disabilities", our Library joined the CABI Accessibility Project¹ and becoming, more sensitive to the accessibility problems, tried to develop its Webpages according to international standards (W3C, WAI, etc.).

In the same year we conducted a preliminary study² on a small number (n=21) of Italian Biomedical Libraries Homepages using the software Bobby Watchfire³. Fig.1 illustrates the results. Data show that in the 61% of examined web sites there was any compliance with the W3C standards.

The WCAG 1.0 (Web Content Accessibility Guidelines) recommendations draws up a list of checkpoints and defines for each of them three priority levels and corresponding conformance levels:

Priority 1	checkpoint must be satisfied	Conformance Level "A"	all Priority 1 checkpoints are satisfied
Priority 2	checkpoint should be satisfied	Conformance Level "AA"	all Priority 1 and 2 checkpoints are satisfied
Priority 3	satisfying this checkpoint will improve access	Conformance Level "AAA"	all Priority 1, 2 and 3 checkpoints are satisfied

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Two years later, under the recent Italian provisions of law (Law n.4, January 8, 2004⁴, Decree of the President of the Republic n. 75, March 1, 2005⁵) we decided to discuss again such a delicate subject, increasing the sample under evaluation and considering a wider range of accessibility issues in order to assess its compliance to accessibility standards and guidelines.

A sample of Italian Biomedical Libraries Homepages, consisting of 51 websites, was selected, carefully examined and evaluated many times during the current year and once again for the last time from May 16th to May 31st 2005. Libraries websites have been chosen from those located at the URL <http://medicina.unica.it/biblio/catalog.htm>. The studied set includes Libraries with a long tradition of presence on the Web and according to our experience represents a significative sample of the Italian Biomedical Libraries. Gathered data refer to 49 Libraries as two web sites haven't been available during the last evaluation period.

The methodology of our study has been based essentially on the use of different validation software (Fig.2) to evaluate the conformance level reached by the sample, the accuracy of HTML, the use of Cascading Style Sheet, the foreground and background colour combination. An expert human review was required too to analyze problems (validation of some checkpoints) that couldn't be automatically verified. Some others aspects were considered: the presence of frames, last update indication, other language version.

To estimate the level of conformity to the WCAG guidelines, we used three different tools, experimenting a very good concordance among them. Findings (Fig.3) show the percentage of homepages that doesn't comply with the standards. The percentage has not changed significantly if compared with the results in 2003 survey (61% vs. 60%). We can notice, instead, the increase of Libraries to which can be assigned the conformance level "AA" or "AAA".

Most commonly experienced error was the lack of an alternative text (ALT") for images and non text element: about the 90% of the uncompliant homepages doesn't respect this checkpoint, furthermore 7 Libraries were provided with frames homepages. Frames are considered a deprecated element very confusing for the users, however, also these pages have been evaluated: only two of them had a link to a no frames alternative page.

We have then considered the aspects related to the colour used in Webpages in order to estimate their accessibility by persons with colour perception deficit.

The difference between background brightness, and foreground brightness (CB) should be greater than 125 and the difference between background colour and foreground colour (CD) should be greater than 500 (according to W3C formulas). We found values greater than 125 in the 57% of the cases with regard to CB (Fig.4) and values greater than 500 in the 70% of CD instances (Fig.5). A little number of pages was only partly compliant (OPC) in both cases.

The accuracy of HTML syntax has been tested using the WDG HTML Validator; only 10 out 49 homepages seemed to be correct (Fig.6). Once again the most frequent error was the absence of a valid alternative text to images ("ALT").

These data are in accordance with the ones relating to conformance level. According to HTML standards, every HTML page requires a document type declaration: in our sample it was indicated only in 18 cases.

The CSS was used in 22 cases on 49.

Finally only the 43% of the sample quoted the date of last revision and only in the 12% of it was present a bilingual version.

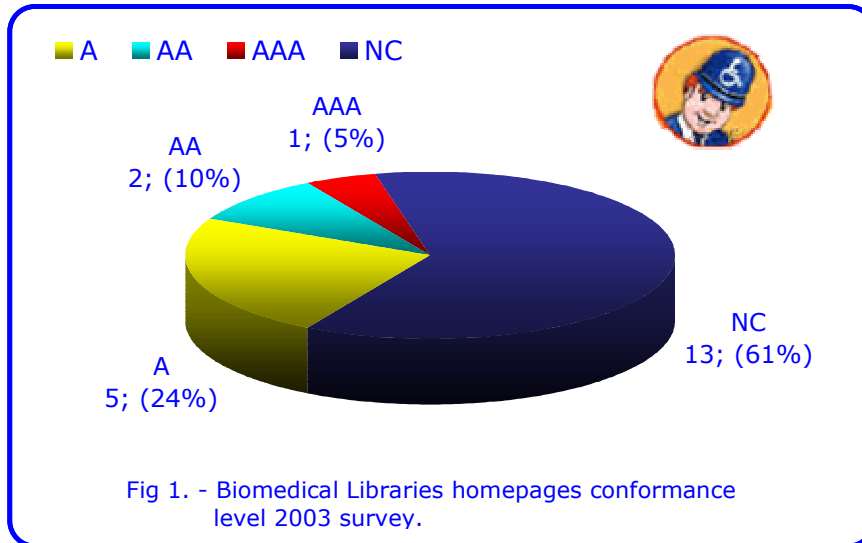
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rules of accessibility stated by International standards. This may be considered as a symptom of a lacking sense to the problem.

It must be said that with small arrangements and a hardly greater attention in Webpages writing, in a greater number of cases the minimum requirements of accessibility could be satisfied. This is very important to allow easier and faster accessibility to disabled people.










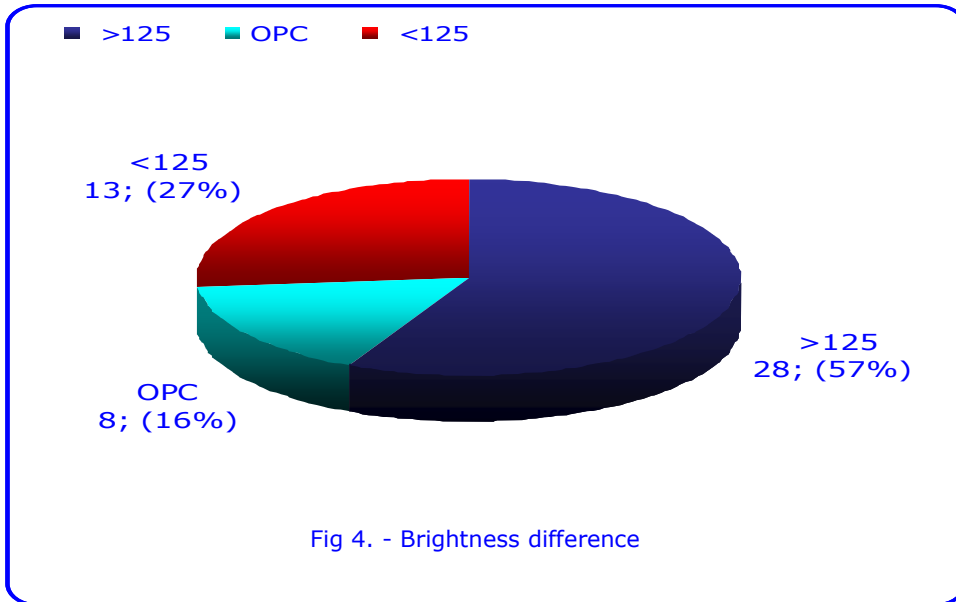
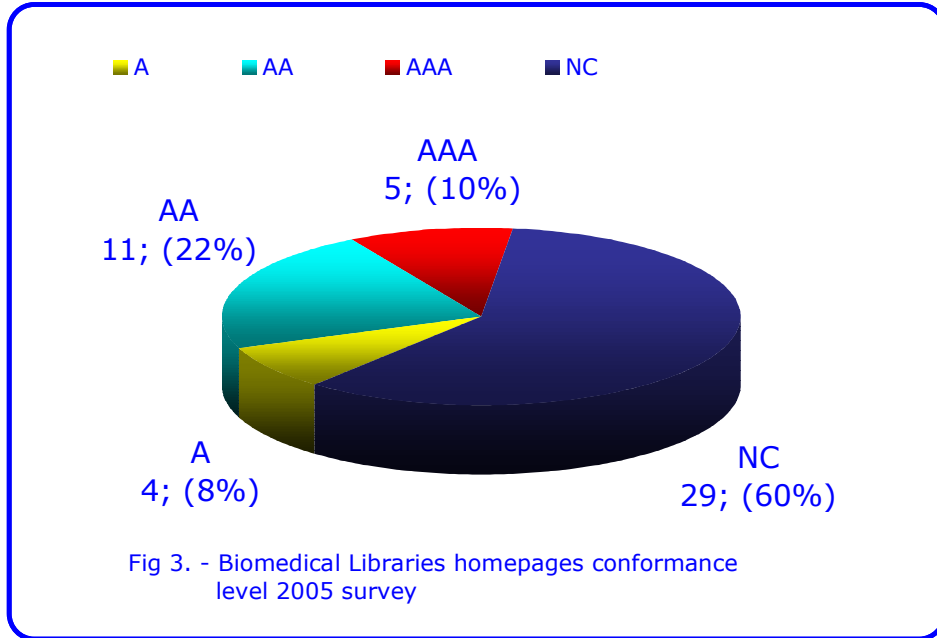
	Colour Contrast Analyzer < http://juicystudio.com/ >	This software allows to check the contrast of two colours using the W3C's colour contrast algorithm by specifying the colours directly.
	T.A.W. < http://www.tawdis.net/ >	TAW means "Test de accesibilidad web". It is a Spanish tool for the analysis of the web pages accessibility level.
	Torquemada < http://www.webxtutti.it/ >	This Italian software offers to web developers a complete methodology of accessibility analysis.
	The Wave < http://www.wave.webaim.org/ >	A validation software developed by WebAIM (Web Accessibility in Mind)
	WAVE 3.0	
	WEBXACT < http://www.watchfire.com/ >	This Watchfire's Accessibility module scans properties for a comprehensive accessibility check
	WDG HTML Validator < http://www.htmlhelp.com/ >	A validation tool for HTML syntax

Fig. 2.- Softwares used in the survey

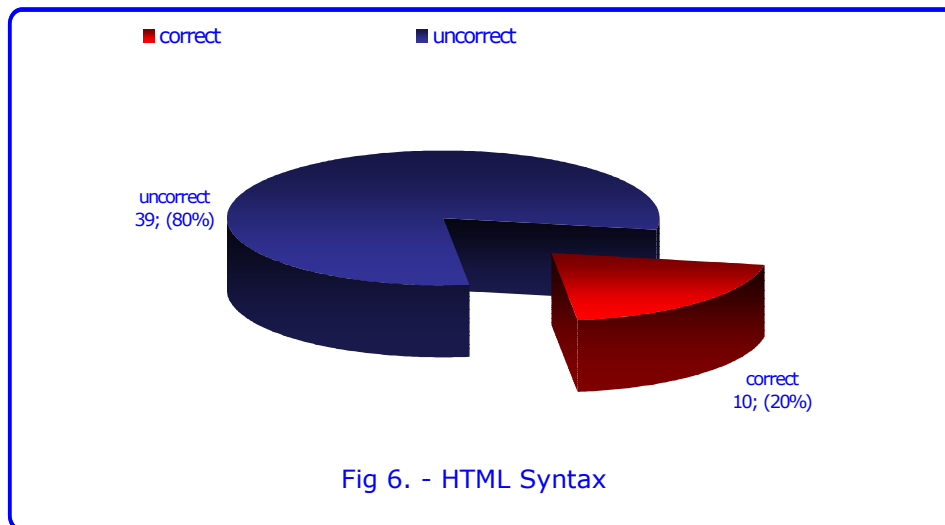
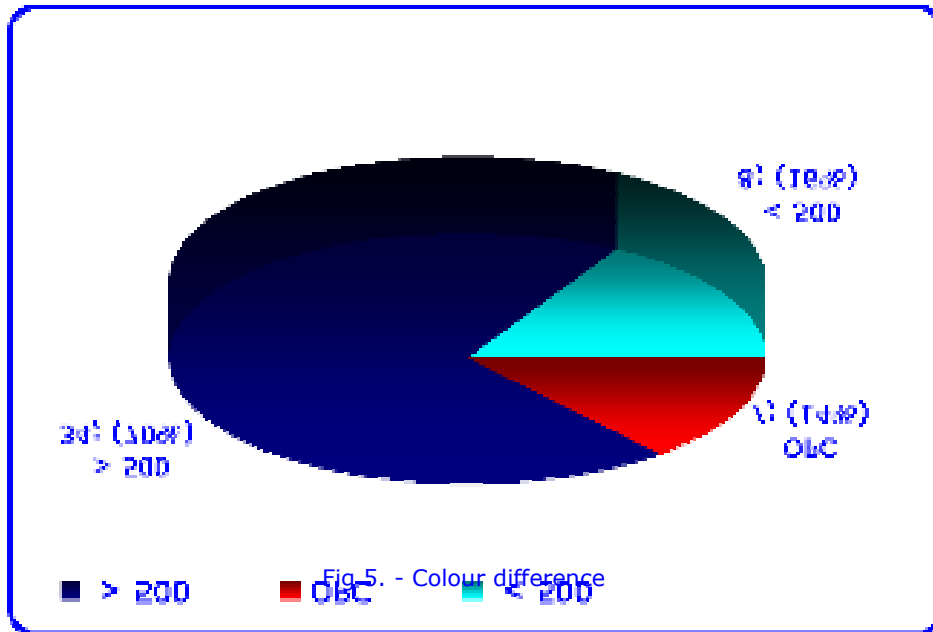
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¹ Campaign for Accessibility of Libraries on the Web <<http://marciana.venezia.sbn.it/CABI/>>

² <<http://www.aib.it/aib/sezioni/sardegna/cabi.htm>> Cagliari, March 7, 2003 - unpublished data

³ <<http://bobby.watchfire.com/bobby/html/en/index.jsp>>

⁴ Law n.4, January 8, 2004 Provisions to support the access to information technologies for the disabled

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⁵ Decree of the President of the Republic, March 1, 2005 n 75

Implementation Regulations for Law 4 / 2004 to promote the access for the disabled to computer technologies