

Letters

Is your web site legal?

From Roger Gladwin
LTSN Physical Sciences
University of Liverpool
Crown St
Liverpool L69 7ZD
rgladwin@liv.ac.uk

Many of us now are web producers. We may be placing lecture notes on departmental or institutional web sites, producing whole web sites for our teaching or maintaining web sites for our departments. Tools are now available to make web pages quite simply; but I would advise caution. Is your web page/site legal? At the recent *Variety in Chemistry Teaching* meeting at Lancaster it was clear that some participants were unaware of recent legislation covering the needs of disabled students in education. This prompted me to write to alert colleagues to the situation.

Disability Discrimination Acts

The *Disability Discrimination Act 1995* outlawed discrimination against disabled people in employment, the provision of goods and services and the selling/letting of property. Education was exempted. However, the *Special Education Needs and Disability in Education Act 2001*, which became law on 11th May 2001, legislates for the prevention of discrimination against disabled staff and students in the provision of education, training and other related services. From September 2002 the new legislation is effective, although there is an additional year (until September 2003) to allow the incorporation of reasonable adjustments (e.g. induction loops) and a further two years (until September 2005) for physical adjustments to be made (e.g. access to buildings). At present, Northern Ireland is excluded from this new legislation.

This new law affects education and training providers (i.e. further and higher education institutions, local education authorities, adult and community education and youth provision) and covers more than the web or even C&IT issues. An institution is required to take 'reasonable steps' to ensure discrimination is avoided. However, the level of responsibility needs to be judged against criteria for what is 'reasonable'. These might include:

- The need to maintain academic standards
- Availability of funds and cost of adjustments
- Practicality
- The interests of other students
- Health and safety

What does this mean for web producers?

The implications for education are wide reaching and are still being interpreted, but for the web it is likely that the producer will be considered legally responsible for compliance. In reality it is probable that, in the event of a dispute, arbitration and conciliation will resolve the situation. But if a student continues the complaint to the limit, it may be the web producer who ends up in court! Thus, it is wise to ensure that your web pages/sites comply with the criteria of this new legislation.

What might this mean in practice?

A web developer needs to keep in mind the potential users of the information being presented on the site. How will they find their way to the information they need and how will they interact with the site? This is true for all cases, not just for disability access, and it is argued that 'good' web design will aid the developer in meeting the requirements of the Act. Thus, if a web site is largely based around graphics or multimedia, as may well be the case for the sciences, then an alternative way of presenting the information may be required. Some examples:

Use alternative text for graphics. This helps if the user turns 'load graphics' off or uses a text-based browser.

Select non-justified text, as this may be more readable for dyslexic readers.

Choose colour combinations carefully as some can cause problems for the colour-blind (particularly red/green combinations).

Use scrolling text, animated graphics, horizontal lines, etc., sparingly. These may look attractive but too many can be a distraction for users who need narration software to interact with the web.

Enabling technologies

Enabling technologies (e.g. screen audio readers, text magnifiers, Braille converters) can improve accessibility of web sites, and many operating systems have add-ons that can be installed. However, these additions can also present their own difficulties. For instance, it

may be impossible to test web sites with the enabling technologies; performance and functionality may be compromised if web pages are adapted to work with these technologies; and delays in setting up the adaptation may still disadvantage the disabled student. Thus, where possible, reliance on these technologies should be avoided.

Where can you find support?

The Learning and Teaching Support Network (LTSN).

The LTSN Physical Sciences Subject Centre (<http://www.physsci.ltsn.ac.uk>) is able to advise on web design.

World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI).

This consortium promotes web accessibility and produces guidelines for web developers. <http://www.w3.org/WAI>

CAST Inc.

This organisation offers the free software Bobby, which allows users to check web pages and whole sites for accessibility. <http://www.cast.org/bobby>

Technology for Disabilities Information Service (TechDis).

The Joint Information Systems Committee (JISC) has set up this service to support institutions wishing to ensure compliance with the Act.

<http://www.techdis.ac.uk>.

The JISC Legal Information Service.

This service was set up to respond to the issues and concerns generated by the new legislation. <http://www.jisc.ac.uk/legal>.

Further information

Disability Discrimination Act 1995

<http://www.legislation.hmso.gov.uk/acts/acts1995.htm>

Special Educational Needs and Disability Act 2001

<http://www.legislation.hmso.gov.uk/acts/acts2001.htm>

HEFCE Publication 99/05: Guidelines for Accessible Courseware is generally applicable but Appendix 2 particularly relates to web design issues.

<http://www.hefce.ac.uk/Pubs/default.asp>

JISC Senior Management Briefing Paper 15, Disability, Technology and Legislation,

September 2001, presents a useful synopsis of the current situation.

<http://www.jisc.ac.uk/pub/index.html#briefing>.

Learning in the Laboratory

From Daniel S. Domin

Department of Chemistry

University of Wisconsin-Fox Valley

Menasha, WI USA

I read with great interest the article by Johnstone and Al-Shuaili¹ that recently appeared in your Journal. In it the authors address many important aspects of learning in the science laboratory: its purpose, the strategies available, and how learning may be assessed. While I laud the authors' efforts to familiarize your readers with developments in the field of science-laboratory instruction, I am disturbed by the apparent lack of rigour when it comes to citing their sources. For example, Table 1 (p. 45) of their paper comes directly from an article (p. 543) I had published in the *Journal of Chemical Education* back in 1999.² Also, I believe much of what Johnstone and Al-Shuaili say regarding different styles of laboratory instruction should be attributed to the same paper. Lastly, the authors mistakenly attribute a quote to me (p. 44) that should be accredited to the late Miles Pickering.³

References

1. A. H. Johnstone and A. Al-Shuaili, *U. Chem. Ed.*, 2001, **5**, 41.
2. D. S. Domin, *J. Chem. Ed.*, 1999, **76**(4), 543.
3. M. Pickering, *J. Chem. Ed.*, 1987, **64**, 521.

Editor's note.

Following receipt of this letter, Professor A H Johnstone modified their review to take account of these points and it is the modified version that is now on p. 42. See also the following letter.

Dear Editor,

We must begin by apologising to Dr Domin, to you and to your readers for a serious omission in our review paper. A paragraph, attributing a section of the paper to Domin's published work, was omitted in error during the series of revisions that the paper underwent prior to publication. This has now been rectified in a new version of the paper that you have been kind enough to publish. The reference to the

late Miles Pickering has also been correctly attributed.

Since this was a review paper, we were not claiming any originality of our own for what we were reporting and so there was no question of intentional plagiarism. The problem arose from a genuine, but regrettable

mistake for which we accept entire responsibility.

Yours sincerely,

A. H. Johnstone and A. Al-Shuaili