

Designing Resources for the Web

Many teachers will have considered designing resources for the Internet. Your work will be accessible to all your pupils at all hours. It can also be easily up-dated and amended. The idea sounds almost too good to be true!

However, if you intend to design for the web there are a number of issues which need to be carefully thought through before you consider even twitching a mouse. These issues fall into two main areas, technical and design. In addition, there is the issue of time – when are you going to (i) design, (ii) write, (iii) up-load and (iv), most importantly, maintain?

Technical issues

Technical issues can vary from the experience of up-loading your material to the Internet to the intricacies of html (hyper text mark-up language), the language in which WebPages are written. If you work in a large educational institution, the former can usually be handled by your technical staff. On request, they may provide the appropriate url, password and expertise .

Alternatively, you could use your private ISP (Internet Service Provider) to host your site. Up-loading websites is relatively straightforward, most ISP's offering free web space (10 Mb is typical), help lines and help-pages. You will require you require some information from your server:

- FTP (file transfer protocol) Host Address - for example, Virgin's is *upload.virgin.net*
- FTP Site User Name - usually your login user name
- FTP Site Password - usually your normal password

You will also need appropriate software to transfer your files to your web space. There are many such programs available.

Design issues

This paper concentrates on the perhaps, most important area, that of designing for the web. What should you consider if you want your material to be available, accessed and used ? Are you looking for a single page or short series of pages or are you considering a much more ambitious project ?

An example of a useful single page could be a simple list of laboratory rules

(<http://www.sheffcol.ac.uk/projects/access_online/Health_Science_Access/Practical_Skills/lab_rules.htm >). New students can be asked to find this page, print a copy and subsequently keep it in their files. This task has the dual benefit of forcing the student to use the internet, but also of

alerting them to the importance of following set procedures in the laboratory.

In March 2001, I made a short presentation at two ASE Regional conferences, 'a guide to useful websites and how they can be integrated into class teaching.' I wanted delegates to these conferences to be able to leave with an easy method of accessing the links to which I referred during my presentation. The obvious method was via a linked series of WebPages. The presentation was designed to cover four areas - 'classroom use,' 'resources,' 'links' and 'staff development.'

I wrote the sequence of pages, ensured that all the links were live and made the site available both via floppy disc at the conferences and via the Internet (< http://www.sheffcol.ac.uk/projects/access_online/ASE/home.htm >). This series of five pages met my need and saved delegates the unenviable task of attempting to copy a series of url's.

An example of a larger, more ambitious site is a resource concerned with teaching Radioactivity (<http://www.sheffcol.ac.uk/projects/access_online/Health_Science_Access/Chemistry_1/Radioactivity/home.htm >). This was designed using a flow-chart on a single side of A4, the overview was written before the mouse moved. The resource was originally targeted at Science Access students. The youngest student will be 21, the average age is 29/30 but there is a wide age range. Academically all the students are undertaking a Level two/three Access to HE programme with the aim of progressing onto and through Higher Education, hence, for successful progression, they require good ICT skills. However, I believe that this site could find uses with many GCSE and Advanced level students: homework exercises, suitable links and some interaction are included.

Each of the pages is of a similar format. This style was discussed with a number of colleagues, amendments occurring as the style developed. This development of a common style allowed one page to act as a template as other pages were written. An alternative format was also considered - this had the navigation links included in a side bar - discussion and reflection resulted in the decision to go for an identical bar at both the top and bottom of each page. The use of white space and short blocks of text aims to enhance readability and promotes a quick speed of appraisal of the contents. The information provided is concise and the pitfalls of too much text in a confined space are mainly avoided. Some pages require scrolling but the amount of scrolling required to view any page is relatively low.

Most of the pages on this site utilise a number of common elements:

- (i) Title and introductory paragraph. These aim to set the scene for the page.
- (ii) The common navigation line. This includes an email link. Hence comments from users have influenced subsequent developments.
- (iii) 'up arrows' - these return the user to the top of the page, but leave the title bars off the screen to the top.

(iv) Date of last update. This is important, evidence of recent up-dating reassures the user that the site is always under review. In total, 20 pages, with almost 30 other files are currently available. The total disc space is less than 10 MB.

The site attempts to use a small number of relevant graphics. Each has ALT text in order to improve accessibility, for example, < alt="bobby approved graphic" >. The graphics came from a variety of sources: other websites, Paint files, Word files and photographs. Graphics within Word files can easily be made suitable for insertion onto a webpage. The Word file is saved as a web page, hence the graphic is converted to a gif image. The image can then be linked to the webpage. Most of the photographs were taken using a ten year old Pentax SLR. On developing, the photographs were also placed on CD. This is a cheap and easy way of obtaining a series of high-quality images in a digital format (.jpeg). The CD, typically costs less than £5.00 and can take up to four films, although prices vary considerably. However, this process is a lot quicker and easier than attempting to scan your photographs into digital format. The only drawback is the file size, each photograph is some 400 kB. This can lead to a slow loading problem if some of your pages are accessed via the Internet. However, when accessed via an Intranet or CDRom, these problems are minimal. Use of graphics software can reduce the file size considerably.

Hot Potatoes (< <http://www.halfbakedsoftware.com/> >) is an excellent piece of software which enables you to create interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises for the Internet. Some examples of pages created using Hot Potatoes are included in the radioactivity site. For example, the apparatus quiz (<http://www.sheffcol.ac.uk/projects/access_online/Health_Science_Access/Chemistry_1/Radioactivity/apparatus_quiz.htm >) asks the user to identify photographs of various pieces of apparatus which are commonly used in radioactivity experiments. This is excellent when projected onto a large screen in front of a class. Hot Potatoes is not freeware, but it is free of charge for non-profit educational users who make their pages available on the web. Other users must pay for a licence. Hot Potatoes was created by the Research and Development team at the University of Victoria Humanities Computing and Media Centre.

The pages have also been assessed using Bobby 3.2. This software (< <http://bobby.watchfire.com/bobby/html/en/index.jsp> >) was created to help web page authors identify and repair barriers to access by individuals with disabilities. It provides details on how to make your site accessible to people with disabilities. You can ask Bobby to look at your web site. This tests one page at a time in order to provide a preview of the purchasable downloadable version, which can test an entire site as a batch. Vischeck (< <http://www.vischeck.com/vischeck/vischeckImage.php> >) can check images to see how they appear to those who have colour impaired vision. Other accessibility issues are considered on the RNIB Campaign for Good Web Design website (<, <http://www.rnib.org.uk/digital/welcome.htm> >), although many other links are available

(< http://www.sheffcol.ac.uk/links/Internet/Accessible_Internet/ >).

Most of the websites described in this paper were written by a combination of accessing and altering the source code (view/source, when using Internet Explorer) and the use of Dreamweaver v3.0 (< <http://www.macromedia.com/software/dreamweaver/> >), a commercial piece of software which can assist you to produce professional WebPages. Trial versions of Dreamweaver and its stable mates may be downloaded (< http://www.macromedia.com/software/trial_download/ >). There are also a large number of websites available which aim to give assistance with the design of websites. It is also possible to save your Word files in html, use File/Save As../Save as type../Web Page. The result is a usable page, but some tidying up will probably be required. This technique is not available on older versions of Word. An example of a site created in this manner is a Course Handbook, the single page design is deliberate as many students want a hard copy of their handbook (<http://www.sheffcol.ac.uk/projects/access_online/Health_Science_Access/HSAhandbook/hsahb2002.htm >).

To summarise, the key issue when designing for the web is that of useability – does your site meet the initial demands you asked of it, but, did you carefully consider exactly what you wanted ? Jacob Nielsen in both his books and website (< <http://www.useit.com/> >) gives many examples of websites that 'work' and many that, despite the time, expertise and money which was provided to them, simply are a waste of bandwidth. The free monthly email alert is worth a subscription if you are interested in the issues behind the design of websites.

Other useful references:

Nielsen, J. (2000) Designing Web Usability: the practice of simplicity. New Riders. ISBN 1-56205-810-X. <http://www.useit.com/jakob/webusability/>
RNIB (2000) Get the Message online. RNIB. London
Weblinks (Educational links) <http://www.sheffcol.ac.uk/links/>
Web Site Design (links),
http://www.sheffcol.ac.uk/links/Internet/Web_Design/
Pacifica Films (2000) (video) Websites that work
<http://www.rnib.org.uk/digital/wtw.htm>