

3. Evaluation of the guidelines

3.1 Overview

The terms of reference of the study include making recommendations as a basis for good practice within higher and further education.

To obtain an insight into current practice and attitudes in higher education and to obtain feedback on the proposed guidelines, we interviewed four academic webmasters in depth.

The findings were used to refine the guidelines before obtaining feedback from the different categories of JISC service developers.

3.2 Academic webmasters

We carried out in-depth interviews with four academic webmasters to obtain their reactions to the suitability of the four different types of guidelines for different audiences. The conclusions (Annex H) were:

Guidelines	Comments
NIH Research-based web design and usability guidelines	An excellent reference source, and should be essential reading for full time web developers.
Key guidelines for academic websites	Very useful, especially when linked to the appropriate pages in the usability.gov guidelines. The size and content of the guidelines could be tailored to different audiences.
Illinois Online Network – Web Design for Online Courses	Very approachable for the intended audience of web contributors, but should be supported by examples.
SAP Quick guide to Creating Information-Orientated Web Sites	Excellent advice for people developing a new web site structure.

We also asked the webmasters to comment on which additional guidelines they believed should be included in the set of key guidelines, and extended the set accordingly.

3.3 Requirements

From the interviews with the academic webmasters, we identified three approaches to HCI guidelines, summarised below from the perspective of the webmasters.

Self-confident (1 webmaster): knowledgeable in web design, but not HCI, he is self-confident and does not believe he has much to learn from HCI guidelines or usability evaluation. “My website is all right as it is”. He just wanted explicit rules for what was or was not acceptable. He would recommend the Research Based Web Design &

Usability Guidelines to students. But he did feel he could get something out of the SAP Quick guide to Creating Information-Orientated Web Sites when starting a site from scratch.

Thorough (2 webmasters): not knowledgeable in HCI, but very thorough and sensitive to usability feedback. They would read the Research Based Web Design & Usability Guidelines and recommend it to other web developers, and found the key guidelines list useful. They thought the SAP Quick guide to Creating Information-Orientated Web Sites would be useful for managers of larger sites.

HCI-aware (2 webmasters): welcomed the prospect of JISC recommending a common set of HCI guidelines, and liked the combination of the list of key guidelines linked to the detailed Research Based Web Design & Usability Guidelines. The Illinois Online Network – Web Design for Online Courses was useful for people wanting an overview, but needed illustrations. The SAP Quick guide to Creating Information-Orientated Web Sites would be useful for people designing sites from scratch.

We also noted that the main reason the JISC service providers gave for not using guidelines was pressure of time. It was thus apparent that for guidelines to be effective, they need to be straightforward and easy to understand.

3.4 Draft guidelines

Based on this feedback we produced a simple web site [K5] supporting the following guidelines:

- *Research-Based Web Design and Usability Guidelines*: can be downloaded as a single or multiple pdfs (also expected to become available as a book).
- *Key Guidelines for Academic Websites*: the list was revised based on feedback from the webmasters, and can either be used online with direct links to the relevant pages in the Research-Based Web Design and Usability Guidelines, or can be used offline as a checklist.
- *Key Guidelines for Online Courses*: the information in the Illinois Online Network Web Design for Online Courses has been turned into guidelines, including a subset of the Key Guidelines for Academic Websites, thus providing links to illustrations.
- *Additional guidelines* for Digital libraries, Personalisation and Use of portals.
- Link to *SAP Quick guide to Creating Information-Orientated Web Sites*.

Emails (and reminders) requesting feedback were sent to 8 organisations that support JISC-funded websites. Brief comments were received from two organisations.

4. Conclusions

4.1 Evaluation results

The overall evaluation results were very favourable. Of the eleven people interviewed, ten were very positive about the usefulness of the guidelines. The eleventh person was an advisor rather than a developer, and appeared to have different needs.

JISC Service staff were similar in approach to the “Thorough” and “HCI-aware” webmasters. We did not encounter any JISC developers similar to the “self-confident” webmaster who was resistant to HCI.

4.2 Developing new sets of HCI design principles

Our study suggests that the main guidelines are widely applicable across most types of web services. The additional guidelines for online courses, digital libraries, personalisation and portals are of three types:

1. Interpretations of existing general guidelines in the specific domain (e.g. “ensure course pages can be printed”).
2. Prioritisation of existing guidelines in the specific domain (e.g. the subset of general guidelines for online courses, the emphasis on search guidelines for digital libraries).
3. New guidelines (e.g. the techniques for personalisation).

The material from this study could be used to produce customised sets of guidelines tailored for use in these specific domains. The guidelines could also be extended in a similar way to new domains.

This study chose to document the guidelines as concise statements that can be used as a quick reference list, cross-referencing more detailed information. Another approach that would be useful for less experienced web developers would be to produce a self-contained set of guidelines similar to the NIH book, but with examples from the academic domain. However this would require substantial investment in time and effort from a team with the relevant skills.

4.3 Take up of user centred design methods by JISC services

Service A does not use any UCD methods in the development of new or revised web sites. Typically they develop the site first and fine-tune it later. However staff are keen to take account of feedback from users when this is available.

Some Service A services make a new version available to users for comment before it is finalised. There have also been formal evaluations, including usability tests of some services by outside organisations. Service A prefers the evaluations to be carried out by independent outside organisations.

Service B has so far made little use of UCD methods in the development of new or revised web sites, but following a staff member attending a Nielsen-Norman course, plans to introduce paper prototyping and user-based evaluation in future.

The experience of Service A and Service B is consistent with industry: take up of user centred design methods is a culture change that is difficult to achieve unless staff have previous experience or appropriate training.

It is important to use the most cost-effective methods. The JISC Usability Study [K4] used several evaluation methods in combination. The Usability Study report should clarify that this was for research purposes. While this approach was very thorough, it is normally most cost effective to use only one or two methods at any one time. As Service A have found, user-based evaluation produces the most reliable data and should be used where possible (see [C1] guidelines 1:15 and 1:16).

There is a need to provide simpler guidance on user centred design methods than the sources mentioned in section 2.6, but providing documented methods alone will not itself be sufficient to enable staff to use them. To make further progress, JISC services will need to obtain training or employ staff with previous experience of user centred design.

4.4 Recommendations

4.4.1 Primary audience

a) JISC resource developers: who work on the services and content

The evaluations confirmed that the HCI guidelines will be useful to staff who work on JISC services and content, particularly new staff.

b) Managers of JISC services

Managers should encourage staff to review and adhere to appropriate HCI guidelines. JISC services without existing usability expertise should consider obtaining training in the use of user centred design methods, or employing an experienced member of staff. Usability activities should be specified in responses to tenders.

4.4.2 Secondary audience

Webmasters and academics in higher and further education will also find the HCI guidelines useful.

4.4.3 JISC

The primary purpose of this study was to identify appropriate guidelines for use by JISC funded services. The first draft representation of the guidelines as web pages would be a good starting point for dissemination (as part of the JISC-funded QA Focus?), but could usefully be enhanced with additional support material. If and when the NIH guidelines appear as web pages, these should replace the links to the pdf versions.

To enable the development of more usable services, JISC should in future include usability requirements in its tenders. This would provide an incentive to JISC services to employ user centred design methods, and improve the quality of JISC resources.

The usability requirements could be *process* requirements, requiring the use of appropriate methods and HCI guidelines during the development process, and/or *product* requirements, requiring that the service achieves designated levels of usability (see for example [K2]). The required level could be established by comparison with similar services.