

# DEVELOPING GENERIC ONLINE TUTORIALS AS A STRATEGY FOR EXTENDING THE USE OF WEBCT

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## ABSTRACT

*This paper is a progress report on the design and delivery of two short WebCT tutorials for students, as part of a wider strategy to encourage further use of online learning within the University. The tutorials address issues of concern to the Department and to the Higher Education community as a whole: the indiscriminate use of Internet resources by students, poor acknowledgement of sources and inaccurate citation practice. The various stages of design and delivery, as informed by guidance in action research methods are described. Issues surrounding the use of WebCT, including interactivity and accessibility, are discussed and some preliminary results of student evaluations and learning experiences are presented.*

## Keywords

*Online learning. Interactivity. Accessibility. Citation practice. WebCT.*

## 1. INTRODUCTION

The use of WebCT at Manchester Metropolitan University began in 1998 on a voluntary basis, leading to incremental growth and plans for its integration as a mainstream learning and teaching activity for campus-based students [1].

Prior to the academic year 2002-3, three tutors in the Department of Information and Communications had gained varying degrees of experience in using WebCT as part of teaching optional course units. It was then made part of the Department's learning and teaching strategy to widen experience and encourage further use. The strategy identified was

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to create tutorials to be embedded into teaching the same topic to different groups of students, where online learning was felt to be particularly beneficial.

This paper provides a progress report on the design and delivery of two short tutorials for all students joining the Department in 2002/3: 116 undergraduates following a new common first year programme and 58 postgraduates on the taught Masters courses in Information and Library Management or Information Management. The first is an adaptation of the *Internet Detective tutorial* [2], by agreement with the copyright holders Netskills [3] for use within the University on a pilot basis. The second is a tutorial on citing and referencing, created with support from the LTSN-ICS Development fund. At the time of writing, data are still to be collected on the extent to which students made further voluntary use of the tutorials and the impact on the quality of their work.

## 2. RATIONALE FOR THE CREATION OF THE TUTORIALS

The tutorials address related issues of concern to the Department and to the Higher Education community as a whole: the indiscriminate use of resources from the Web by students, poor acknowledgement of sources and inaccurate citation practice. Possible factors leading to an increasing cause for concern include the growing number of undergraduate students with entry qualifications other than traditional A levels and the rapid developments in electronic information since postgraduates undertook their first degrees.

The *Internet Detective* tutorial has been used since it was first created as part of teaching the *Networked Information* units to undergraduate and postgraduate students of Information and Library Management or Information Management. The students have enjoyed the light-hearted approach and interactivity. The common undergraduate programme introduced in 2002/3 expanded teaching of the first year unit from Information and Library Management students to students undertaking degrees in Information and Communications, Web Content Management and

Modern Languages and Internet Management. A WebCT version was felt to have the advantages of enabling division of the tutorial into smaller sections to be released in stages and the tracking of student progress. The students' questions could be answered online as well as in the limited time available for classroom sessions. Some accessibility problems had also been identified in the original and attempting to address these in a WebCT version would provide models for the future design of WebCT courses in the Department and the University as a whole.

The experience of using the original *Internet Detective* tutorial with students led to the idea of creating a tutorial using a similar interactive and fun approach to citing and referencing practice in order to engage the students' interest and support their learning. Quizzes would enable students to practice and check their understanding before submitting their assignments. The tutorial would be designed to meet their needs, drawing from an investigation into the most frequent errors made.

### 3. RESEARCH METHODS

Guidance in action research methods informed the process of planning and introducing the tutorials. Action research can be seen as a

*"spiral of cycles of planning, acting (implementing plans), observing (systematically), reflecting.. and then replanning, further implementation, observing and reflecting." [4]*

The tutorials represent two spirals of activity within a wider initiative to increase the use of online learning in the Department and the University as a whole. The same groups of students were involved in using both tutorials in the same academic year. The *Internet Detective* tutorial was introduced in the autumn term, with the findings informing the design and implementation of the *Citing Proficiency* Tutorial in the spring term.

Some members of staff were involved in both projects, but the team of people involved in the development of the second tutorial was larger and also included staff from the University library. As part of its strategy for information literacy, developed through a JISC-funded partnership project with the University of Leeds [5], the library had already created an introductory WebCT tutorial on citation practice. Involvement in this more detailed project was seen to be timely and of wider benefit to the University as a whole.

#### 3.1 Planning

As preparation for the wider involvement of staff in teaching online, staff development activities were held in the spring and summer terms 2002. These were followed by the establishment of a Departmental WebCT forum for the discussion of

research to enable continuing opportunities for all staff and postgraduate research students to practice using the communication tools prior to their use as part of teaching.

Guidance on accessible design was gathered from the experience of members of the project team [6], from others within the University [7] and from the literature [8]. The version of WebCT used (3.8) complies with the World Wide Web Consortium Level 1 standards for accessibility, although there are still some problems as explained by Pearson & Koppi [9]. However, in their evaluation of 30 case studies of WebCT courses, they found that:

*"the methods, structure, design and presentation of materials by the designer may pose difficulties in accessing the learning environment for students with disabilities. These generic issues are not because of any constraints imposed by WebCT itself."* [9, p.17]

The aim was to follow their guidance as closely as possible to avoid repetition of these designer constraints and to cater effectively for disabled students. As the content of the *Internet Detective* tutorial was already in existence and just needed some updating in places, the team was able to concentrate on designing for accessibility.

A team of three staff was involved in creating the WebCT version of the *Internet Detective* tutorial, with five further tutors (staff and PhD students) later involved in its delivery. The course content was pre-tested on the delivery team before being introduced to the students, with comments invited through a survey drawing from the Cyberguide ratings [10], leading to some changes and refinements.

As the *Citing Proficiency* tutorial was new, a larger team of eight staff was involved in its development, with three members from the University Library. Two further tutors were later involved in its delivery. Two team meetings were held to set direction, decide on individual contributions to the project and the timetable. The main communication channel between members however, was the Department's WebCT Research Forum. This had the benefits of enabling progress reports to be provided, sharing information gained from the literature and the results of consultation of other guides to citing and referencing [11]. Discussion of specific issues arising as the tutorial was being written took place, for example, variance between the existing Departmental guidance on referencing book chapters and the British Standards. It also enabled other staff in the Department to follow the progress of the project, contribute if they wished and gain further experience in the use of the communication tools.

### **3.2 Acting**

The *Internet Detective* tutorial was introduced to both undergraduates and postgraduates as part of a WebCT course area bearing the name of the unit they were studying, *Networked Information*, to avoid it being seen as an "extra" activity. It was released over two consecutive weeks in November with time in lab sessions allowed for its completion. Although completion of the tutorial was not assessed, the assignments for both groups of students involved the evaluation of web sites to include in a resource guide and they were given explicit instructions to draw from the skills gained from the tutorial in preparing their work. WebCT's communication tools were used for queries about the assignments whilst they were being prepared.

The *Citing Proficiency* tutorial was introduced to the undergraduate students as an integral part of their work on the *Learning, Communications and Technology* unit. Following discussion with the tutors delivering the unit, it was agreed to assign 10/150 marks for their assessed portfolio of work to their performance in the five quizzes contained in the tutorial. The four chapters were released weekly and the students were able to complete the five quizzes in the tutorial as many times as they wished.

A different approach was taken for the introduction of the tutorial to the postgraduates as less time was available in their timetable. The whole tutorial was released at once and they were given a short introduction to it during a time-tabled class for their *Information Retrieval* unit. The expectation was that the students would be sufficiently motivated to complete the tutorial prior to their submission of further assignments at the end of the spring and start of the summer terms. A fifth chapter on Endnote, the bibliographic management software available in the University, was also released to the postgraduates as they would shortly be starting work on their dissertations.

### **3.3 Observing and reflecting**

The students' reactions to both the tutorials were positive during the timetabled classes, as reported by all the tutors concerned. More detailed observation of their subsequent use of the tutorials was enabled by the tracking tools provided by WebCT. In the case of the *Internet Detective* tutorial for the undergraduates, and both tutorials for the postgraduates, the students were reassured that the tracking tools would not be used to affect the assessment of their work.

All the students were asked to complete a questionnaire to gather their views on the *Internet Detective* tutorial. The postgraduate students were also asked to compare the two versions of the tutorial, with an explanation of the reasons for the

changes made to enhance accessibility incorporated into a lecture later on in the term.

At the end of the autumn term, the students were informed about the project to create a further online tutorial on citing and referencing, and asked to participate through providing a second copy of their reference lists for assignments submitted at the end of the autumn term. These were used to identify frequently occurring errors and misunderstandings and informed the design of the tutorial. At the end of the academic year, the process will be repeated and the reference lists examined to identify any improvement in their standards of performance. This method of evaluation follows the guidance given by Collis and Moonen [12]

*"What we are most interested in regarding learning as a consequence of using technology often can't be measured in the short term or without different approaches to measurement. Measure what can be measured, such as short-term gains in efficiency or increases in flexibility"*

## **4. INTERIM RESULTS**

### **4.1 Accessibility**

Evaluation of the original version of the Internet Detective tutorial revealed a number of accessibility problems:

- Navigation via the content menu would be difficult for a visually impaired person using a screen reader such as Jaws.
- The use of tables for layout and to convey information.
- The images have missing alternative text or insufficient detail and some are not very meaningful when described.

In the WebCT version, care was taken to address these issues and design the layout of links so that the home page, course map and navigation panel followed the same sequence to enable people to choose whichever means of navigation most suited their needs. The pages were written in valid html code and cascading style-sheets were used to specify layout and appearance. The Comic Sans font was used as it was felt to be less formal than other sans-serif fonts.

A higher response rate to the evaluation questionnaire was obtained from the postgraduates (47/58, 81%) than the undergraduates (54/116, 47%). The results (Figure 1) show that the majority did not have problems with navigating the tutorial. Some suggestions about improving the navigation were easily implemented, for example, naming the modules rather than numbering them.

The students were also asked to comment on the font, colours and graphics used in the tutorial. Whilst the majority of comments were favourable to

the Comic Sans font, two found it hard to read and one would have preferred a rounder font. The decision was made to change the font to Arial and use this in the *Citing Proficiency* tutorial. The same layout and choice of icons was used for the second tutorial so that the students would not be confused by changes.

	Postgraduate			Undergraduate		
	Yes	?	No	Yes	?	No
Easy to navigate?	85%	11%	4%	83%	15%	2%
Easy directions?	94%	4%	2%	89%	7%	4%
Clearly organised content?	85%	15%	0	81%	15%	4%

Figure 1

Only 22 comments were made in response to the additional question for the postgraduates asking them to compare the two versions, but time to allow them to make this comparison in the laboratory session was limited. 13 responses identified advantages to the WebCT version as: faster (2) more attractive (3) easier to read (1), easier to navigate (5), self-tests better (2), printing facility (1), smaller chunks (1). 9 responses identified the following disadvantages: self tests (3), no running score for self-tests (1), prefer contents frame of the original (3), action menu (1), harder to read (1).

## 4.2 Interactivity

An original intention had been to use the WebCT quiz tool for the quizzes in the *Internet Detective* tutorial. This would have enabled the tutors to measure student progress and provide support to those who were struggling. However on closer examination, the quizzes in the original do not so much test understanding of the previous content but vary the way in which new information is given. It was therefore more appropriate to use the self-test tool, which does not allow the tutor to see the student's performance.

The self-test tool has the advantage of giving immediate feedback as each question is answered, but the answers appear in a second window below the questions. Someone using a screen reader would not be aware that this was the case, so an explanation was given in the text each time the tool was used. Questions about the self-test tool and the ease of understanding the content of the tutorial were included in the survey.

	Postgraduate			Undergraduate		
	Yes	?	No	Yes	?	No
Easy to use self-test?	94%	4%	2%	88%	6%	6%
Appropriate	75%	25%	0	72%	22%	6%

questions?						
Easy to understand?	100	0	0	63%	28%	9%

Figure 2

The results in Figure 2 show that both the undergraduates and postgraduates had some reservations about the appropriateness of the self-test questions. This will be discussed with Netskills for possible change to quizzes in a future version. It is also significant that 20/54 of the undergraduates completing the questionnaire had reservations about how easy it was to understand the information in the tutorial. Non-respondents to the questionnaire may also have found the content difficult, and this may have been the reason why some did not spend time outside the two allocated hours in the computer laboratory to complete it.

The assignment required students to apply what they had learnt from the tutorial in evaluating websites to include in a resource guide. Eight undergraduates failed the assignment and a further eight submitted poor work. After the work was marked, a researcher not involved in assessing student work compared the information obtained from the tracking facility with the student performance. None of the students from this group had read all the pages of the tutorial. In comparison, all but one of the 16 students gaining marks of 70% or over had either fully completed the tutorial, or had accessed a high proportion of pages.

## 4.3 Planning the Citing Proficiency Tutorial

These results led to the decision to use quizzes and allocate marks to the undergraduates for their successful completion in the second tutorial, in order to provide an incentive for its completion and indicate the importance attached to accurate references by the Department. No limit would be placed on the number of times the students could attempt the quizzes and the number of attempts would not affect their mark. However, the number of attempts shown by the tracking facility provided by WebCT would provide some indication of how difficult the students found the questions.

The idea for the name of the tutorial developed from the decision to assess the quizzes. The Cycling Proficiency Test is well known throughout the UK for road safety, and calling the tutorial the Citing Proficiency Test provided opportunities for the lighter touch desired to make the tutorial "fun". It also worked equally well for the postgraduates for whom completion of the tutorial would not be allocated marks.

The examination of the students' reference lists for three pieces of work submitted at the end of the autumn term helped to inform the design of the tutorial to meet their needs. All students had been

given some guidance in citation practice during the autumn term and a booklet for reference when completing assignments. However, the results confirmed the need for the tutorial and the nature and extent of the errors made. 114 out of 184 (62%) references by undergraduates and 168 out of 379 (44%) references by postgraduates to books contained errors. 142 out of 167 (85%) references by undergraduates and 98 out of 122 (80%) references by postgraduates to electronic documents contained errors.

Figure 3 shows the most frequent and significant omissions from the detail in the references.

Missing Contents		
Books	Undergraduate	Postgraduate
Place of publication	43%	18%
Publisher details	24%	
Electronic Documents		
Author	48%	33%
Type of medium, [online]	71%	23%
Date of consultation	78%	37%

**Figure 3**

Figure 4 shows the most significant errors in presenting references to books.

Errors in presentation		
	Undergraduate	Postgraduate
Author's first name in full	16%	16%
Author's name/initials precede surname	14%	
Title precedes author	7%	
Title not in italics	34%	13%

**Figure 4**

On the basis of these results, the development team agreed that the tutorial needed to start at a more basic level than had originally been expected. The first chapter was designed to add the elements of references to books gradually, with explanations as to why each is significant. Unusual titles from the compilation by Ash and Lake [13] were used to make the text more light-hearted.

## 5. CONCLUSIONS AND FURTHER PLANS

The two related projects have been a successful means of widening experience of the use of WebCT by staff in the Department. Although only the authors created the content of WebCT tutorials, the

involvement of others in their design and delivery has helped to raise interest and awareness in the potential for further teaching online. The *Citing Proficiency* tutorial has led to some changes in practice that will affect all tutors in the Department as they mark students' work, and this should provide an incentive to try out a WebCT tutorial for themselves. At the end of the academic year, if there are significant improvements in the students' reference lists, this will provide some indication of the success of the tutorial, even allowing for other influences such as face-to-face guidance when returning their work after the autumn term.

Two groups of students at very different stages in their academic careers used the tutorials. As the undergraduate students found the *Internet Detective* tutorial less easy to understand, some adaptation may be necessary and the introduction of quizzes will be discussed with Netskills. The need to provide the undergraduates with more incentive for participation led to the decision to assign marks for completion of the quizzes in the *Citing Proficiency* tutorial. However, although adaptation may be necessary to respond to the learning needs of students at different levels, the substance of the tutorials remains the same and provides a gain in efficiency for the Department.

The online learning tutorials have been well-received by the students and the WebCT tracking tools will be used to provide further indications of the value they place on them. These will include an analysis of the extent to which the undergraduate students return to the *Internet Detective* tutorial when revising for their end of year examination and the extent to which all students return to the *Citing Proficiency* tutorial when completing further assignments.

The experience of designing the online tutorials for accessibility will be used to inform future developments, for example, a consistent template for all WebCT tutorials used in the Department. Both cohorts included a small number of disabled students, but the surveys were anonymous. In the summer term, a panel of disabled students will be established to carry out further testing of the tutorials for accessibility and further changes will be made as necessary.

Although this paper has reported on two relatively small-scale projects, they have wider implications. The tutorials will be offered for adoption or adaptation by other tutors within the University and opportunities for further projects in partnership with the University library will be explored. The adaptation of the *Internet Detective* tutorial will inform Netskills' consideration of further provision of materials in formats for Virtual Learning Environments as part of their licensing scheme. The *Citing Proficiency Tutorial* will be available to others through the LTSN-ICS. Further

opportunities for action research into online learning will arise as a result, as Kemmis and McTaggart state:

*"Action research starts with small groups of collaborators, but widens the community of participating action researchers so that it gradually includes more and more of those involved and affected by the practices in question."* [4, p.230]

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