Teaching Support: putting the scholarship into teaching

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Funded by: Teaching Quality Enhancement Fund / Research Informed Teaching through the University of Plymouth
Project formerly known as Medical Bodies Online.

1. Background

This project was funded through HEFCE's Teaching Quality Enhancement Fund focusing on Research Informed Teaching (TQEF / RIT). TQEF funding has been supporting and promoting quality teaching practice and research informed teaching since 1999 (see www.hefce.ac.uk for further information on this funding stream). Some of the funding was distributed to Higher Education Institutes and the University of Plymouth allocated funding based on a bidding process involving its faculties and partner colleges.

TQEF aims 'to support enhancements in learning and teaching subject to the production and implementation of institutional learning and teaching strategies (http://www.hefce.ac.uk/Pubs/rdreports/2005/rd23_05/). The Research Informed Teaching strand of TQEF seeks to support the 'teaching–research nexus' (Linking Teaching and Research, 2007). For the Institute of Clinical Education, at the Peninsula College of Medicine and Dentistry, the research informed teaching involves the education of doctors and dentists. Specifically, this project focuses on enhancing the pedagogical support to those involved in educating medical students at the Peninsula Medical School (PMS).

2. Project aims and objectives

To fulfil one of the main themes of TQEF/RIT, this project strived to be an '*explicit strategy to promote the synergy of teaching and research nexus'* (www.hefce.ac.uk).

The aim of this project was to provide Peninsula Medical School staff with access to contemporary medical education research and theory to inform their teaching practice.

The specific objectives were to:
- Enable staff to contribute to, and engage with, developments in medical education research undertaken at PMS.
- Promote the application of educational theory (in particular activity theory) to the teaching of individual students and groups.

3. Development of the resource

The project aim and objectives were achieved through the development of an online resource that provided access to key resources to support teaching practice. The resource development aspect of the project comprised two main aspects: - the development of a teaching support website for Peninsula Medical School and the development of an activity theory e-resource.

The teaching support website was developed as an integral part of a parallel initiative, the development of a (see fig. 1) Division of Medical Education (DME) website for PMS.

Fig. 1: Screen shot of the DME site.
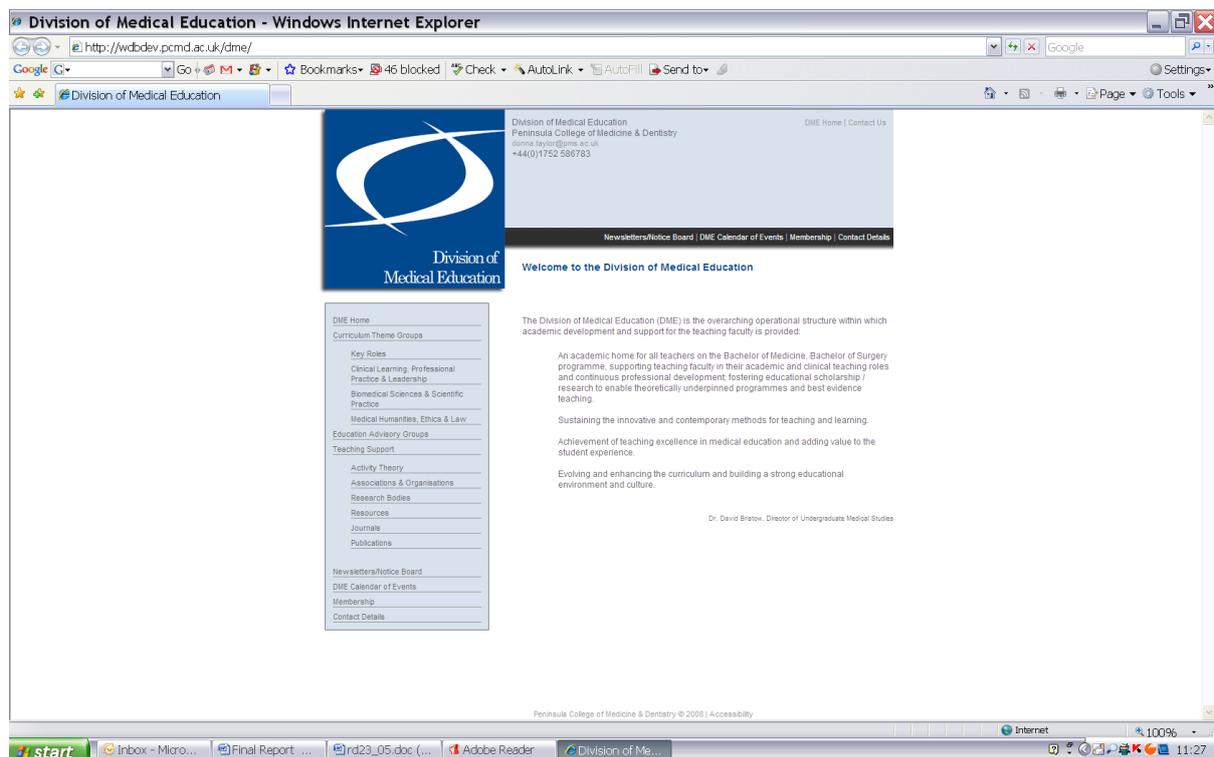
The DME site went live in September 2008 and is available via the internet (http://www.pms.ac.uk/dme/) and via the Managed Learning Environment (MLE). The DME site in its totality aims to offer information relevant to those teaching within specific curricular themes within PMS, including events, meetings, newsletters and curriculum themes. The teaching support aspect of the DME website provides resources that have the potential to inform teaching practice and education research in a format that is readily available to PMS teaching staff. The teaching support resources identified by this project include links to relevant journals, e-resources, associations, research centres, and in-house publications (see figs. 2 and 3). They were organised in a manner, deemed useful to the user, such as the Journals section that includes publications that are used by staff and reflect the subject matter of the resource – medical education.

Fig. 2: Screen shot of the Centres, Institutes, and Research Bodies page on the Teaching Support area within the DME site.
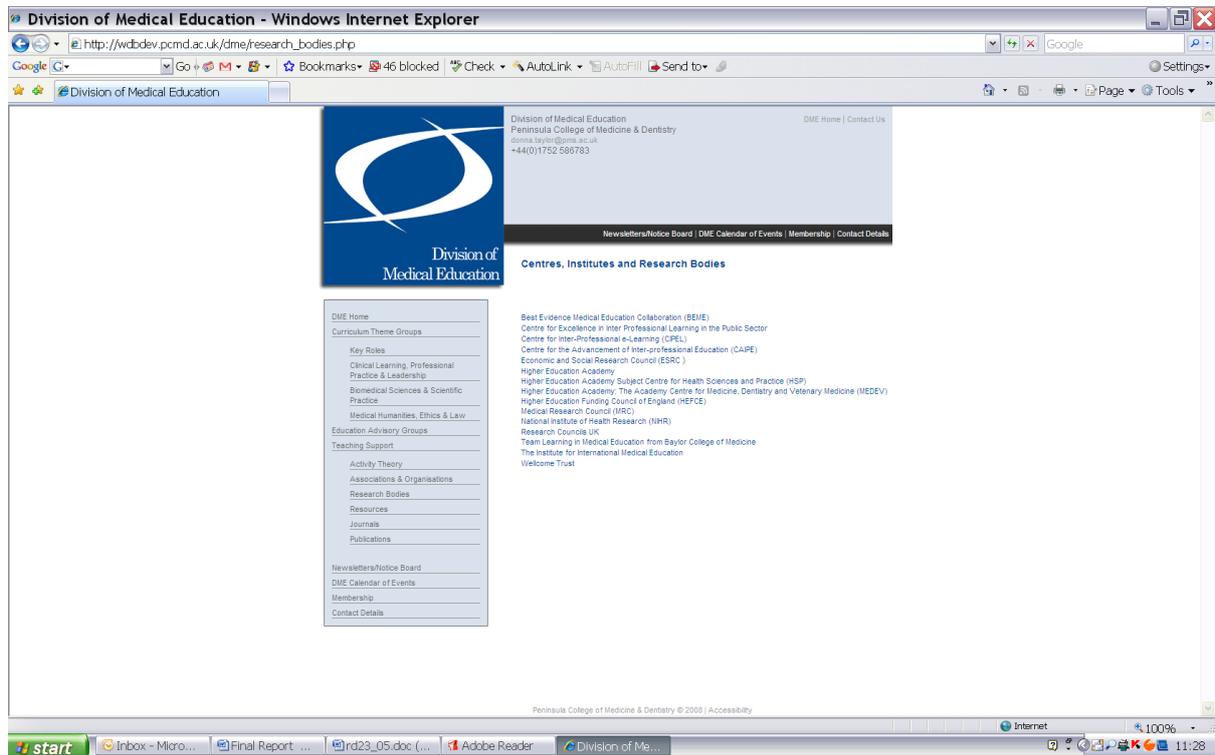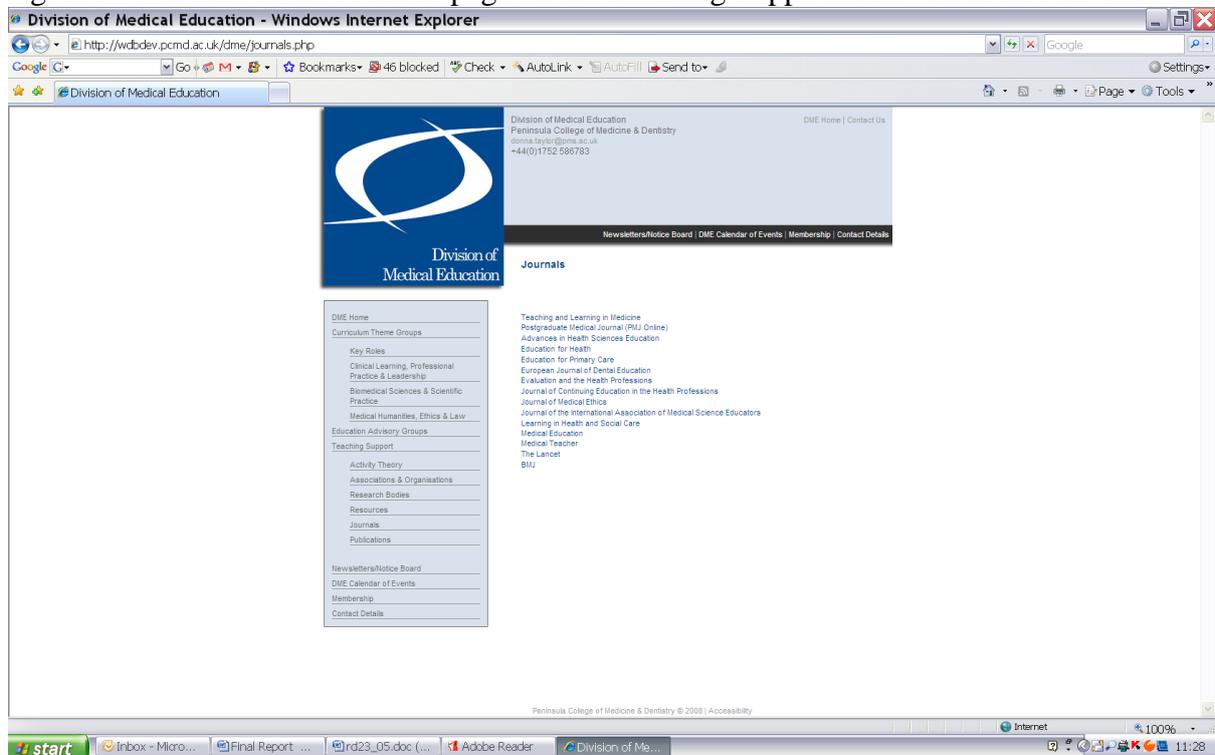

Fig. 3: Screen shot of the Journals page on the Teaching Support area within the DME site.

A means by which users can provide feedback on the site and contribute to its ongoing development of teaching support was developed by the project leader and embedded within the site.

The centrepiece of the teaching support website is an activity theory e-resource, developed by the project leader in close collaboration with Prof. Alan Bleakley.

Fig. 4: A screen shot of the welcome page to the activity theory area.
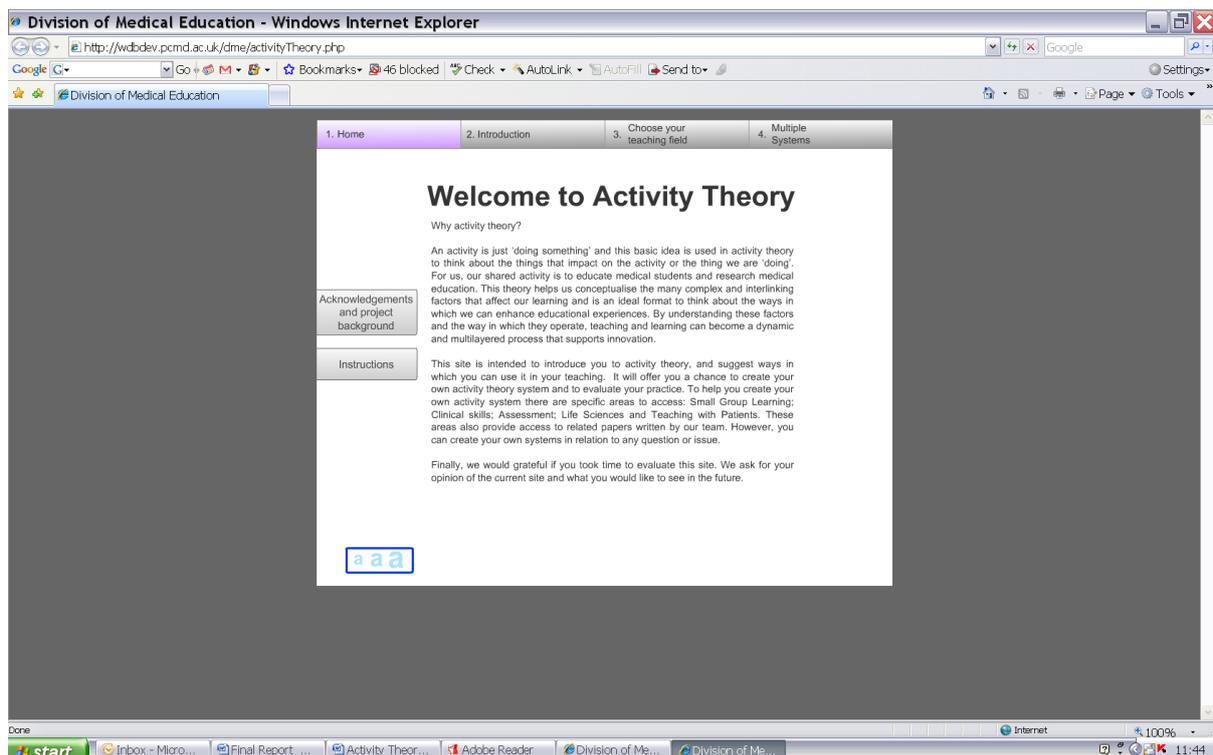
Increasingly the theoretical perspectives that underpin teaching practice are being recognised in medical education and activity theory was seen by senior PMS staff members as one learning theory that allowed PMS staff to think about teaching practice in new ways. Activity theory has its origins in the work of Russian psychologists in the 1920s such as Lev Vygostsky, but more recently has been transformed by Yrjo Engeström in Finland. 'Activity theory expresses learning as grounded in doing (activity), where learning happens through time (or is dynamic) and is often complex (or occurs in systems). Activity theory aims to understand the relationship between individual humans (subjects) and common objects of interest (that may become formalised as outcomes or goals). This relationship is mediated by rules, roles, communities, and artefacts' (http://www.pms.ac.uk/dme/, Center for Activity Theory and Developmental Work Research: University of Helsinki, and Engeström,1999).

The activity theory e-resource (see figs 4 and 5) was designed to offer basic interactive capabilities and act as an introduction to activity theory for teaching staff (http://www.edu.helsinki.fi/activity/). It allows users to explore the application of activity to five main contexts within medical education (small group learning, clinical skills, life sciences, teaching with patients, and assessment) and create their own activity systems. The

activity is complemented by readings, a downloadable activity system, and questions aimed to promote critical thinking and support research informed teaching. Users are encouraged to explore issues that were deemed especially pertinent within PMS teaching and central to allowing staff to access activity theory to enhance their teaching practice (see fig. 5).

Questions incorporated within the resource include:

Small group learning	How does small group activity throughout the curriculum translate into clinical activity such as working in teams?
Clinical skills	How does simulation bridge the gap to work-based learning?
Assessment	Are students prepared for entering a world of appraisal upon graduating, through the assessment schedules in years 1-5?
Life Sciences	How does teaching without cadavers meet the experience of everyday clinical practice?
Teaching with patients	What evidence informs teaching with patients?

Fig. 5: A screen shot of the clinical practice activity system.
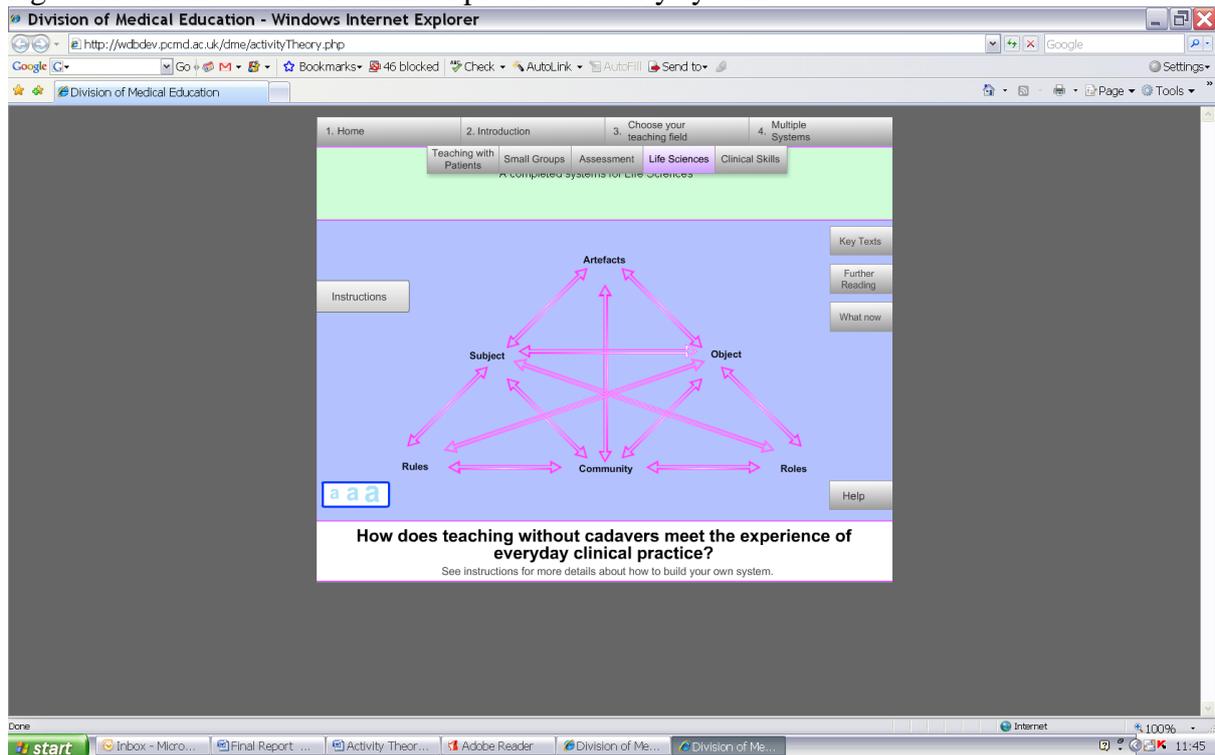
4. Evaluation of the resource

Once the teaching support website and activity theory e-resource had been created, we evaluated their potential impact in two main ways: through expert peer review, and through an innovative 'think aloud' approach to evaluation with practitioners.

For the peer review, three members of staff with expert knowledge of activity theory were approached to evaluate the content of the resource. Unfortunately, at the time of writing, only one of the experts had been able to provide feedback but, since experts were consulted during the development of the resource and the content draws on published material, we do not anticipate problems in this area.

The think aloud protocol was the method of evaluation we used. This approach required that, whilst being videoed, the user engaged with the e-resource whilst commenting on whether they felt the site was useful or needed adjustments as they worked through the site. (http://www.health.heacademy.ac.uk/projects/miniprojects/gresty.pdf and Wright and Monk, 1991) This method was originally developed through an interest in interface design to promote usability (http://www.hcibib.org/tcuid/index.html). For the evaluation by practitioners, ten members of staff were invited to take part. Selected to be representative of the five subject areas described in section 3. The response rate for this phase of the evaluation was 100%, indicating a large degree of acceptability for the approach taken. The project leader set up the equipment but then left the participant in order to generate less inhibited, more extensive 'think aloud' data. By videoing participants, we were able observe the way in which individuals used the site, as well as generating valuable evaluation data through their 'think aloud' comments. This was an innovative way to evaluate a site as people could provide unmediated and immediate responses to the site. This method also showed that individuals videoed in open plan offices were less likely to be as forthcoming as those videoed alone, confirming the importance of isolation when collecting data in this way.

The evaluation data were collated and the detailed findings are presented in Appendix 1. A number of key changes were made in response to the evaluation feedback. A mechanism was embedded within the teaching support website and the activity theory e-resource to collate feedback and make changes based on this beyond the funding period (see section 6 on sustainability).

5. Dissemination

Active dissemination of the teaching support website and the activity theory e-resource was critical to the success of this project. A variety of dissemination methods were chosen, to incorporate both targeted and widespread opportunities to highlight this site to users and interested parties. They included:

- A briefing paper, in poster format, within the University of Plymouth's EDaLT department.
- A workshop-style presentation at the University of Plymouth's VC's Conference
- Links to the presentation from the University of Plymouth's EDaLT web pages
- Advertising the site through the University of Plymouth's intranet staff announcements area, the PMS Managed Learning Environment and the weekly PMS newsletter.

- Targeted emailing of individuals representing the five teaching areas within the e-resource and other interested parties (e.g. individuals involved in a new Postgraduate Certificate in Medical Education).
- Showcase presentation at the Division of Medical Education meeting.

6. Sustainability of the resource

A main outcome of this project has been the creation of the 'Teaching Support' area within the Division of Medical Education website and, specifically, the activity theory e-resource. This has been accompanied by a growing awareness of both education research undertaken at PCMD and we hope to see a growing engagement with education theory.

Now that the resources have been created, evaluated and disseminated, there is scope for further development. Such developments need to be engineered and supported by both users and committed individuals. Those evaluating the site indicated that staff ownership would be critical to the success of the activity theory e-resource. Users are now being encouraged to add links to the resources area, make use of feedback forms and take ownership of the five subject areas. Staff could also offer new examples, readings, and questions. These ideas have been communicated through targeted emails and the DME presentation (see section 5). In order to promote additional sustainability of the resource, we have secured a commitment from the e-learning team (headed by Sally Holden) and academic lead for e-learning and clinical education research (Dr. Karen Mattick) to continue the evolution of the resources and teaching support website. These individuals are important as they represent both the technically creative and substantive elements of the resource.

The practitioners evaluating the site highlighted three possible areas of more extensive development that could be considered. Firstly, a more interactive e-resource was considered desirable. Secondly, it was felt that inclusion of other learning theories was thought to encourage free intellectual exchange and engagement with the gamut of education theory that abounds was important. To focus upon one theory in isolation would be problematic. Thirdly, the inclusion of a broader range of questions within the activity theory resource was thought to promote deeper understanding of the theory and enhance the possibility of its application to a broader range of settings.

7. Reflections on the project and future work

The process of creating an e-resource for staff members has highlighted the importance of staff development as a broader issue and, particularly, how staff can best be supported in their teaching activities.

The importance of consultation with individual staff members to secure their engagement with the process and products cannot be overemphasised. This consultation should also occur with the various teams who create the tool, as they are better able to understand what does work and what can be attempted both technically and substantively.

As well as the changes already made to the e-resource in response to evaluation feedback, three larger aspects that could be developed further were identified (greater interactivity, the incorporation of other learning theories, and the inclusion of a broader range of questions). Clearly there is significant interest amongst practitioners and huge potential for further development but a longer term evaluation of the impact of these new resources on teachers, and ultimately learners, is still required.

8. Acknowledgements

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Appendix 1

Amalgamated Evaluation Notes	Changes made due to evaluation process and suggested changes not taken up
Activity Theory text	• Change bedside teaching to 'Teaching with Patients' as more appropriate. • A clearer delineation between object and outcome made. • Term 'Community' not altered to 'Community of Practice' as little evidence that this is widely used. • Terms 'tool' changed to 'artefact' and 'division of labour' to roles' as more appropriate. • 'Interacting systems' was renamed as 'multiple systems' as original term seemed confusing.
Navigation	• Move from suggested to completed system made more explicit • 'A' completed system not 'the' • A clearer conclusion created as 'What Now' • A more interactive site seen as desirable and as an interim step a downloadable activity system has been created. • A series of activity systems was created detailing each component (subject, object, etc) to highlight how a system is built. This provided a clearer picture of how an activity system works.
Links	• Links checked • Athens issue discussed
Publications	• Many mentioned they would like to see more external publications.

Instructions	• Instructions have now become automatic pop ups • A section detailing the project funding and acknowledgements was added.
The Look	• Site became too small due to technical issues, but this has now been addressed. • Videos were not inserted as they were not felt to add substantially to the site. Moreover such additions could slow download speeds and be problematic for those who access site at home or through dial-up mechanisms.
Other resources: non learning object areas.	• Association and Organisation amalgamated. • Acronyms inserted where appropriate • Users felt that an area entitled interactive systems needed to activity interact, so was renamed to multiple systems. • What about other learning theories?
DME site	• Some concern as to where such a staff development tool should sit. • User comments of the overall site sent to the Head of DME
Wider usage	• The site's potential as a resource for undergraduate and postgraduate students.