# About EASEIT-Eng

## Initial Aim

Help academics choose suitable computer-based learning resources by providing them with comparable evaluations of a range of such resources.

***This involved:***

- Establishing a procedure for performing comparable evaluations of a range of computer-based learning resources.
- Engaging with the users of these resources in a way which allows these evaluations to be carried out.
- Providing access to the results of these evaluations
- Working with other bodies in a way which publicizes the availability of the evaluations and their results.

***Reflection: Some other benefits***

- The outcomes of the evaluations are useful as exemplars of how computer based resources are being used for teaching and learning.

  The evaluation results include a short case study of how each resource is used in a real class with real students studying for real exams. These case studies can be used by other university teachers thinking about how to use similar resources.

- The lecturers who have hosted evaluations benefited from: having a second opinion on the teaching resources they had chosen; contact with other people with similar interests; having someone external and neutral solicit opinion from their students and feeding this back.

  In short the feedback from lecturers was that hosting an evaluation was helpful to them rather than a burden.

- The methodology and the tools used are applicable to other subjects and also to resources other than those which happen to be computer-based.

## Funding

The project was funded through the phase three of the TLTP (teaching and learning technology programme) by the Higher Education Funding Council for England and the Department of Education for Northern Ireland.

This means that the project was funded with tax payers' money that would otherwise have gone to English and Northern Irish universities, and so the project has an obligation to serve all these universities not just those directly involved.

In total the project has received ca. £300,000 ( approx. US$440,000 or €470,000) over four years.

## Consortium

The original consortium was seven universities, the individuals involved came from a range of engineering and learning support backgrounds.

The institutions involved are: Loughborough University (lead site), Heriot-Watt University, University of Hertfordshire, University of Hull, University of Northumbria, and the University of Surrey. The national Learning and Teaching Support Network Engineering subject centre is also a consortium member (it replaced the CTI Engineering centre at Queen Mary college, University of London).

## Further Information & Contact Details

The EASEIT-Eng website, http://www.easeit-eng.ac.uk, contains contact details for further information.

# The Evaluation Design

## Design Criteria: Achieve Four Balances

### Standardized ←→ Flexible

For the results of the evaluations to achieve the aim of facilitating choice, it is necessary that the same criteria, appraised in the same way are used for all resources. We also need to be pragmatic enough to recognize that not all criteria would be equally relevant to all resources.

### Transferable ←→ Contextual

To achieve the aim of "helping academics choose" resources, it is necessary that an evaluation should provide information that is relevant to all people who might use that resource. On the other hand, the context in which a resource is used is key to the usefulness of the resource.

*Reflection:* In fact we have found that documentation of the context of use (ie case studies of how resources are used) is as valued by engineering lecturers as information comparing resources.

### User-based ←→ Unintrusive

Evaluations are most likely to be valid if they are based on the judgements of real students and lecturers using the resource on a real course which counts towards the students degree. However, neither lecturer nor student would welcome too much intrusion into the learning environment.

*Reflection:* This ruled out some modes of study such as control groups and simple expert reviews. The insistence on user-based evaluations is what made the case studies useful as examples of practice.

### Depth ←→ Breadth

There are many factors which can be appraised in evaluations of learning resources, most of which could take a three year study to address comprehensively. However if we were that thorough we would only evaluate four or five resources, not the range of resources at which we aimed.

## Aspects for Evaluation

Each resource was evaluated against a long list of criteria, which served as "heuristics" or indicators of quality. These can be summarized under the following headings:

### Quality of the Resource as Software

Looking at aspects such as ease of navigation, availability of help, error trapping, use of colour, ease of installation, media used, system requirements ...

### Quality of the Resource for Learning

Looking at aspects such as the potential role of the resource, whether learning objectives were clear, whether testing and feedback was used appropriately, whether the material was suitably challenging, whether it enhanced motivation ...

### Quality of the Integration into the Course

Looking at the lecturer's reasons for wanting to use a computer based resource, whether the resource was perceived by the students as an optional extra, the number of students, the number of computers and when they were available ...

*Reflection:* We don't actually evaluate directly for impact on student learning. This might seem strange, but it is difficult to do given the balances we need to strike. We do, of course, ask students and lecturer for any opinions and evidence regarding impact on learning that they might have.

# Evaluation Process

## Software Review

Covers those aspects of the evaluation which do not need to be appraised in context, eg:

- Recording basic information such as cost, distributor and date of publication.
- Recording the objectives and benefits stated by the publisher.
- Suggesting for which degree courses and levels the resource is appropriate.
- Describing the type of the resource (eg simulation, computer-based tutorial) and the type of use which might be made of it.
- Giving an overall appraisal of the resource's technical and pedagogical merits.

The review is performed by an Engineering academic from a relevant discipline, but not one who is necessarily using the resource in teaching.

***Reflection:*** Having academics record the descriptive information never really worked, this has now been taken up by a related project called FAILTE, which has a remit to facilitate resource discovery and which uses library cataloguing experience.

## Pre-Evaluation Interview

The rest of the evaluation looks at software as used in a real course with real students. The pre-evaluation interview is where we gather information about how and when the software is being used; this information is needed to customize and arrange the rest of the evaluation.

## Tutor Interview

A forty-five minute interview with the lecturer using the software is used to gather a full description of how the software was used and the lecturer's reflections on the strong and weak points of the resource. The evaluator has a list of questions which need to be covered, making this a fairly closed interview. Other staff involved in the learning resource implementation (eg technical staff and teaching assistants) are also interviewed if relevant.

## Student Questionnaire

All students are given a questionnaire to fill out asking for their opinions about the resource as a whole and some specific aspects of it and how it related to their course. This questionnaire is generated from a standard template which is customized so that students are not asked more questions than necessary.

***Reflection:*** It is important to get a high rate of return of questionnaires, and this is best achieved if the lecturer hosting the evaluation can set aside some of the teaching time for the students to fill them in.

## Student Group Interview

The student questionnaires are not very good for questions which require an expansive reply. For this reason we supplement the questionnaire feedback with a group interview of around 6-8 students. This interview is much less pre-structured than the tutor interview, only the general topics for discussion are set out beforehand.

## Observation

Where appropriate, the evaluator will attend and observe a session where the resource is being used in order to get some appreciation of the learning environment in which the resource is used.

## Case-studies

The results of the evaluation are written up as short case studies, no more than two sides long.

# Conclusions

## Outputs

### *Case studies and Reviews*

We have completed around 50 evaluations and reviews, of around 40 distinct packages. In doing so we have worked with engineering academics from over 20 universities from all over the UK.

### *Database*

These case studies and reviews are made available through a searchable database, which can be accessed via the project website at http://www.easeit-eng.ac.uk/ . Cooperation with other related services means that the contents of this database will be linked to from other sources of information on computer based learning resources.

## Standardized Evaluations

It has proven possible to use a standardized evaluation methodology to evaluate a wide range of resources in a wide range of contexts. Obviously, it is necessary to be flexible when doing so: for example it is not meaningful to ask about tests if the resource did not contain any; similarly it is not possible to observe the resource being used if it used in an open access mode rather than at scheduled times.

Standardising the evaluations has meant that
- We can streamline the preparation and analysis of the evaluation instruments.
- Previous evaluation data acts as baseline data for interpreting the results for the next evaluation.
- We cannot use methods which have to be tailored to the a particular subject / context (eg pre- and post testing of student knowledge).

## Providing Exemplars

As well as providing engineering academics with information to help them in their choice of learning resources, the database of case studies also documents how computer based learning resources are being used in real life teaching and learning. This is useful to academics and those supporting learning in providing exemplars for how other similar resources might be used.

## Academic Involvement

Our decision that evaluations should be based on real life use of these learning resources meant that we were reliant on the cooperation and good will engineering academics. This was secured by:
- Involving engineers from the very conception of the project, so the project aims were ones which the engineering community saw as useful.
- Highlighted the advantages of hosting an evaluation. At the same time we were careful to lay out the level of involvement required.
- Paying those lecturers who hosted evaluations a modest amount.

Feedback from many of the lecturers who had hosted evaluations indicated that they felt we had provided them with a service rather than extra work.

## Transfer

We are actively seeking to transfer the methodology we have developed to:
- Other disciplines.
- Institutional settings rather than a national service.
- Other types of learning resource.
- Other sectors than UK higher education.