Evaluation Techniques

1 Overview
This lecture will focus on the evaluation process and will answer the following questions:

• What is evaluation?
• What to evaluate?
• How to evaluate?

The outcome of this session will be your project evaluation report which is detailed later.

2 What is Evaluation?
Evaluation is an attempt to appraise the quality/suitability of a resource. It is not the same as Assessment (at least not here in the UK). There are many reasons why we might want to perform an evaluation. Here are some of them:

• Selection – which resource is better?
• Monitoring – is our development heading in the right direction?
• Justifying – show something is value for money.
• Validating – did we make the right decision?
• Improving – can we improve if we change something?
• Research – add to a body of knowledge.

2.1 Formative and Summative Evaluation
There are two different types of evaluation:

• Formative Evaluation - This evaluation takes place during the project to guide future development.
• Summative Evaluation – This evaluation takes place after completion of a project to appraise its success.

To illustrate the difference between the two, consider this sentence:

When a cook tastes the soup, it is formative evaluation; when the dinner guest tastes the soup it is summative evaluation.

3 Integrative Evaluation
• The context in which a resource is used affects how useful it is.
• Formative/summative evaluation during the use of a resource for teaching and learning
• Formative/summative evaluation of the use of a resource for teaching and learning

4 What to Evaluate?
There is no simple answer to this; it depends on “Stake holder” concerns.
4.1 Stake Holders

Stake holders are people or organisations who are affected by the success or failure of what you are evaluating.

- If the university was implementing a new online learning scheme for its students, the stake holders might be the following:
  - Students
  - Lecturers/teachers
  - Institution/department/school management
  - IT support officers
  - Other support services (staff development, library)
  - Funders
  - ….

- These stake holders may have a number of concerns such as:
  - Will this new online learning scheme improve learning?
  - How much will it cost?
  - Will it provide students easier access to teaching materials?
  - Will students be motivated to use it?
  - How easy will it be to use?
  - What will its effect be on other systems/processes?

4.2 Example – EASEIT-ENG

The following example takes a real project EASEIT-Eng which was part of the third phase of the Teaching and Learning Technology Programme. EASEIT-Eng aimed to assist engineering academics in selecting learning technology material, for use in their teaching that was right for both them and their students.

- From the mission statement…
  “…enable an academic tutor to make an informed choice from a range of evaluated computer based materials…”

We will look at what was evaluated.

- Usability
  - Navigation
  - Online help
  - Error trapping
  - Use of colour
  - Ease of installation
  - Media use
  - System requirements
  - …

- Pedagogic aspects of the project
  - Potential role
  - Clearly stated objectives
  - Assessment and feedback
• Challenge and motivation
• …

• Integration into course
  o Reason for wanting to use CAL
  o Number of students
  o Availability of computers
  o Is CAL perceived as “optional extra”?  
  o Relevance to subject of course

5 How to Evaluate?
There are many different methods of evaluation. The following section will outline the most commonly used techniques.

5.1 Checklists
A checklist is a list of action items, steps, or elements needed for a task. Each item is checked off as it is completed.

• Uses:
  o Making sure early version of software conform to standard guidelines
  o Checking whether a range of materials meet your criteria

• Pros:
  o Can be cheap and easy
  o Can apply to prototypes
  o Quick – can cover a lot of factors

• Cons:
  o There is a degree of interpretation needed
  o Not much depth or richness to the information gathered

5.2 Questionnaires
A questionnaire is comprised of a series of questions and can be used as a survey instrument or a discussion guide.

• Uses:
  o Obtaining feedback from a large number of students
  o Obtaining semi-quantitative ratings from students – e.g. Likert scale questions

• Likert Questions
  o These types of questions have the form – “circle 1 if you disagree strongly, 2 if you somewhat disagree, through to 5 if you agree strongly”.

• Pros:
  o Can get input from many people
  o Can get quantitative input
• Cons:
  o Can be difficult to get questionnaires returned
  o Often only get simplest form of question completed – no extra comments
  o Questions may be misinterpreted

5.3 Interviews
An interview is a conversation between two or more people where questions are asked to obtain information about the interviewee.

• Uses:
  o Anything that requires more than a two-word answer
  o Anything where the questions need explaining
  o Explorative work

There are various different types of interviews. Here are a few of the most common:
• Closed – like a spoken questionnaire
• Conversational – let the interviewee take the lead
• Can be one-to-one or involve a (focus) group

• Pros:
  o Open-ended – you can pick up on important issues as they are raised
  o Can make sure questions are understood
  o Rich information – a debate may occur between interviewees allowing you to capture the reasons behind their answers, not just their answers

• Cons:
  o Time consuming for informant and evaluator

5.4 Other Techniques
Listed below are some other frequently used evaluation techniques:

• Observation
• User diaries/logs
• Nominal group technique
• Controlled experiments
• Pre-post testing
• Concept maps
• …And many more

See LTDI Evaluation Cookbook for more:  
http://www.icbi.hw.ac.uk/ltdi/cookbook/

6 Your Evaluation Report
Your project evaluation report should detail:
• The concerns you addressed
• The methods you used
• The data gathered
• What was inferred
• Conclusions/recommendations