GLASGOW CALEDONIAN UNIVERSITY

E-Learning Guides

7. Evaluating E-Learning

This guide will be of interest to academic staff who are engaging in and developing e-learning in their modules and programmes. It aims to help you to:

- understand the rationale for evaluating e-learning
- develop an evaluation plan appropriate to the context in which you are working
- identify a range of evaluation instruments and understand their strengths and weaknesses
- reflect on the potential impact of an evaluation outcome

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Introduction

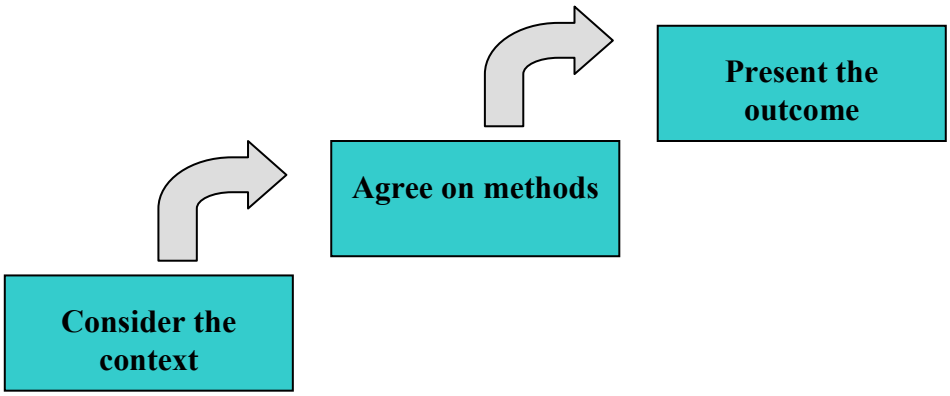
Being responsible for a blended or fully online module can be a satisfying or frustrating experience, depending on whether it meets your expectations and those of the students. Whatever the outcome, it can be helpful to know why certain things happened or did not happen, thus providing the basis for future improvements. Defining success in e-learning is a complex process as the outcome is likely to be dependent on many inter-related factors. A carefully considered **evaluation strategy** can help to identify the relative impact of some of these factors.

One definition of evaluation is that of making a **value judgement** on which decisions regarding future actions and strategic directions can be based. It can also be considered as a means of **developing a deeper understanding** of innovative methods or tools, and of facilitating the **documentation** of new approaches. In addition, it provides a valuable means of monitoring **quality assurance** factors.

The introduction of any technological innovation has major resource implications in terms of time and finance both at organisational and individual level, and in the early stages is often promoted with enthusiasm by a few committed individuals. If these developments are to move beyond isolated examples and become integrated tools at a strategic level, some **justification** needs to be provided as to their value and effectiveness. Those directly involved need reassurance that any additional time spent is worthwhile, and institutions will require evidence of the added value these developments may bring to bear on the educational experience of their students.

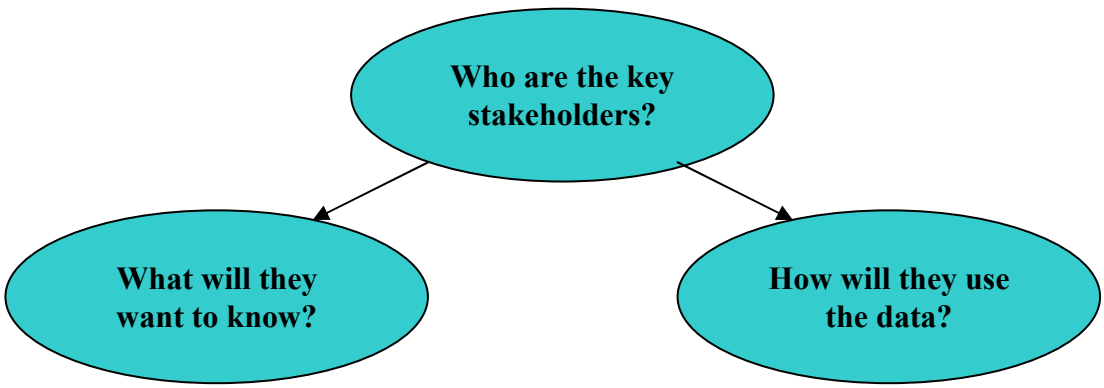
Planning is essential for any evaluation as the implementation itself can be costly. The **stakeholders** need to be identified and the **focus** of the evaluation agreed. **Questions** require careful consideration if they are to reveal useful data, and appropriate **evaluation instruments** developed. **Timing** is important also, as data capture does not necessarily have to be retrospective. Feedback during the development phase of an online or blended module can help to inform the emerging design and facilitation processes, thus allowing

improvements to be made as it proceeds. **Presentation of the results** is another consideration and will depend very much on the audience to which it is addressed.



As part of the planning process, it's important to decide **who will be responsible** for designing and implementing the evaluation and collating the data. A small scale evaluation can be relatively easy to control, but if large, dispersed groups are involved the data gathering process will be more complex and require a longer period of time for completion. In the majority of cases the module leaders or programme director will be responsible for the evaluation, but on occasion it may be helpful to use the services of an external evaluator who can provide an objective view and a new perspective. Where international students are involved, careful thought also needs to be given to linguistic and cultural issues in relation to question design and types of data collected. What may seem to be an innocuous question in one country may appear intrusive and unacceptable in another.

Consider the context



Who are the key stakeholders?

All those directly involved in an innovative development will of course have an interest in the outcome and the reasons behind it. Both **students** and **tutors** will have an interest in evaluating its effectiveness as a learning method and reflecting on their experiences in order to improve future courses. The robustness and accessibility of the technology itself will be a focus of interest for all concerned, including **technical support staff**. Some of the stakeholders may not have a direct involvement but will nevertheless require to be informed of the results. For example, **senior management** may have a more strategic interest in the outcome of any innovative developments, and will expect answers to questions relating to organisational policy and planning..

What will they want to know?

Interests will vary, but here are some examples of different perspectives:

Tutors:	Have the course objectives been met?
	Have the students attained the intended learning outcomes?
	How does e-learning compare with more traditional approaches?
	Has teaching online taken more/less time?
	What kind of activities work best in the virtual environment?
Students:	Has this been an effective way of learning?
	Has the technology enhanced the educational experience?
	Has peer interaction been well-supported?
	What are the advantages and disadvantages for me as a student?
	Have there been any major problems?

It can be helpful to think of different **question types**, including those which address the more negative issues, in order to achieve a useful balance of responses. For example:

Measurement	How many students successfully completed the module? Have the overall marks improved?
Comparison	Which activities were most successful? Does the technology provide better support for some tasks?
Exploration	How was the learners' experience during the course? How positive was the experience for all involved?
Negative Factors	What was difficult about the course? What could be improved?

There are many more areas which merit exploration. For example, depending on which stakeholders are considered most influential, more **strategic concerns** may also need to be addressed. Straightforward **comparisons** may be made with more conventional means of teaching and learning in HE. Subjective information on **attitudes** and **motivational factors** can have a major impact on outcomes and warrant investigation. For example, are those involved willing participants, or have they been designated to take part? Depending on the context, **cost factors** may also be an important area to explore.

In order to establish a baseline against which the experiences of individuals can be evaluated, it can be helpful to use a **pre-course questionnaire** to collect prior data to determine their level of previous experience with technology, communicating online and educational outcomes.

Questions will need to be carefully formulated to capture a wide range of data and should include a combination of **open** questions, which allow the respondent a certain amount of freedom in how and what to answer, and **closed** questions, where the choice is limited to a few fixed responses on specific points. The balance will be determined by the scale of the evaluation and the type of analysis required.

How will they use the data?

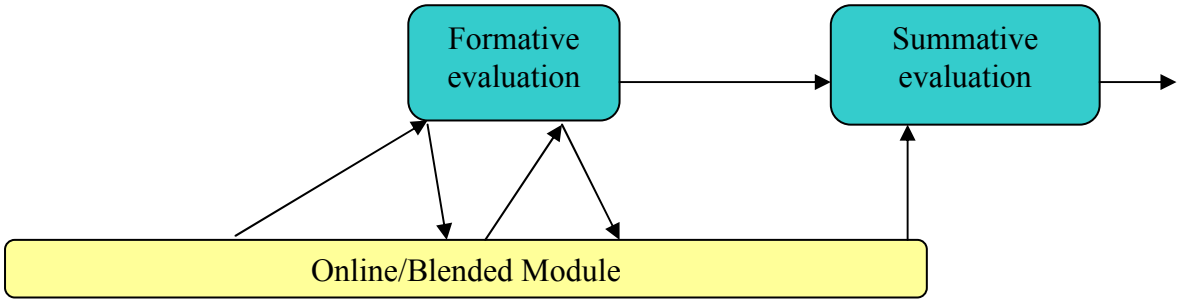
For tutors and students, the main interest is likely to be in **improving the experience** for themselves and any colleagues who may become involved in the future. The data may also be used to persuade senior staff that more time and resources are required to support the new developments and that recognition at a high level is a crucial motivating factor. Senior management are likely to ask if the outcome **justified the time and effort**, and if it will have a strategic impact requiring future planning and policy changes.

It is clear then that a combination of hard facts and figures along with an analytical documentation of attitudes and experiences is required. The chosen methodology will have a direct influence on how both **quantitative** and **qualitative** data will be collected, collated and presented.

Agree on methods

The methodology used to carry out your evaluation will depend on several factors, including the size of the group involved and the amount of time available for implementing the evaluation and collating results. For example, if numbers are high, it will be quicker and easier to gather **quantitative** rather than **qualitative** data as the latter would be time-consuming to collate and analyse. This is not to say however that it is any less important and you may decide to target a smaller core group from whom you can extract a representative sample of qualitative responses.

Fast results are needed if the evaluation is **formative**, as these will impact directly on the module as it evolves, whereas a **summative** evaluation at the end of the online experience may yield a greater amount of data and will therefore require a longer period of time for collection, analysis and presentation. In many cases a combination of the two will be required. Whatever the circumstances, choosing the most appropriate evaluation instruments to extract the required data demands careful thought.



If you are already an experienced evaluator in a more traditional context, it may be possible to **adapt** some of the tools you already use. However the possibilities presented by online communication should encourage you to consider **using the technology** to support both the creation of evaluation instruments and subsequent data collection. For example if you have the expertise available, **online questionnaires and surveys** can be developed, the feedback from which can be emailed directly to the evaluator or added automatically to an electronic **database** or **spreadsheet** for subsequent analysis. This can dramatically reduce the time involved and can facilitate the production of useful graphical representations of quantitative data.

One useful guide is the **Evaluation CookBook** developed in 1999 by the Learning Technology Dissemination Initiative (LTDI) at Heriot Watt University, which provides an in-depth analysis of the evaluation planning process along with a comprehensive overview of appropriate instruments. It is aimed primarily at HE and FE educators, and can be viewed online or downloaded in PDF format from http://www.icbl.hw.ac.uk/ltdi/cookbook .

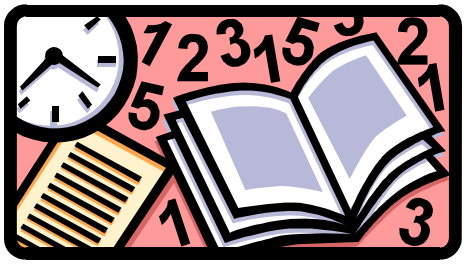
Evaluation Instruments

A wide range of instruments can be used, and the following table summarises the strengths and weaknesses of some of the most popular evaluation tools.

Instrument	Strengths	Weaknesses
Electronic questionnaires	• Quick and practical for large and dispersed groups. • Can combine qualitative and quantitative data. • Low cost in terms of time for evaluator and target group.	• Ensuring high return rates can be problematic. • Questions have to be designed carefully to be meaningful. • Maintaining anonymity can be difficult if email is used, but easier with web-based delivery.
Interviews	• Can produce rich data which may otherwise have been missed. • Can be conducted F2F, by telephone or online. • Can be used with key stakeholders.	• Time consuming to administer and collate.
Focus groups	• Can be helpful in identifying key issues. • Useful for reflective feedback. • A lot of information can be obtained in a relatively short time. • Can be conducted online in a special conference, or F2F.	• Require careful moderating to maintain focus and equal participation.
Confidence log	• Provides a useful indicator of an individual's confidence levels in relation to use of technology and levels of understanding. • Quick to prepare and administer.	• Very subjective information. • Needs to be administered several times to allow comparison of results, e.g. before, during and after an online activity or course.

System data	• Can yield useful information on logon rates, documents accessed, time spent online etc. • Readily available.	• Provides only quantitative data.
Online discussion area for reflections	• Allows all participants to air views informally during a module. • Can provide useful insights into their experience. • Quick to set up and requires only occasional monitoring.	• Can become an area to air grievances.
Analysis of discussion contributions	• Provides useful data on how participants interact online. • Clearly identifies socialisation, information exchange and conferencing activities.	• Time-consuming to read and categorise. • Not practical where large groups are involved.

Present the results



Having acquired a satisfactory set of data, the next question to consider is the most appropriate way to feed back your findings to all interested parties. Again, this will depend on how broad or narrow the focus of the evaluation has been, who the target audience is and what type of data is likely to have most impact. In some contexts a **formal report** may be required, while in others a more **informal presentation** of the outcome to colleagues may be all that's necessary. The following questions may help to clarify requirements:

- Who is the main audience?
- Should the outcome be reported to more than one group of stakeholders?
- Are the findings likely to be disseminated beyond your own organisation?

- Are they required for research purposes?
- Is there an urgent need to make the findings available immediately, or is there time for reflection and in-depth analysis?
- Does a particular audience need all the information gathered or will selected highlights be sufficient?
- How will you report on disappointing or negative results?
- Will you make this information available to all concerned, or will they have to request it from you?
- Does it need to be in electronic format? If so, which file format will make it most accessible?
- Is one presentation format sufficient or do you require a combination of reports?

The answers to these questions will of course depend on the context, but it can be useful to spend some time considering the **potential impact** of different approaches.

Broader Issues

Political issues

The results of an evaluation exercise may be influential at a high level within an organisation and beyond, therefore it may have direct **political implications**. With this in mind, decisions on who will be invited to become involved and whose questions you choose to answer become important considerations. **An evaluation outcome can be a persuasive tool.** For example:

Key Questions:

- Will you address all the issues raised or will you concentrate your efforts on particular areas?
- Will your findings empower certain stakeholders?
- Who can you persuade and of what?

Ethical issues

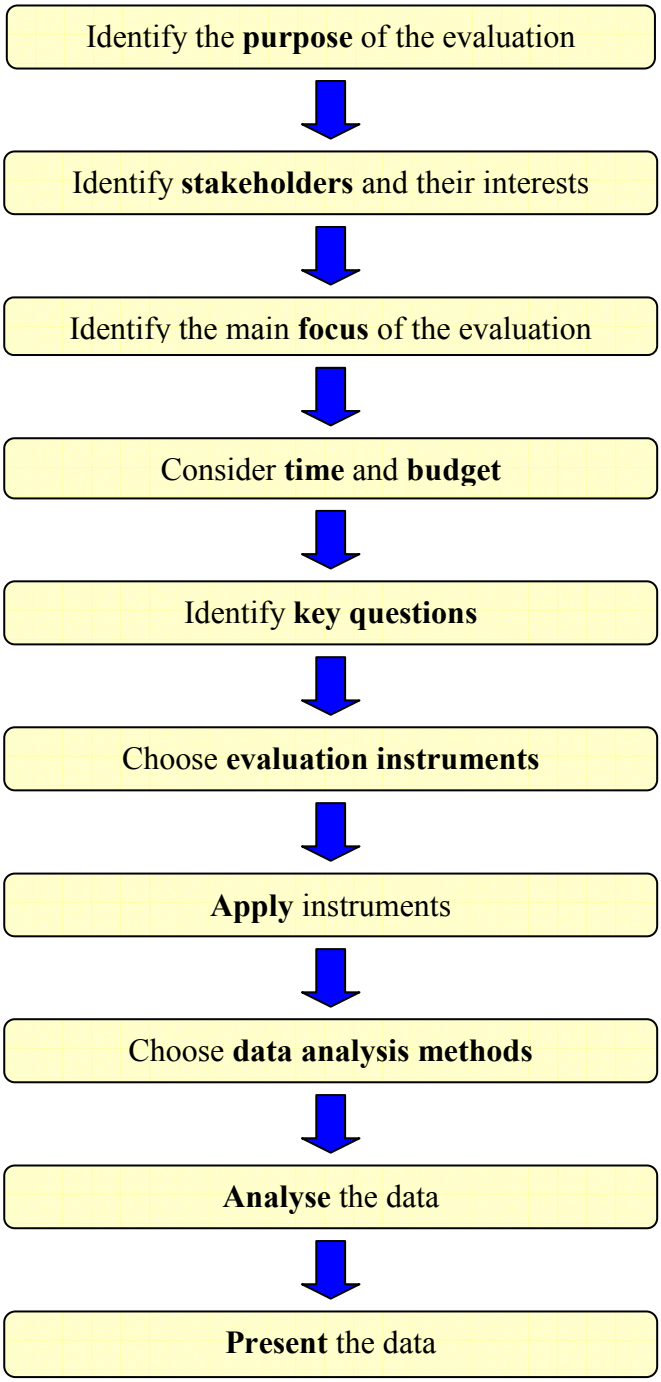
Finally, there are ethical considerations which should be addressed, such as:

Key Questions:

- Are you offering all stakeholders the opportunity to be involved?
- If not, can you justify the reasons?
- Are you treating all participants fairly?
- Do you have their informed consent?
- Do individuals have the option of withdrawing from the evaluation if they don't wish to be involved?
- Is there a gender/age/national bias?
- Whose agendas are you addressing?
- What is your legal obligation for storing personal and sensitive data under the Data Protection Act?

Summary

10 Steps to Planning and Implementing a Successful Evaluation



(adapted from Cook, 1999)

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The full series of GCU E-Learning Guides is available to download from apu.gcal.ac.uk/pages/resources.htm

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With thanks to colleagues from the Schools, APU and eLISU for their valuable contributions and comments.

Sample Confidence Log

Name_____

Please indicate, by ticking the relevant box, how confident you feel about:

Topic	Very Confident	Confident	Some Confidence	Little Confidence	No Confidence
Understanding the pedagogical approaches to online distance learning					
Planning a course with an appropriate balance of face-to-face and online sessions					
Successfully moderating an online conference					
Transforming paper-based materials to an interactive web format					
Choosing and creating suitable evaluation instruments					

Comments: