

**Postgraduate Certificate  
in Learning and Teaching**

# **Module: Applying learning technologies**

**Module Code: TL04P**

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**UNIVERSITY OF  
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# **Applying learning technologies**

## **Code TL04P**

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### **Module description**

#### **Rationale**

The use of technology within the teaching and learning community is growing rapidly. It is essential that teachers in HE are familiar with the ways in which it can help (or hinder) in the support of the learning process.

#### **Aims**

The aim of this module is to allow the learner to investigate, through active learning, the role of C&IT in learning and teaching. The learner will review the current technologies that are available, along with their use in learning situations. They will go through the process of designing, developing, implementing and evaluating the use of technology in their own work and use this experience to review their own professional development needs.

#### **Relationship of module with the programme**

All other modules within the programme will cover some aspects of the use of learning technology but this module specifically requires the students to engage in designing, implementing and evaluating an example of the use of learning technologies.

## Learning Outcomes

Participants should be able to

- LO1 Report upon the use of a variety of learning technologies
- LO2 Demonstrate an understanding of learning processes
- LO3 Analyse the opportunities and constraints in using C&IT and select C&IT appropriate to the learning situation
- LO4 Design, plan and implement a strategy for integrating C&IT into a programme of learning
- LO5 Evaluate the impact of C&IT in a learning situation
- LO6 Review the results of an evaluation, and plan, and undertake, actions related to both the learning programme and personal professional development

## Mapping module learning outcomes to the EFFECTS outcomes

The learning outcomes for this module map to the EFFECTS national framework as indicated in the following table.

<b>EFFECTS outcomes</b>	<b>Mapping to the module</b>
1. Conducted a review of ICT in learning and teaching and shown an understanding of the underlying educational processes.	LO1 and LO2
2. Analysed opportunities and constraints in using ICT and selected ICT appropriate to the learning situation.	LO3
3. Designed and planned a strategy for integrating appropriate ICT.	LO4
4. Implemented a developed strategy.	LO4
5. Evaluated the impact of the interventions.	LO5
6. Disseminate the findings of the evaluation.	Assessment of LO5
7. Reviewed, planned and undertaken appropriate actions related to own CPD.	LO6

## Module Assessment

This module will be assessed by a single portfolio that will be completed over the course of the module together with a presentation. The portfolio will contain a variety of sources of evidence to cover each of the EFFECTS outcomes and will thus also cover each of the module learning outcomes. Included in the portfolio will be a detailed, reflective account of the choosing, planning, implementing and evaluation of learning technology (i.e. a case study).

The final part of the assessment will be a presentation to peers of the case study included in the portfolio.

For grading purposes, the presentation will carry a weight of one fifth of the module grade; the portfolio will make up the remainder but will be graded in two parts, giving equal weight to the case study and the remainder of the portfolio.

The assessment is established and monitored through a formative Learning Agreement.

### Assessment Criteria

In order to pass this module the student must demonstrate that they have met all the learning outcomes of the module, and have presented a portfolio in which that achievement is clearly identified.

#### **LO1 Report upon the use of a variety of learning technologies**

Pass - Limited review within subject area

C - more thorough review within subject area

B – wide review going beyond the students subject area

A – thorough, wide-ranging review – well analysed

#### **LO2 Demonstrate an understanding of learning processes**

Pass – case study clearly based on an understanding of the learning process

C – awareness of a range of theoretical models of the learning process

B – application of a range of theoretical models of the learning process

A – clear discussion of the nature of the learning process and evidence of application in the case-study and innovative approaches to enable student learning

#### **LO3 Analyse the opportunities and constraints in using C&IT and select C&IT appropriate to the learning situation**

Pass – analysis limited to the case study situation

C – wider analysis

B – application of a variety of theoretical models to the analysis

A – full analysis, well researched an innovative approaches to overcoming constraints

#### **LO4 Design, plan and implement a strategy for integrating C&IT into a programme of learning**

Pass – clear strategy

C – well designed strategy

B – strategy clearly based on analysis of opportunities and constraints, and understanding of learning process

A - innovative strategy based on thorough analysis

**LO5 Evaluate the impact of C&IT in a learning situation**

Pass – effective evaluation strategy

C – evaluation strategy clearly related to aims and objectives, and specific features of the intervention

B- evaluation strategy effectively justified by theoretical analysis

A – well justified, innovative strategy

**LO6 Review the results of an evaluation, and plan, and undertake, actions related to both the learning programme and personal professional development**

Pass – evidence of review and action plan

C – evidence of action being take following the review

B – utilisation of a range of theoretical perspectives in the review

A – full review and action plan, well discussed and evidence of continuing development

See appendix for the EFFECTS case-study cover sheet.

**Reading for the Module**

Core Reading:

Maier, P and Warren, A J (2000) *Integrating Technology in Learning and Teaching: A Practical Guide for Educators*. Kogan Page, ISBN: 0749431806

Highly recommended

BOYLE, T, (1997), *Design for Multimedia Learning*, Prentice Hall

LAURILLARD, D., (1993), *Rethinking University Teaching: a framework for the effective use of educational technology*, Routledge

Useful

BRADBEER, J, *Evaluation of Curriculum Development within Higher Education*,

BRAHLER, C. J et al, (1999) *Developing on-line learning materials for higher education: an overview of current issues*, *Educational Technology and Society*, 2(2), pp 42-54

COLLIS, B, (1996), *Tele-learning in a Digital World*, International Thompson

DANIEL, JOHN S, (1996) *Mega-Universities and Knowledge Media – Technology Strategies for Higher Education*, Kogan Page

GOODYEAR, P, et al., (2000), *Effective networked learning in higher education: notes and guidelines*, Centre for Studies in Advanced Learning Technology, Lancaster University

HARASIM L, et al, (1995), *Learning Networks*, MIT Press

HARVEY, JEN (ed), (1998), *Evaluation Cookbook*, LTDI

JONES, R & WRIGHT C., (1999), *Online Guided Learning*, Educational Technology and Society, 2(3), pp 115-118

MCCONNELL, DAVID, (1994), *Implementing Computer-Supported Cooperative Learning*, Kogan Page

MILLER, S AND MILLER, K, (1999) *Using Instructional Theory to Facilitate Communication in Web-based Courses*, Educational Technology and Society, 2(3), pp 106-114

MCDONNELL, D, (1994), *Implementing Computer Supported Cooperative Learning*, Kogan Page

OLIVER, M AND CONOLE, G, (1998), *The evaluation of learning technology – and overview* in *Innovation in the evaluation of Learning Technology*, Oliver M (ed), UNL

A variety of web-sites and resources are recommended on the EFFECTS project web site at [www.unl.ac.uk/tltc/effects](http://www.unl.ac.uk/tltc/effects)

## Week 1

Venue LTS studio

**Title: Review examples of the use of learning technologies**

**Session Type: Central**

**Learning Outcomes addressed:**

**LO1**

**Pre-reading and/or Pre-session activity**

None

**The session will consider:**

- **The use of learning technologies**
- **Facilities at the University for the development and use of learning technologies**
- **The learning agreement for the module**

**Related reading:**

Introduction to the core text

Students will be expected to complete the 'Building On-line Communities' Course at Robert Gordon University or an equivalent, and to start reviewing subject based uses of learning technologies

Use the 'Examples' section of the TLTP3 FOCUS database, [www.focus.ac.uk](http://www.focus.ac.uk), or the case study/bibliography section of the TLTP3 Aster project, [www.cti-psy.york.ac.uk/aster/](http://www.cti-psy.york.ac.uk/aster/), or the searchable database compiled by the CAA Centre, [www.caacentre.ac.uk/bib0.shtml](http://www.caacentre.ac.uk/bib0.shtml), and the useful introduction to student centred learning from Plymouth, <http://sh.plymouth.ac.uk/eds/elt/documents/why.pdf>

Journal articles: Hare, C and McCartan, A (1996) *Maximising Resources in Search of Quality: Identifying Factors to Enable the Integrative Use of IT in Teaching and Learning*, **Innovation in Education and Training International**, 33, 4.

Phelps, J and Reynolds, R (1999) *Evaluating EuroMET - a web-based resource for meteorologists*, **ALT-J**, 7, 1.

Brown, S, Hardaker, C H M, and Higgett, N P (2000) *Designs on the web: a case study of online learning for design students*, **ALT-J**, 8, 1.

Carr-Chellman, A and Duchastel, P (2000) *The ideal online course*, **British Journal of Educational Technology**, 31, 3

Maier, P and Warren, A J (2000) *Integrating Technology in Learning and Teaching: A Practical Guide for Educators*, Kogan Page

**Relationship of the session activities to the module assessment**

Assessment of learning outcome 1.

## Week 2

Venue LTS studio

### Title: Pedagogic principles

Session Type: Central

### Learning Outcomes addressed:

LO 2&3

### Pre-reading and/or Pre-session activity

Relevant sections of the Laurillard text and the core text.

### The session will consider:

- Pedagogic principles underlying the use of LT
- Theoretical models of the leaning process

### Related reading:

Web sites on learning theory and learning styles – to be provided.

An interesting paper from the University of Surrey is at <http://collaborate.shef.ac.uk/nlpapers/hay/netlearn4.htm> and a vast resource is housed at the University of Columbia at Denver at <http://www.cudenver.edu/~mryder/itcon.html>. Another useful site is <http://www.icbl.hw.ac.uk/ltidi/implementing-it/frame.htm> - the Institute of Computer Based Learning at Heriot Watt has done huge amounts of work in this area. Bookmark this site!

Littlejohn, A, Stefani, L A J and Sclater, N (1999) *Promoting effective use of technology, the pedagogy and the practicalities*, **Active Learning**, 11.

Shuell, T. J. (1992). Designing instructional computing systems for meaningful learning. In M. Jones & P. H. Winne (Eds.), *Adaptive learning environments: Foundations and frontiers* (pp. 19-54). New York: Springer-Verlag.

Laurillard, D (1993) *Rethinking University Teaching* is a classic text on new learning environments

Boyle, T (1997) *Design for Multimedia Learning*, Prentice Hall

### Relationship of the session activities to the module assessment

Assessment of learning outcomes 2&3

## **Week 3**

Venue

**Title: Action learning set**

**Learning Outcomes addressed:**

LO 1,2&3

**Pre-reading and/or Pre-session activity**

Students will have reviewed the use of LT in their subject area.

**The session will consider:**

- The use of LT in subjects

**Related reading:**

For this week, you should look at the CTI/TLTSN sites for your subject area, and proceedings from conferences. Also, revisit the FOCUS ([www.focus.ac.uk](http://www.focus.ac.uk)) and Aster ([www.cti-psy.york.ac.uk/aster/](http://www.cti-psy.york.ac.uk/aster/).) websites for subject-specific resources.

Past issues of the journal, *Active Learning*, published by the now defunct CTISS, are also a valuable resource.

Subject-specific journals also sometimes carry articles on innovation and LT incorporation.

**Relationship of the session activities to the module assessment**

Assessment of learning outcomes 1,2&3

## **Week 4**

Venue LTS Studio

### **Title: THE DESIGN PROCESS**

**Session Type: Central**

#### **Learning Outcomes addressed:**

- LO3 Analyse the opportunities and constraints in using C&IT and select C&IT appropriate to the learning situation
- LO4 Design, plan and implement a strategy for integrating C&IT into a programme of learning

#### **Pre-reading and/or Pre-session activity**

Work on proposed case-study and complete learning agreement

#### **The session will consider:**

- The design process

#### **Related reading:**

Although pedagogic issues are uppermost in your mind, you may also want to consider project management ideas for an important range of people and issues. Try Slevin, D P and Pinto, J K (1986) *The Project Implementation Profile: New Tool for Project Managers* in **Project Management Journal**, September 1986.

Laurillard, D (1997) **Technology for Distance Learning: Organisational Infrastructure**, a paper presented to the *UCISA 97 Management Conference*, at <http://www2.open.ac.uk/LTTO/ucisapre.htm> outlines the organisational factors vital for successful implementation.

Some ideas regarding implementation can be found at <http://www.sh.plym.ac.uk/eds/elt/documents/frameworks.pdf>

A thought provoking article on intellectual property can be found at <http://www.center.rpi.edu/PewSym/mono2.html>  
And costs are dealt with at <http://webpages.marshall.edu/~morgan16/onlinecosts/> (for calculation purposes). Read the associated paper at <http://multimedia.marshall.edu/onlinecosts/distancelearning.pdf>

An (old but) useful book is Rowntree, D (1982) **Educational Technology in Curriculum Development**, 2<sup>nd</sup> Ed, London: Harper & Row.

#### **Relationship of the session activities to the module assessment**

Covers the material and process for the assessment of learning outcomes 3&4

## **Week 5**

Venue LTS Studio

### **Title: Design Workshop**

**Session Type:** Central

#### **Learning Outcomes addressed:**

LO3 Analyse the opportunities and constraints in using C&IT and select C&IT appropriate to the learning situation

LO4 Design, plan and implement a strategy for integrating C&IT into a programme of learning

#### **Pre-reading and/or Pre-session activity**

Work on case-study set in week 4

**The session will be an opportunity to work on your project with support from the module team.**

#### **Related reading:**

This is a practical session to introduce you to the range of software available locally. Investigate manufacturers' websites to see what they offer:

[www.webct.com](http://www.webct.com)

[www.qmark.com](http://www.qmark.com)

[www.teknical.com](http://www.teknical.com)

[www.lotus.com/home.nsf/welcome/learnspace](http://www.lotus.com/home.nsf/welcome/learnspace)

[www.staffs.ac.uk/COSE](http://www.staffs.ac.uk/COSE)

Some useful books are available in the Learning Technology Studio:

Forsyth, I (1999) Teaching and Learning Materials and the Internet

Mills, R and Tait, A (eds) (1996) Supporting the Learner in Open and Distance Learning

#### **Relationship of the session activities to the module assessment**

Learning outcomes 3&4 – students are reminded that they need to keep notes on their design process for inclusion in their portfolio

## **Week 6**

Venue various

### **Title: Action Learning Sets – project work**

#### **Learning Outcomes addressed:**

All

#### **Pre-reading and/or Pre-session activity**

Prepare a report for the action learning set

#### **The session will consider:**

Project report and planning.

What will you want to evaluate when you come to evaluate your intervention?

#### **Related reading:**

Integrating learning technology is a complex task. Revisit your reading to date and focus on your LT intervention - what can you achieve with the available tools? And think about how you might *evaluate* what you hope to achieve, both for your own development and the student learning experience. Your original idea is probably too ambitious (they usually are). Start small and aim to scale up as your experience grows.

Somekh, B (1998) *Supporting ICT Innovations in Higher Education*, **Journal of Information Technology for Teacher Education**, 7, 1.

Tearle, P, Davis N and Birbeck, N (1998) *Six Case Studies of IT-Assisted Teaching and Learning in Higher Education in England*, **Journal of Information Technology for Teacher Education**, 7, 1.

Keep Chickering and Ehrmann's seven principles in mind as you design your LT intervention: [www.tltgroup.org/programs/seven.html](http://www.tltgroup.org/programs/seven.html)

#### **Relationship of the session activities to the module assessment**

As part of your project planning you should now be reviewing your progress in terms of the compilation of your portfolio and ensuring that you will have the evidence for all the learning outcomes.

## **Week 7**

Venue LTS studio

### **Title: Evaluating the use of LT**

**Session Type:** Central

#### **Learning Outcomes addressed:**

LO5 Evaluate the impact of C&IT in a learning situation

#### **Pre-reading and/or Pre-session activity**

From the action learning set meeting from last week you should have a clear idea of what you want to evaluate about your intervention.

#### **The session will consider:**

- Principles of evaluation
- Methods of evaluation

#### **Related reading:**

**Evaluating the use of LT** - the forgotten art of knowing whether LT is making a difference!

There is now a growing batch of resources that will help you to evaluate whether what you are doing makes a difference. Start with the LT evaluation bible at

[www.icbl.hw.ac.uk/ltidi/cookbook](http://www.icbl.hw.ac.uk/ltidi/cookbook)

Then try [www.unl.ac.uk/tltc/elt/](http://www.unl.ac.uk/tltc/elt/), especially the online toolkit at [www.unl.ac.uk/tltc/elt/toolkit.pdf](http://www.unl.ac.uk/tltc/elt/toolkit.pdf), also

The ELICT project at Glasgow has done some work in this area, see

[www.gla.ac.uk/rcc/projects/elict.html](http://www.gla.ac.uk/rcc/projects/elict.html)

Or [www.coe.uh.edu/insite/elec\\_pub/HTML1997/re\\_jone.htm](http://www.coe.uh.edu/insite/elec_pub/HTML1997/re_jone.htm)

The PLUM project at the Open University provides a good set of evaluation resources at

[www.iet.open.ac.uk/PLUM/evaluation/plum.html](http://www.iet.open.ac.uk/PLUM/evaluation/plum.html)

There may be those who need to (or are interested in) evaluating at an institutional level: see

[www.le.ac.uk/TALENT](http://www.le.ac.uk/TALENT)

A weighty tome for those who are interested is Patton, M Q (1997) Utilization-Focused Evaluation. Sage Publications

#### **Relationship of the session activities to the module assessment**

Examination of criteria for the assessment of LO5

## **Week 8**

Venue LTS Studio

### **Title: Making the materials accessible**

**Session Type:** Central

#### **Learning Outcomes addressed:**

LO1 Report upon the use of a variety of learning technologies

LO2 Demonstrate an understanding of learning processes

LO5 Evaluate the impact of C&IT in a learning situation

#### **Pre-reading and/or Pre-session activity**

If possible find out from students what the barriers they find to using Learning Technology based materials.

#### **The session will consider:**

- Barriers to accessibility
- Disabilities and the use of LT
- Learning styles and LT

#### **Related reading:**

[www.disinhe.ac.uk/resources/guides/accessible\\_courseware](http://www.disinhe.ac.uk/resources/guides/accessible_courseware)

[www.w3.org/TR/WAI-WEBCONTENT/checkpoint-list.html](http://www.w3.org/TR/WAI-WEBCONTENT/checkpoint-list.html)

[www.cast.org/bobby](http://www.cast.org/bobby)

[www.ldonline.org/ld\\_indepth/technology/technology.html](http://www.ldonline.org/ld_indepth/technology/technology.html)

You could start here to investigate learning styles:

[www.cudenver.edu/~mryder/itc\\_data/theory.html](http://www.cudenver.edu/~mryder/itc_data/theory.html)

[www.feda.ac.uk/pubssupport/LearningStylesLinks.asp#LearningStyles](http://www.feda.ac.uk/pubssupport/LearningStylesLinks.asp#LearningStyles)

<http://userwww.sfsu.edu/~ching/personal/Learning/theorists/>

#### **Relationship of the session activities to the module assessment**

Examination of criteria for the assessment of LO5, and its relationship to LO 2&3

## **Week 9**

Venue - various

**Title: Action Learning Sets – preparation of presentations and project review**

**Session Type:** ALS

**Learning Outcomes addressed:**

All

**Pre-reading and/or Pre-session activity**

Prepare progress report and plan for presentation

**The session will consider:**

This will be the last action learning set for the module – it will therefore need to complete the planning process and assist member in preparing the presentation and portfolio.

**Related reading:**

None

**Relationship of the session activities to the module assessment**

Checking progress against the assessment criteria for the module

## **Week 10**

Venue LTS studio

### **Title: Review and Assessment workshop**

**Session Type:** Central

### **Learning Outcomes addressed:**

All

### **Pre-reading and/or Pre-session activity**

Bring plans for the presentation, and the portfolio.

### **The session will consider:**

- Preparation for the presentation
- Assessment of the presentation
- Portfolio preparation
- Continuing professional development
- Publishing your cae-study

### **Related reading:**

[www.bera.ac.uk/writing.html](http://www.bera.ac.uk/writing.html)

<http://www.ou.edu/class/bc2813/PublicSpeakingSkills.htm>

### **Relationship of the session activities to the module assessment**

Review of portfolio preparation

## **Weeks 11 & 12**

Venue LTS studio

### **Title: Presentations**

All participants will present their case-study work to the group.

Module evaluation.

## Appendix



### Case Study Cover Sheet

**Name of participant:**

**Name of institution:**

**Name of EFFECTS tutor:**

#### **Course/module/programme details**

Title of course:

Core/optional:

Student year and mode of study (F/T, P/T):

Details of student body (e.g. major subjects/programmes of study; prior experience of study)

Number of students in cohort:

#### **Technology details**

Technology/ies used in this implementation:

If specific software/courseware has been used:

Name, format and version number

Platform requirements and any installation remarks:

General comments on usability:

#### **Support provided by EFFECTS Team**

*(Give details of how the participant was supported e.g. attendance at workshops, tutorials, drop-in etc. and if possible an estimate of how many hours for each)*

**Summary of project** (no more than 2/3 lines)

## **Case Study**

Length - 2-3 sides A4

Please answer all questions that apply, as they will help us to demonstrate that the EFFECTS action learning cycle has been followed.

### **Outcome 1: Review and underlying process**

(Personal) aims and objectives in undertaking the programme

Sources of background information on embedding learning technology

Reference to any models/approaches used to guide the implementation process

(Note that the outcomes of the Review will be more widely applicable to a written case study, conference presentation or article)

### **Outcome 2: Analysis of course and selection of C&IT**

Previous course/module format, if applicable (i.e. teaching/learning and assessment methods)

Intended outcomes (in terms of students' learning, including knowledge, skills etc)

Any problems with previous format and methods

Options considered for current course and reasons for final choice

### **Outcome 3: Design (integration of C&IT)**

Description of the intervention (i.e. embedding of C&IT)

Intended benefits for students; for staff

Crucial design/development decisions

Any features designed to ensure universal accessibility

### **Outcome 4: Implementation**

Barriers encountered (technical or political)

Brief account of how these were overcome (or what needs to be done to overcome them)

Any problems relating to the student learning experience (eg use of IT, motivation or access)

Reference to any guidelines/advice used or developed as a result

### **Outcome 5: Evaluation and results**

Evaluation method(s) used

Outcomes identified: (e.g. benefits/costs to students; benefits/costs to staff, changes in learning outcomes; changes in local practices, policies or culture)

### **Outcome 6: Dissemination**

Dissemination activities undertaken

Any further developments planned for this or other courses

### **Outcome 7: Review and CPD**

New skills or expertise developed as a result of this programme

Future requirements for skills, expertise or staff development