



A HANDBOOK FOR
Teaching and Learning
in Higher Education

ENHANCING ACADEMIC PRACTICE

THIRD EDITION



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E-learning – an introduction

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INTRODUCTION

The aims of this chapter are: to consider what we mean by e-learning; to give practical advice about approaches to e-learning; to introduce practitioners to key tools and technologies for use in effective e-learning; and to provide an overview of current issues in e-learning and direct the reader to further sources of information.

CONTEXT

Like the printing press, like mechanical flight, gunpowder, the telegraph, the telephone, the microchip, radio and television, the **internet** is a transformative technology. Across the planet, the **World Wide Web** is changing the way we do things, and allowing us to do things we could not do before. It is transforming the way we access information, enabling networks of interest and **communities of practice** to flourish across physical distance with an immediacy and breadth that were impossible less than a generation ago. There is informed speculation that it is changing the way in which today's younger generation learn and communicate, and the way they construct, not just their social networks, but their identities as social beings (e.g. Turkle, 1995).

The Web presents a challenge for formal education. In an age where there is ubiquitous access to high-quality content (once you know where to find it, how to spot it, or how to make it yourself), and where people can seek out and communicate with experts, practitioners and learners in any discipline, what becomes of our role as teachers, what are our libraries for, and what remains special about the physically situated learning communities of academe? Independent, non-formal education between people using the Web is occurring on an unprecedented scale across the globe. So the question we ask now is no longer 'does e-learning work?', but rather: how can we, in the formal, guided process of higher education, use the power and potential of recent electronic media to enable our students to learn better, from us, from each other and independently?

DEFINITIONS

The current trend is to define e-learning rather loosely. The 'e' prefix is unhelpful in that it implies (falsely) that the learning in 'e-learning' is of a special variety, distinct from 'normal learning'. And yet it allows useful semantic wriggle room, so that we don't encumber ourselves with restrictive definitions, which, in an era of rapidly developing technology and practice, might needlessly exclude useful tools or strategies. The Higher Education Funding Council for England (HEFCE), in its 2005 *Strategy for E-Learning*, addresses this question thus:

We have debated whether we need to adopt a specific definition of e-learning at all, since it might curb exploration and restrict diversity. However, we believe we should limit the scope of our strategy, to be sufficiently focused, to the use of technologies in *learning* opportunities.

(HEFCE, 2005)

It is likely that your institution will have its own e-learning strategy or policy. It may reflect this broad approach, or it may choose to interpret the 'e' in e-learning as pertaining purely to networked technologies, rather than including any and all computer-aided learning (CAL). In any case, the key implications of the HEFCE definition, and of many institutional e-learning strategies, are that:

- Rather than a series of systems and tools, e-learning is something that *happens* when students learn with information and communications technology (ICT).
- It may happen in distance learning courses or in campus-based courses (this latter is sometimes called '**blended**' or 'mixed-mode' learning).
- It will usually be defined sufficiently broadly to allow you as a practitioner in your discipline and a teacher of your students to employ a variety of approaches in the way you use it; there is no one way to 'do' e-learning.
- It is not something you 'deliver'. Rather, it is something you enable your students to do.

Acknowledging the breadth of useful definitions of e-learning, the remainder of this chapter presents some web-based technologies and pedagogical approaches which may be of practical use in teaching.

E-LEARNING PLATFORMS

The great majority of institutions have a virtual learning environment (VLE) of some kind. This may also be known as a learning management system or a course management system, or be part of a broader integration of web services and information systems usually known as a managed learning environment.

A VLE is a piece of web-based software that allows the running of all or part of a course or module online. It gives a menu-based or point-and-click interface for constructing an online course area without the need for specialist web development skills. These typically include: a chat room; a discussion board; a calendar; an announcements feature; a tool for building online assessments; a function for setting work, for the students to submit it and for you to grade it; a way to upload, order, index and time-release learning materials; a glossary; a tool for providing web links; a way to track your students' activity in the VLE; and a facility for displaying syllabus information. You can also make simple web pages in a VLE through a basic word processor-like interface (a WYSIWIG: 'What you see is what you get'). Note that a series of sophisticated, linked web pages, or any use of online video and other multimedia are created not within the VLE, but outside it and then uploaded; while VLEs make it easier to run a web-based course, these elements of web production remain a specialist, though learnable, skill. Your institution's VLE may also include a **blog**-like reflective journal, tools for you and your students to record, upload and download voice files, a messaging tool, perhaps an **e-portfolio** tool for your students to store and reflect on materials and information about their progress, and a 'Who's Online' tool. You log on to a VLE via a web address from any internet-enabled computer, and access to your course area/s is usually, though not exclusively, restricted to those students who are on your course.

You are under no obligation to use all of these tools and will be able to 'turn off' or hide features you are not using. You are likely also to have some control over basic design elements, and over the navigational structure of your course area/s. Over the past decade these tools have provided the staple functionality for running an online distance learning course or online elements within a blended learning course. VLEs do not usually provide 'out of the box' the more recent functionality associated with 'Web 2.0' or 'social software' (see below), but do give efficient access to a series of integrated tools which allow you to teach and guide your students' learning in ways you decide are appropriate.

The VLE may be accessed directly or through a student portal. It may be branded by your institution and integrated with other e-learning software (e.g. dedicated assessment software, messaging systems, plagiarism detection software such as **TurnItIn**). It may be that your department uses its own system or that your institution supports one central system. There are still some home-built systems within departments. In the UK, at the time of writing, the market leader in commercial VLEs is *Blackboard*, which acquired the other main commercial VLE company *WebCT*; the products are available in various flavours. **Open source** (free and freely modifiable) VLEs are becoming increasingly popular in UK HE, with growing interest in the *Moodle* platform, and other open source VLE products such as *Sakai* and *DrupalEd*. Whatever the case, it is almost certain there is an e-learning platform available in your place of work to use in your teaching. If you choose to explore e-learning as a field in itself, you are likely to encounter fervent debate about the merits of and educational philosophies behind the major platforms, but, broadly, though their design may foreground particular approaches, they allow you to do similar things.

Any VLE can be used well or poorly, for didactic teaching or for collaborative learning,

for synchronous (live) or asynchronous (over time) activities, for arts or sciences, for assessment, reflection, blended or distance learning, course administration, individual and group work, for discussion or for provision of web-based materials, whether these are documents, web pages, interactive simulations, or use video or sound. Your challenge as a teacher is to examine closely your course, its learning outcomes, your students, the assessment structures and your own pedagogical ethos, and then to choose how to use these tools in a way that is going to be effective and will make best use of your time and skills. Once you start to do this, you may find yourself asking some fundamental questions about the ways in which your students learn, and about your role as a teacher.

Interrogating practice

First steps: a question of support

If you are new to your institution you may wish to find out the following:

- Is there any e-learning support in your department (as distinct from general IT support)?
- Is there an e-learning unit or team in your institution that can offer pedagogical and practical advice about getting started?
- Does your department and/or institution have an e-learning strategy?
- What software is available for use (e.g. a VLE, an e-assessment system, or blogging)?
- What facilities are available for your students to use as e-learners, and do the IT infrastructure and IT-enabled learning spaces encourage or hinder different types of study (e.g. computer-aided group study, multimedia playback)?
- If you are going to be involved in a course which already uses e-learning, how is it used and what will your role be?

E-LEARNING IN PRACTICE

Table 7.1 offers some possible e-learning activities which might usefully be integrated into a course. These combine things you could do within a VLE and tasks which might involve other tools. They are mapped to hypothetical educational challenges of a kind which a lecturer may encounter.

The activities suggested in Table 7.1 vary in scope and scale, and some require more technical skills than others. You may, if you are a new lecturer or a teaching assistant, not be able to re-engineer aspects of the course's teaching or assessment structure. However, with the assistance of experienced peers, or of any dedicated learning or educational

Table 7.1 Hypothetical teaching situations and possible e-learning responses

Issue	E-learning activity
1 There is time pressure on lectures, where students sometimes arrive without sufficient background knowledge; more ground needs to be covered than time allows.	The lecturer records themselves speaking each week, for 20 minutes, on his or her mobile, covering background points. These are then uploaded as 'course podcasts' into either the VLE or podcast-enabling software. The students are invited to submit questions they have about the podcast content via the VLE discussion board, and the lecturer will address the most pertinent of these before the live lecture commences.
2 Students are taking incomplete notes, and are relying on the PowerPoint handouts (posted on the VLE) as their main record of the lectures.	The lecturer stops distributing the PowerPoint slides, and instead asks the students to take thorough notes and post these within the VLE discussion board for their peers to see, and to comment on inaccuracies. If the lecturer has control over the assessment structure, a small part of the assessment may be given to this posting and critiquing activity.
3 Student numbers are so high that the traditional format of seminars is strained to breaking point.	The lecturer asks students to post observations and comments in the VLE's discussion forum after the lecture, and to respond to each other's posts (the lecturer may kick-start this by introducing threads with particular questions or topics). The live seminar is used to conclude these discussions and to answer any outstanding questions that have arisen from them.
4 On a language course, students are not getting enough scheduled time to practise conversation, and are at different levels of comfort.	The lecturer posts a sound file of themselves, starting a debate or conversation about a relevant topic. Students are then required to reply, first to the lecturer and then to each other, and to post these files in either a discussion board or in a 'voice board' using either free recording software and microphones or with voice-recording software now found in many universities such as WIMBA Voice Tools (a sort of online language lab).
5 During a year abroad/on placements/in industry, it is clear that some students drift away from their peers and the university; data suggest that the drop-out rate climbs during this time.	The course teams sets up a discussion board within the VLE, or mailing list, or a social network, in order to encourage a continuing sense of cohesion among the cohort. This may end up being student-led and largely social, but with departmental news made available and any questions answered by staff.
6 In a first-year history course it becomes clear that there are two major problems: some students lack a basic knowledge of the period, and some students use sources indiscriminately and without reference.	The lecturer sets a task where students in small groups research a particular area of historical background, using the online library search tools to locate relevant electronic sources. The group then presents this as a written narrative on a wiki or within a VLE, and clearly references the sources. Other students are asked to comment and to critique the strength of these sources, and to suggest others where appropriate. This is assessed.

(Continued)

Table 7.1 Hypothetical teaching situations and possible e-learning responses (*continued*)

Issue	E-learning activity
7 On a course that is assessed at the end of the semester by examination, it becomes clear only at the end that a percentage of students have not engaged with the reading or understood the topics.	Set required reading within the VLE and track which students are not accessing the material. Set short online tests at key intervals to see which students may be falling behind, and to make it difficult for them not to keep up with the reading.
8 On an engineering course, it is clear at the assessment stage that some students are having difficulty with sustained writing; writing is not focused on during the regular curriculum.	Devise problem-based learning scenarios. Students must present their solutions and reasoning in written form on their course blogs. Other students then give feedback to the author, explaining how passages might be made clearer (this process of writing and rewriting in public collaboration can be very effective online).
9 Lectures have become impractical with numbers of over 300.	The lecturer uses a tablet PC, a microphone and some screen recording software to pre-record the lecture. This is posted as video online, and the lecture slot is used for questions and answers. If the video is posted in the VLE, the lecturer can tell which students have and have not viewed it; thus it can become an attendance requirement, just as attending the live session may be.
10 On a distance-learning course, the students tend to contribute well, but miss the sense of collegiality and presence that a campus location would give them.	The lecturer decides to hold some tutorials, and even social networking events, within an online 3D virtual world , such as <i>Second Life</i> , <i>There</i> or <i>Active Worlds</i> .
11 It becomes clear that some students are finding it difficult to organise their own learning, and are not confident that their progress has a structure to it. They find it difficult to express what they have learned so far, and how it relates to what they are assessed on.	The department decides that each student will have a reflective journal (or e-portfolio) where they are given the learning outcomes and updated information about their progress, and where they are required to reflect on their progress.
12 In assessed group projects, students are producing much good work, which may be useful to their current and future peers, but which languishes in a filing cabinet.	Require that the group work is published online, as a website, wiki or multimedia presentation (ensuring that any production skills involved are relevant and built into the course's stated transferable skills and learning outcomes).

technologists whose support you may be able to access, all of them should be possible. They are purely illustrative of the kinds of activities that academic staff may find successful, and are not, of themselves, recommended. The key thing to ask before embarking on any sort of e-solution is 'What is the purpose of this?' Higher education e-learning platforms and websites are littered with empty wikis, deserted discussion fora, rarely visited online course areas. This is usually due to three factors, of which the first is the most important:

- 1 There is insufficient purpose to the e-intervention; it is solving a problem that does not exist.
- 2 It is not built into the regular face-to-face teaching of the course or its assessment structures.
- 3 Insufficient time is available to set up and then diligently maintain the activities.

E-learning rarely works where it is regarded as simply a value-added extension of the main part of the course. It is also unlikely to flourish where there is little support or incentive available, or recognition that it is time-consuming (remember that e-learning is not automated learning; it requires the teacher's presence as much as other types of teaching). Lastly, as assessment drives student learning and is 'the most powerful lever teachers have to influence the way students respond to courses and behave as learners' (Gibbs, 1999, p. 41), so it follows that e-learning elements and activities will need to be integrated into the way the course is assessed (see Chapter 10 on assessment).

Once you start to approach the subject from the basis of your and your course's educational aims, you will inevitably find yourself thinking about learning design (see also Chapter 4). As you move from the basic provision of course management information and lecture materials made available via a VLE towards the knottier but more productive challenges of thinking what e-learning you want your students to actually do, you will need to consider how to design learning activities for your students, which have clear purpose and are integrated into the design of the course. The examples given in Table 7.1 are illustrative only; you will have your own challenges to surmount and your own answers and ideas.

There is much theory about design for e-learning, although one can also say that 'there are no models of e-learning *per se*, only e-enhancements of models of learning' (Mayes and de Freitas, 2004). In practice, we rarely start consciously from theoretical models of learning, but they are useful as you ask yourself some of the questions they try to answer or expand upon, and you may find that some have utility as you move from abstract consideration towards a practical solution. How we design for our students' e-learning, and what philosophical traditions we are acting within when we do so, is a fascinating and complex question but one which cannot be given further consideration in this chapter. The interested reader can find many excellent books which include overviews of learning models as applied to e-learning and useful checklists for the practitioner (e.g. Beetham and Sharpe, 2007) and online studies about mapping theory to practice in e-learning design (e.g. Fowler and Mayes, 2004).

Interrogating practice

Questions for e-learning design

- What are the learning outcomes of the course?
- What are your aims for the students? What do you want them to learn 'around the edges' of the formal outcomes? What skills and understanding do you want them to develop?
- Are there any particular learning activities you can think of to encourage the above? Can these be built into the design of the course?
- Do you and the students have access to any technologies or tools that might be used to craft and deliver these activities?
- Does the way the course is assessed encourage the students to meet the outcomes, and can you use any technologies discussed in this chapter to (1) make the assessment drive the students' learning, and (2) ensure timely **feedback** to assessment which can help the students develop as the course progresses?

Case study 1: Using VLE tools to promote feedback-driven learning experiences

At the Tanaka Business School, Imperial College London, all courses we teach are accompanied by a corresponding course area in the School's VLE. Learning technologists train us to use the various tools and assist in building or sourcing course content. I worked closely with our learning technologist, David Lefevre, to develop an online course area in our VLE for a postgraduate course in accounting management analysis.

In designing the area we were keen to avoid a technology-driven approach; we wanted to promote interactive and feedback-driven learning experiences. To this end our focus was on interactive content and assessment.

Our first step was to convert the traditional paper-based course booklet into a series of interactive multimedia activities. The introduction of new concepts (for example, the presentation of a financial statement) is followed by interactive activities in which students are given the opportunity to test and apply these concepts in a series of real-world tasks. I believe this ability to interact and play with the material leads to a deeper and more meaningful grasp of the content introduced on the course. While studying the materials students are able to

contact either me or a teaching assistant through the VLE discussion boards. Students receive further feedback on their progress through a series of online formative tests which review and recycle the material.

For **summative assessment**, we retained a paper-based examination but took advantage of the VLE discussion boards when designing the coursework component. Prior to adopting the VLE, students were divided into groups and asked to produce an investment analysis. In the VLE-based coursework, students are given the same task but are asked to post their contributions on to a group discussion board. I am now able to assess not just the final product but also the process students have been through to get there.

The discussion boards created a transparency to the student learning process. It was very satisfying to know how much work the students put into their learning. Unsurprisingly the most active online students achieved the highest mark in the final closed book examination. However, whether this correlation indicates a causal relationship is a matter for further research.

Students who were not very vocal in class contributions now had an alternative forum in which to articulate their knowledge and learning. I received many comments on how much they had learned from each other during the discussions and how this had made the learning process far more engaging and effective.

(Ebrahim Mohamed, Director, Imperial Executive MBA Programme, with
David Lefevre, Senior Learning Technologist,
Tanaka Business School, Imperial College London)

THE ROLE OF THE TEACHER IN E-LEARNING

A course that makes extensive use of e-learning may break down the traditional academic role into several functions, which may be carried out by more than one person. One might, for example, have an online course in which there are:

- the 'lecturer', who works with a learning technology professional to produce suitable online content, be it text based or a lecture **podcast**;
- the 'e-moderator', who may be a teaching assistant with responsibility for the daily upkeep of the course's discussion forum, to stimulate discussion, and run learning activities based on the lecture material and reading (Salmon, 2000, 2002);
- group facilitators, who work with small groups of students on set collaborative activities, and may be students on the course themselves, or perhaps Ph.D. students in the department;
- a technical and/or administrative role responsible for answering practical student queries about the technology or course;
- the assessors, who may be brought in from outside the course to mark student work;

- one or more 'academic guests', supplying further specialist information, perhaps hosting a web conference or chat room discussion about a topic in which they have expertise (these can freshen up a course and give the student the feeling of being part of a larger faculty).

Many e-learning courses will feature none or only some of these roles, but they give an idea of the roles that may need to be taken on/learnt by the teaching function in a typical distance learning or e-learning intensive course. We can see that it is vital to acknowledge (1) the multiplicity of roles the academic function must adopt in a successful e-learning course, and (2) the new skills that even the most experienced teachers may need to learn to fulfil these functions. It is also crucial that everyone is aware of the boundaries and obligations of their roles within such an arrangement.

BEYOND VLES

Web 2.0 and social software

One of the biggest developments in the use of the Web-at-large has been the emergence and widespread use of so-called 'Web 2.0' tools, or 'social software'. Unlike the traditional website where designers publish their pre-made content (or lecturers post their lecture notes), social software provides web users with tools that are more or less content-free, but which can be used collaboratively to generate, present and share user-made content. Popular examples of this sort of software include sites and services such as: *Flickr* (for sharing photographs); *Facebook*, *Bebo* and *MySpace* (for social networking); *YouTube* (for posting home-made movies and other clips). Tools such as blogs and wikis are also now a popular way to engage in a networked discourse over time. A further layer to this social activity is the persistence and growth of different kinds of grouping, networking and discussion tools (from the pre-Web internet e-mail groups to live messaging tools by *MSN*, *Yahoo*, *AIM* and many others, with peer-to-peer file-sharing applications). If we consider that interfaces which harvest information and present all these disparate services in an integrated manner are increasingly important to users (from a personalised *Google* home page, to a home-made web page which culls various **RSS** (really simple syndication) feeds from blogs and news sites, to a university's student portal pulling in various electronic services in a personalisable way (which some call a 'PLE')), we can see that the Web as it might have been perceived in HE a few years ago, of information-led websites, mail groups and monolithic e-learning platforms, is now a great deal more diverse and complex, and is humming with people, many of them undoubtedly our students, networking, talking, and creating and sharing resources.

It is possible to claim that effective learning is inherently a social activity, that we learn best from a social and experiential construction of knowledge (e.g. Vygotsky, 1978). If we adhere to that, then we may suggest that any effective e-learning will use software in a social manner, so chat room tutorials from the end of the last century are in a sense

a precursor to this newer, social, user-led Web. It is certainly true that most of today's undergraduates are 'doing e-learning' in unofficial ways right beneath our noses. They chat on **MSN Messenger** in bedrooms, labs and libraries, share views and information on *Facebook*, search out journal articles and secondary sources through a popular search engine rather than through their institutions' e-journal subscriptions, and share comments, tips and even their work on mobile devices in the palms of their hands. This culture of collaboration, this ceaselessly social construction of shared knowledge across a multitude of platforms, presents a challenge and a huge opportunity. It is a challenge because it can stray very close to a culture of plagiarism, and because the wealth of readily available information may lead to a form of snow blindness, where the academic qualities of criticality, focused discourse, explicit recognition of sources become submerged in noise. But it is an opportunity because it allows us not always just to shun these sorts of interaction, but to harness their power, that our students may work together and by themselves in these familiar ways, but under taught guidance, to help them arrive at the requisite understanding of their subject and develop academic techniques.

Reusable learning objects (RLOs), free resources, open courseware

There are various schemes to enable e-learning content creators to share their creations across institutions. The shared resources are often called reusable learning objects (**RLOs**). These may be as atomised as a *Flash* animation of a bird's wing in flight, a traditional set of critical questions about Sir Gawain and the Green Knight, or a problem-based learning scenario with accompanying resources. The idea is that each may be taken and used by a teacher in the design and delivery of a course. A good example in medical education is *IVIMEDS*, the International Virtual Medical School (www.ivimeds.org/). It is also worth browsing the website for the Centre for Excellence in Teaching and Learning (CETL) in RLOs (<http://www.rlo-cetl.ac.uk/>), and exploring **Jorum**, established by the UK's **JISC** (a free online repository service for teaching and support staff in the UK). Two large-scale illustrative examples of this growing trend are:

- 1 the Open University's *OpenLearn* platform/website which allows anyone to register for free online courses, including access to materials and the ability to communicate with other learners (in LearningSpace), and also allows teachers to reuse and collaborate on educational resources (in LapSpace) (see <http://www.open.ac.uk/openlearn/>);
- 2 *iTunesU*, a service run by Apple which enables educational institutions (only in the USA at the time of writing) to make educational content available through its iTunes software.

There has been a large growth in the amount of freely available, high-quality, online materials aimed at higher education across the globe. The Massachusetts Institute of

Technology, through its Open Courseware initiative, has materials from over 1,700 courses freely available under a **Creative Commons Licence** (<http://ocw.mit.edu/OcwWeb/web/home/home/>). The Open Courseware Consortium has participating member institutions across the globe (<http://www.ocwconsortium.org/>).

With the growth of **broadband** in some areas of the world, we see too a rise in the amount of audio and video content that is freely available to teachers and learners. Podcasts are proving a popular way to disseminate educational content (e.g. Warburton, 2007), so that students (and interested lay listeners) can subscribe and be notified of new releases via a blog, or by an RSS reader (such as may be found on **iGoogle** home pages), or via software such as **iTunes**.

Many colleagues are wary about using resources produced within other institutions, about the prospect of generic web-harvested content being treated as a ready-made solution, and about sharing their own resources with competing institutions. Legal, technical and social barriers remain. However, it is clear that there is a trend towards the availability and sharing of high-quality educational materials, and that if you make canny use of these resources at the course design stage you may be able to enrich your teaching and your students' learning. It is also apparent that with an increasing amount of material available this way, universities and their academics must offer an e-learning experience based on more than simply providing their (often fee-paying) students with access to excellent home-grown materials.

Interrogating practice

Selecting tools for e-learning

Once you have decided on the purpose and nature of your e-learning activities, and how you would like your students to engage with any e-content in the course, you might consider:

- What tools are supported and available in your institution (e.g. within the main VLE, or on departmental web space).
- Whether any of your activities require the use of other tools. Can you use freely available Web 2.0 or social software tools? Are there any copyright ownership implications or local policies about using external tools?
- Are there any technical or cultural barriers to overcome, and do you have support in your institution to help you with these (e.g. an e-learning team in your department or institution)?
- Will your students be absolutely clear about the purpose of the learning activities you are asking them to participate in through the use of these tools?

OVERVIEW

This chapter has looked at how changes in technology outside formal education open up new challenges and opportunities for us in our roles in higher education. Consideration has been given to various tools and technologies. Barriers to successful e-learning and some examples of possible e-learning activities have been presented, with the caveat that the key to making sure that e-learning will occur successfully is to consider the educational purpose first and the technology second.

E-learning tools and fashions date quickly. Back at around the turn of the century, large projects were in progress to revolutionise education through electronic media. Grand claims were made, and much money spent, for example on the UK e-University project. There was also something of a gold rush to repurpose learning materials and launch large-scale, content-led, broadly self-study distance-learning programmes. Today, the focus is returning to what makes good teaching, and thus encourages successful learning, whatever media are being used. In an era of widespread, free access to high-quality materials, a successful course – distance or blended – has to be about much more than high-quality electronic content. Rather, it will be distinguished by the quality and success of the interactions within it: how students work alone and with each other to make pertinent, visible contributions and progress; how the teacher moderates conversations, chooses appropriate uses of technology for key activities; how e-assessment elements keep the students learning and engaged in discourse; and how well the subject expert/s, be they lecturers, teaching assistants or professors, use the media and tools available to instruct, guide, interest and inspire their students.

Thus these tools, used appropriately, give one the opportunity for:

- synchronous and asynchronous interaction and communication (student–student and student–teacher);
- the sharing and generation of tutor-made and student-made materials;
- a richness of media involving sound, image, 3D simulation, video, flat text and graphical representations;
- a flexible way to embed formative and summative assessments into a course;
- a set of tools and techniques for teaching students on campus or anywhere where there is an internet connection.

Far from being automated learning or purely self-directed learning, it is clear that where effective e-learning takes place, it does so with the guidance and presence of a successful and thoughtful practitioner. That is, the role of the teacher in e-learning is just as important to student learning as it is in the seminar room or lecture hall.

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SUGGESTIONS FOR FURTHER READING

- Beetham, H and Sharpe, R (eds) (2007) See above.
- HEFCE (2004) *Effective Practice with E-Learning – A Good Practice Guide in Designing for Learning*. Available online at <http://www.jisc.ac.uk/media/documents/publications/effective_practiceelearning.pdf> (last accessed 30th September 2007).
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- Salmon, G (2002) See above.