

JISC

Effective Practice with e-Learning

A good practice guide in designing for learning



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The JISC e-Learning Programme promotes the development of national and international standards for effective e-learning in collaboration with partner agencies, national strategic bodies and in consultation with the education and research sectors. Information about the programme can be found on the JISC e-learning Programme website.

www.jisc.ac.uk/elearning



Effective Practice with e-Learning

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Foreword



The JISC Learning and Teaching committee launched the e-Learning Programme in October 2003. This now has four development strands which together will provide a major impetus for e-learning in UK post-16 and higher education. It includes the funding of projects to provide for an improved

technical framework, support the development of tools for e-learning, encourage regional and subject-based collaboration, and offer opportunities for experimentation with new technologies. The e-Learning and Pedagogy strand of the Programme aims to contribute to this change process by focusing on the ways in which a better understanding of pedagogical approaches can help practitioners in making appropriate use of technology.

We began by seeking to answer some fundamental questions about e-learning. How can we best define e-learning? Is it possible to describe e-learning activities in more systematic ways? How can we refine our understanding of effective practice? How can e-learning be implemented in conjunction with more established approaches to supporting learning? How can innovators in e-learning learn from each other and exchange good practice? Our first projects have attempted to provide answers to these questions and set a solid foundation both for this publication and for future work in the e-Learning Programme.

Effective Practice with e-Learning offers a summary of the findings from these projects, integrating these with case studies to illustrate e-learning in context. We have

concentrated here on understanding *learning activity*, moving beyond an understanding of e-learning as simply providing 'learning objects' to seeing the technological revolution as central to contemporary teaching and learning processes. Our second important emphasis has been on *effectiveness* – that is, considering carefully how, when and where e-learning can contribute to improving the quality of provision. We have done this by exploring the principle of the 'e-learning advantage'.

We hope that this guide will provide colleagues in post-16 and higher education with a timely opportunity to reflect on the value of e-learning, by offering examples which can inspire them individually. This will not happen on a larger scale without encouragement and support from institutions, and the guide can also be deployed in the context of institution-wide professional development strategies.

This publication owes much to the vision of Sarah Porter, Head of Development, JISC, and to the energy and engagement of Sarah Knight, e-Learning and Pedagogy Programme Manager, who has integrated the outcomes of the initial projects into this publication. Finally, thanks are due to members of the e-Learning and Pedagogy Steering Group and the e-Learning and Pedagogy Experts Group for their valuable contributions. Our aim is that this guide, and other programme outcomes still to follow, will contribute to the achievement of one of the key strategic aims of JISC: 'to help the sector provide positive, personalised user learning experiences and to aid student progression'.

Peter Findlay

Chair, e-Learning and Pedagogy Steering Group
JISC Learning and Teaching committee



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“e-Learning exploits interactive technologies and communication systems to improve the learning experience. It has the potential to transform the way we teach and learn across the board. It can raise standards, and widen participation in lifelong learning. It cannot replace teachers and lecturers, but alongside existing methods it can enhance the quality and reach of their teaching.” Towards a Unified e-Learning Strategy, DfES 2003



Introduction

This guide is aimed at practitioners in post-compulsory education and training – lecturers, tutors and support staff in higher and further education institutions, as well as facilitators, trainers and tutors in adult and community learning. What unites this diverse group of professionals is an interest in enhancing the quality of teaching and learning in their institutions and a curiosity about how e-learning can assist them.

Much has been promised about the potential of technology to revolutionise learning, with benefits identified in six key dimensions:

- **Connectivity** – access to information is available on a global scale
- **Flexibility** – learning can take place any time, any place
- **Interactivity** – assessment of learning can be immediate and autonomous
- **Collaboration** – use of discussion tools can support collaborative learning beyond the classroom
- **Extended opportunities** – e-content can reinforce and extend classroom-based learning
- **Motivation** – multimedia resources can make learning fun

In addition, there are benefits to practitioners in the increased efficiency of tracking and monitoring learners' progress. Yet despite these potential benefits, e-learning is still not uniformly adopted across the sectors, or even within individual institutions. What has worked against its adoption?

Making the move towards new technologies presents practitioners with a complex set of challenges – they may need to develop new skills, embrace changes in the nature of their role and then reassess the pedagogies they employ.

Effective e-learning institution-wide will also depend on initiatives supported and implemented by senior managers. Finally, even when its potential advantages have been recognised, how, when and where to implement e-learning *in conjunction with established practice* has still not been fully explored. For many practitioners, e-learning brings with it as many questions as answers.

The purpose of this guide is to focus attention on these questions. It aims to establish what are the most pedagogically sound and accessible ways of embedding e-learning into everyday practice. Its purpose is to link theory to practice in order to develop a shared understanding by practitioners across the sectors as to how, when and where to apply e-learning to the best advantage of learners. The views and experiences of practitioners in different teaching and learning contexts then provide an insight into how the e-learning advantage has been used in practice.

How to use this guide

Effective Practice with e-Learning sets out the current context before exploring a definition of effective practice, drawing on the research and desk studies commissioned under the e-Learning and Pedagogy strand of the JISC e-Learning Programme. Ten case studies form the central part of the publication and the accompanying CD-ROM. Five of the case studies are also available in video format on the CD-ROM. More detailed versions of the case studies can be found on the JISC e-Learning and Pedagogy website at: www.jisc.ac.uk/elearning_pedagogy.html

Some readers may wish to start with the case studies as insights into e-learning in practice and subsequently explore how effective practice with e-learning should be defined and classified.



e-Learning in context

At a national level, government initiatives in all four UK countries have promoted e-learning as a means of empowering and engaging learners. Increasingly, they also focus on the practitioner as an active 'innovator' of new practices and techniques.

In the learning and skills sector in England (which incorporates all provision in education and training from 14-19 and adult and community learning), the 'Success for All' (DfES 2002) initiative has focused attention on 'putting teaching, training and learning at the heart of what we do', encouraging the identification and sharing of best and innovative practice through Learning and Skills Beacon awards for high-performing providers.

The establishment of the National Learning Network (NLN) for the further education sector in England and continuing investment in infrastructure have prepared the way for an e-Learning Strategy through which the benefits of technology can be brought to bear on everyday practice. The ILT Champions' Programme and the Ferl Practitioners' Programme continue to support staff development in the use of learning technologies, making inroads into establishing the skills practitioners will need to teach with technology.

In Scotland, the joint funding councils established a Joint e-Learning Working Group, a key finding of which has been that e-learning should be focused on learning, not on technology. The councils have subsequently committed £6m over two years across further and higher education to invest in projects which will embed transformational change, thus supporting the Scottish Executive's ambition of achieving *'the best possible match between the learning opportunities open to*

people and the skills, knowledge, attitudes and behaviours which will strengthen Scotland's economy and society'.

Education and Learning Wales (ELWa) has also identified the potential of e-learning in supporting *'the most exciting, creative, fulfilling and enduring activity in the world – that of learning'*. Investing in the National Learning Network materials, raising awareness of the benefits of integrating these materials into learning programmes and raising the ICT skills level amongst practitioners in Wales are the key priorities over the next two years in the e-learning strategy for Wales.

The Department for Employment and Learning (DEL) in Northern Ireland views the integration of e-learning into the curriculum and the development of strategic leadership as the key to transforming educational institutions. Through collaborative partnerships between providers, innovative approaches to e-learning, for example, in e-assessment and e-mentoring, are being explored to improve what the sector can offer to the learner, to employers and to local communities.

A similar drive towards raising standards in teaching in higher education in England was signalled in the White Paper 'The Future of Higher Education' (DfES 2003), which claimed that teaching had for too long been *'the poor relation'* in higher education. Again a more 'innovative' approach to teaching and learning was encouraged. The White Paper also set an agenda for increased flexibility in higher education courses to meet the needs of a more diverse student population. On the ground, the impact of e-learning strategies is beginning to be felt in new initiatives at

“e-Learning is fundamentally about learning and not about technology. Strategic development of e-learning should be based on the needs and demands of learners and the quality of their educational experience.”

Joint SFEFC/SHEFC e-Learning Group: Final Report 2003

classroom level, while a new generation of research and development units has sprung up to ensure that the potential for enhancing teaching and learning with new technologies is fully explored.

Adult and community learning, a sector distinct from further and higher education in role and ethos, occupies a vital role in widening participation, encouraging lifelong learning and in providing all, especially disenfranchised, adults with the skills and access to technology they require as citizens in an information age. The sector now has membership of the National Learning Network, but in 2004, still has limited technical infrastructure and is at the developmental stage in terms of strategies for teaching and learning with information and communications technology. However, in some areas, notably learndirect and UK online centres, its experience in the delivery of learning through technology exceeds that of other providers.

These sectors are at different stages of development and confidence with regard to e-learning and as a result may have differing perceptions of what constitutes ‘effective’ practice, given their separate target groups, aims and functions. In all of these cases, however, the role of e-learning in supporting learning, raising standards and widening participation is either explicitly expressed in government initiatives, strategies and policies, or is implied by the emphasis on flexibility, choice and the increasing value of the importance of the learner’s experience.

Against this backdrop of growing awareness of the role of e-learning in effective practice, in December 2003, JISC launched a new e-Learning and Pedagogy strand as part of a wider e-Learning Programme. The aim of the Pedagogy strand is to:

- **scope existing learning theories, frameworks and models**
- **explore how an emerging body of established practice in e-learning could be mapped against theoretical perspectives**
- **promote the application and development of e-learning tools and standards to support effective practice**

Starting point



e-Learning = *enhanced* learning

What is e-learning?

Defined as 'learning facilitated and supported through the use of information and communications technology', e-learning may involve the use of some, or all, of the following technologies:

- desktop and laptop computers
- software, including assistive software
- interactive whiteboards
- digital cameras
- mobile and wireless tools, including mobile phones
- electronic communication tools, including email, discussion boards, chat facilities and video conferencing
- Virtual Learning Environments (VLEs)
- learning activity management systems

e-Learning can cover a spectrum of activities from supporting learning, to blended learning (the combination of traditional and e-learning practices), to learning that is delivered entirely online. Whatever the technology, however, learning is the vital element. e-Learning is no longer simply associated with distance or remote learning, but forms part of a conscious choice of the best and most appropriate ways of promoting effective learning.

Introduction to effective practice with e-learning

Exploring the concept of effective practice in either 'e-', or other types of learning, begins with an understanding of the term 'pedagogy'. Formerly restricted to erudite usage, the term is now used with increasing confidence and panache by those who discuss and debate educational principles.

However, it is important that those involved in learning and teaching have as much ownership of this term as those who direct, control and manage the institutions in which practitioners practise their art. Defined as 'the activities of educating, or instructing or teaching' and 'activities that impart knowledge or skill', pedagogy implies a very special skill, for which the term 'art' is not misplaced, although the efficacy of that art may be put to the test through statistical methods. Once defined as an art, the role of the practitioner can be viewed as essentially creative and the term 'pedagogy' (literally in Ancient Greek 'a guide who took a boy to school') can be used to explore the nature of the skills involved.

As a starting point, judgements about effective practice with e-learning can be based on the same criteria as judgements about effective practice in learning generally – that the practice should:

- engage learners in the learning process
- encourage independent learning skills
- develop learners' skills and knowledge
- motivate further learning



And in the broadest sense, effective learning is likely to occur when opportunities to learn involve:

- the right resources
- the right mode (or blend of modes) of delivery
- the right context
- the right learners
- with the right level of support

The availability of technologically mediated forms of learning simply introduces, it could be argued, some additional decisions for the practitioner: from the technologies available for use, which should be used, when and with whom?

Bringing about effective learning, however, is a complex and creative process which involves identifying objectives, recognising the needs of the learners, selecting the most suitable approach, and then striking an appropriate balance between e-learning and other modes of delivery when working within a technology-rich context (one in which practitioners can choose between e-learning and traditional options). In this guide, this process has been termed 'designing for learning'.

Designing for learning



A learning activity can be defined as an interaction between a learner and an environment, leading to a planned outcome. It is the planned outcome which makes learning a purposeful activity.

Practitioners have always planned activities for learning. In a technology-rich context, this process is brought into sharper focus by the extended range of options available.

Approaches to learning

Designing for learning will take place in the context of a preferred **pedagogical approach** which in itself will be derived from a perspective on the nature of the learning process. It is possible to identify three broad perspectives, each making fundamentally different assumptions about how learning occurs. These are given in Fig 1, together

with the identifying features and pedagogical approach associated with each perspective.

One, or a combination of these perspectives, may suit different subject areas, different kinds of learner, or different values about what is important in the learning encounter. No one pedagogical approach (or combination of approaches) is more or less likely to involve e-learning as is shown in the case studies in this publication.

The approach selected is likely to be based on what the practitioner knows of learning theory and practice, for example from their training and from talking to colleagues, as well as the professional know-how they have gained in the course of their career. It may be influenced by the nature of the learning outcomes, the practitioner's awareness of learners' preferences, or by the nature of the environment in which the learning takes place. The pedagogical approach a practitioner uses may not be articulated or given a name, but will have an influence on the designing process.

The search for effective practice will mean exploring the *rationale* behind the approach adopted and ensuring its relevance to the other essential elements underpinning designing activities for learning.

“The focus here is on understanding *learning activity*, moving beyond an understanding of e-learning as simply providing content and ‘learning objects’, to thinking about technology as central to contemporary teaching and learning processes, and seeing e-learning as part of the range of resources available to the professional practitioner.” Peter Findlay, JISC Learning and Teaching committee

Defining approaches to learning

Perspective	Assumptions	Associated pedagogy
The associative perspective	<p>Learning as acquiring competence</p> <p>Learners acquire knowledge by building associations between different concepts.</p> <p>Learners gain skills by building progressively complex actions from component skills.</p>	<ul style="list-style-type: none"> ■ Focus on competences ■ Routines of organised activity ■ Progressive difficulty ■ Clear goals and feedback ■ Individualised pathways matched to the individual's prior performance
The constructive perspective (individual focus)	<p>Learning as achieving understanding</p> <p>Learners actively construct new ideas by building and testing hypotheses.</p>	<ul style="list-style-type: none"> ■ Interactive environments for knowledge building ■ Activities that encourage experimentation and discovery of principles ■ Support for reflection and evaluation
The constructive perspective (social focus)	<p>Learning as achieving understanding</p> <p>Learners actively construct new ideas through collaborative activities and/or through dialogue.</p>	<ul style="list-style-type: none"> ■ Interactive environments for knowledge building ■ Activities that encourage collaboration and shared expression of ideas ■ Support for reflection, peer review and evaluation
The situative perspective	<p>Learning as social practice</p> <p>Learners develop their identity through participation in specific communities and practices.</p>	<ul style="list-style-type: none"> ■ Participation in social practices of enquiry and learning ■ Support for development of learning skills ■ Dialogue to facilitate the development of learning relationships

Fig 1 Defining approaches to learning

Learning activity design

A learning activity represents the means by which the practitioner brings about learning and seeks to influence the development of learners. Fig 2: *A model of learning activity design* illustrates more fully the art of the practitioner at work in creating and sequencing learning activities, by highlighting the importance of aligning three essential elements at the heart of learning activity design with the overall pedagogical approach and practice. Each of the three elements brings with it factors which will have some influence on the designing process:

Learners

Their needs, motives for learning, prior experience of learning, social and interpersonal skills, preferred learning styles and expectations of the course and of the practitioner

Learning environment (face-to-face or virtual)

Available resources, tools, facilities and services and their match with the learners' needs

Intended learning outcomes

The purpose behind the learning activity; internal or external goals and targets

Within the context of any activity, the interaction between these three factors will be dynamic and may influence

decisions in an unequal way. The decisions that underpin designing for learning in any particular context, and in any given pedagogical approach, will increasingly involve a selection from both new and established practices, based on perceptions of the learners' needs, the nature of the learning environment and the intended outcomes, as practitioners seek to orchestrate effective learning by seeking out the most appropriate tools.

What is important to the successful adoption of e-learning is understanding how practice involving learning technologies can enhance the development of learning activities and how e-learning can be effectively integrated into and alongside established practice, to ensure that, whatever the approach and the intended learning outcomes, the learning potential of *all* learners is maximised.

Furthermore, learning takes place in a social and curricular as well as physical context. The individual's relationship with the group or groups that surround the learning activities will also partly define the learning outcomes. The curricular context may also influence the process by suggesting a particular pedagogical approach which in turn must be matched to learners, the resources available in the learning environment and the intended outcomes. In this guide, this complex process on which the art of the practitioner depends has been termed 'designing for learning'.

A model of learning activity design

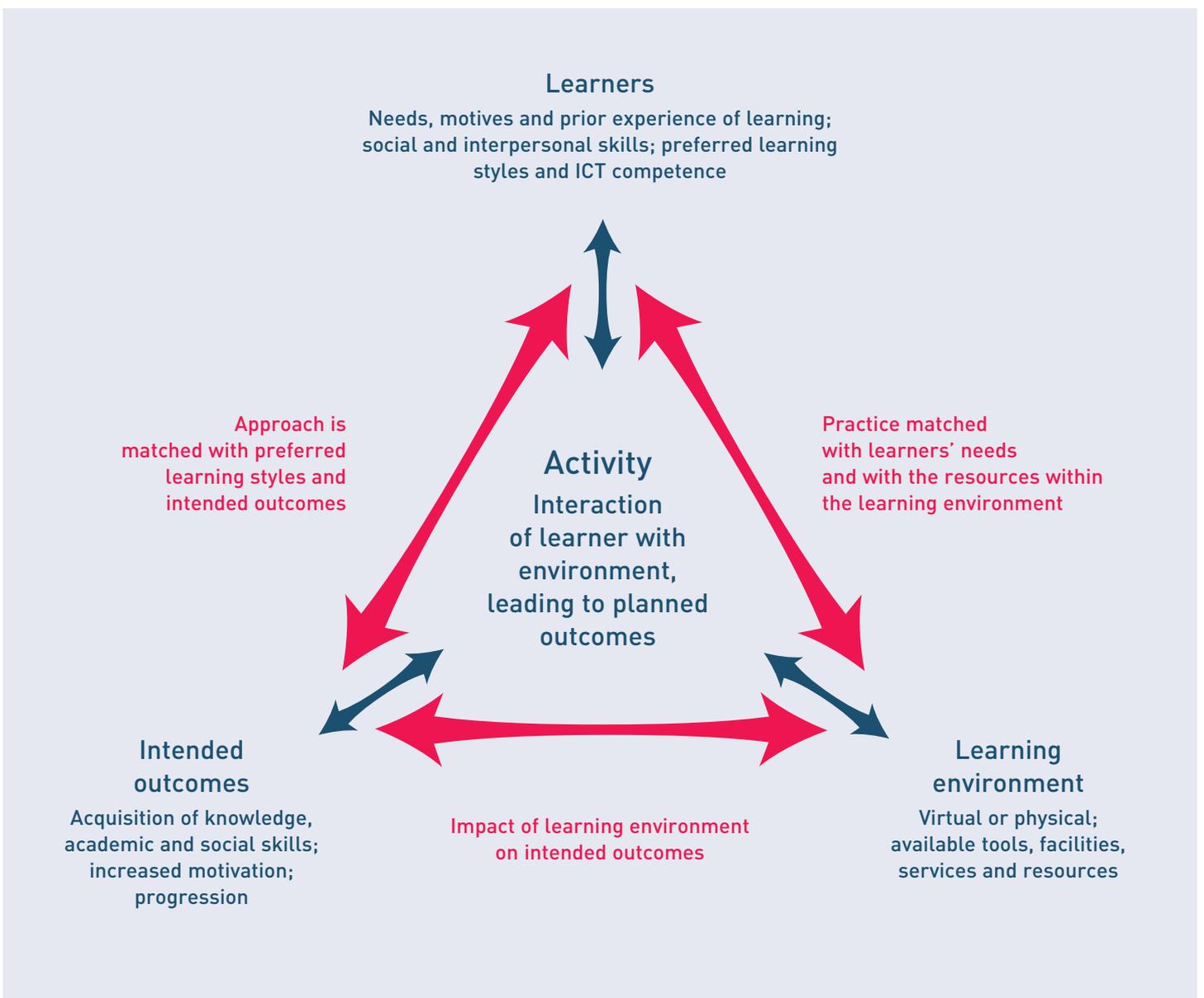


Fig 2 Adapted from a specification for learning activities H.Beetham, 2004

Building in e-learning



How this process may work in practice can be seen in Fig 3: *Designing a learning activity in a technology-rich context* which is based on the case study **Learning through doing** on page 32.

This case study is also featured in a supporting video clip on the CD-ROM. It is advised that the video clip is viewed in conjunction with reading this table.

Designing a learning activity in a technology-rich context

Issues to consider	Designing a learning activity to incorporate e-learning
<p>1. Learners (their needs, motives for learning, prior experience of learning, social and interpersonal skills, preferred learning styles and ICT competence).</p>	<p>Adult Entry 1 ESOL learners from a wide range of communities and with varied prior experience of ICT.</p>
<p>2. Intended learning outcomes (acquisition of knowledge, academic and social skills, increased motivation and ability to progress).</p>	<p>The activity is designed to advance learners' linguistic skills and raise recruitment and retention rates by developing learners' confidence and pleasure in learning.</p>
<p>3. Learning environment (face-to-face or virtual) – available resources, tools, facilities and services and their match with the learners' needs.</p>	<p>Where does the activity take place? In a classroom.</p>
	<p>What resources are available?</p> <ul style="list-style-type: none"> ■ Prepared questions and answers ■ Digital images ■ Printed handouts where required.
	<p>What technologies are available? Data projector, laptop, interactive whiteboard and mobile voting devices.</p>
	<p>What features of established practice will be important? Practitioner's expert knowledge of topic and content, oral and interpersonal skills produce a well-structured, relevant and effectively delivered learning encounter. Opportunities are provided for repetition of new knowledge with face-to-face feedback where required.</p>

Full participation is key to the *engagement* and *enjoyment* of learners.

Issues to consider	Designing a learning activity to incorporate e-learning
<p>4. The learning activity (the means by which the practitioner brings about learning and seeks to influence the development of the learners).</p>	<p>Describe the learning activity Activities combining both established and e-learning practice promote the development of linguistic skills and allow learners to check their own understanding without losing confidence or motivation.</p>
<p>5. The approach taken (related to learners' needs, preferred learning styles, the nature of the learning environment and the intended outcomes).</p>	<p>Associative, constructive (individual focus), constructive (social focus), situative Associative in the main. Learners develop linguistic skills progressively through structured tasks.</p> <p>Learning styles Through the introduction of images, the activity is chosen to appeal to visual learners. The learners are also actively engaged through their use of the mobile voting devices, encouraging the kinaesthetic learners. Use of audio files can further assist learners with an auditory preference.</p> <p>Inclusion All learners are actively engaged in the activity. The interactive whiteboard is used to encourage learners to contribute, either by writing on the board or touching it to select options.</p> <p>Assessment Formative assessment activities in the form of quizzes and scenarios are supported by a technology-enabled voting system to enable learners to check and develop their own understanding.</p>

Fig 3 Designing a learning activity in a technology-rich context



The e-learning advantage

Combine e-learning options with the best of established practice and the practitioner has greater capacity to create an exciting and meaningful learning experience.

The search for effective pedagogy is of key importance since the need to excite learners' interests, retain them on courses and enable their progression is vital to institutions and practitioners as well as to the learners themselves. Practitioners and learners both need to acquire, and be able to deploy, a set of skills as the situation demands, rather like card-players who choose when to play particular cards in their hand to gain the advantage. The case studies that follow illustrate where the e-learning option has provided effective solutions to particular challenges, thus adding to the ability of both learners and practitioners to achieve the desired outcomes.

e-Learning may in some contexts be the only 'card' that can be used, but more frequently, it is an option that extends the range and power of *delivery*, and a technique that can enable more *active* learning for a *wider variety* of learners. By placing e-learning options alongside established practice, it should be possible for individuals designing learning activities to choose which will give them the strongest hand to play.

Ten case studies from across the sectors have been selected in this study to provide insights into effective practice developed in response to real-life challenges. The different contexts in which these solutions come into play suggest that there will have been in each case a different interpretation of the three key factors in Fig 2:

A model of learning activity design – learners, learning environment and intended outcomes – and that the practice will illustrate a variety of learning and teaching approaches.

What the case studies all illustrate is that effective practice with e-learning will be based on three key principles:

- Designing effective learning activities involves decisions which appropriately reflect the needs of learners, the nature of the learning environment and the intended learning outcomes
- Effective practice matches learners' needs with tools and resources within the learning environment, the approach taken reflects learners' preferences and abilities, and matches these to the intended outcomes
- Where the e-learning option is used, it extends learning potential and is not used for its own sake



Negotiate learning goals

What is the intended outcome?

Learners are able to agree some or all of their learning goals in negotiation with tutors.

What is established practice?

- Initial assessment of learners' needs and preferred learning styles takes place before courses start
- Learners are matched to the most suitable level and type of course
- A supportive and respectful relationship between learner and practitioner enables the setting of agreed and achievable learning goals

What advantages can e-learning bring?

- Access to differentiated online resources can open up a more extensive and appropriate range of options for learners
- Self-directed learning through online simulations and tutorials can build learners' confidence to take up formal learning opportunities
- Learning matches learners' lifestyles

Extending opportunities for learning

Newcastle United Football Club Learning Centre

Background

Located in St James' Park, the home of Newcastle United Football Club, the NUFC Learning Centre is a purpose-built learning facility equipped to deliver a wide range of learning opportunities. The Centre deals with over 1,000 learners every week, offering courses in partnership with Newcastle College, University of Northumbria and Newcastle University.

The challenge

From the start, Phil McBride, the NUFC Learning Centre Manager, had recognised that the powerful draw of the football club could be harnessed to promote learning. The challenge was to create an informal, relaxed and inclusive atmosphere in which adults, as well as younger learners, could improve their literacy, numeracy and ICT skills with the help of the latest technology.

The e-learning advantage

The Learning Centre provides accredited programmes leading to nationally recognised qualifications in literacy and numeracy, but in a context of learning for fun. Courses are built around a mixture of online in-house and commercially produced materials with a strongly learner-centred approach. There are no formal or set teaching sessions – instead adult learners, with their families, are encouraged to select activities from an extensive range of learning programmes, formal and informal. Although there are no

For learners, the buzz surrounding the Centre is an added attraction. This is often enhanced by football celebrities such as Alan Shearer dropping in for a chat!

taught sessions as such, a team of 40 tutors is available throughout each week to support individuals' learning.

All adult courses are offered on a drop-in basis in three hour slots throughout each week. As part of the process of negotiating and defining learning goals, the Centre Manager personally meets every learner on their initial visit in order to put them at ease and discuss their options. These include interactive tutorials in basic skills, in which learners' actions influence the outcomes, and simulations which allow learners to apply knowledge in the context of real life experiences.

Whilst the adult learners at the Centre are completely free to select their activities, many move on to accredited programmes once they have used the Centre for a substantial period of time. Progression opportunities to further and higher education come through the partnership organisations.

Key points for effective practice

- By providing a range of learning packages, a flexible learning menu is on offer. Self-directed online study in digestible chunks helps everyone to progress at his or her own pace.
- Lack of a clear strategy for the development of e-learning is a real barrier to success according to Phil McBride. From the beginning, the NUFC Learning Centre mapped out a clear vision of how e-learning should develop. A key component was the drive towards creating a paperless environment with all learning online. This was an ambitious aim which was perfected with a schools-based initiative before branching out into adult learning.

Final word

Returning to learn can be daunting for many adults, even in the exciting surroundings that exist at Newcastle United Football Club. Phil McBride believes that success comes from empowering adult learners to set their own learning goals and this is best done in a relaxed, informal setting.



Explore new concepts

What is the intended outcome?

Learners acquire knowledge and can articulate concepts and principles.

What is established practice?

- Expert practitioners present and explain essential course content
- Content is provided in different formats to support a range of learning styles
- Learners can test out their own conceptions in face-to-face sessions with practitioner and peers
- Pace and structure of learning is set by the practitioner to meet institutional requirements

What advantages can e-learning bring?

- Learners can access essential content at a time and place to suit their needs
- Content can be revisited for reinforcement
- Multimedia presentations can enliven factual information and support different learning styles
- Enhanced online presentations allow learners to reflect on concepts at their own pace
- Transmission of information online enables practitioners and learners to use their scheduled contact time more creatively

Any time, any place learning

Fermanagh College

Background

Fermanagh College of Further and Higher Education provides education and training to approximately 12,000 full- and part-time learners from County Fermanagh in Northern Ireland. Based in Enniskillen, it delivers over 750 vocational and non-vocational programmes.

The challenge

Tutors at Fermanagh College published PowerPoint® presentations online through the college's Virtual Learning Environment (VLE), but learners continued to ask for clarification of concepts. This had an impact on both tutor workload and the learning experience. The view was that online presentations, if composed of a list of bullet points, were of limited pedagogical value. One student, when asked what was wrong, summed it up by saying "What's missing here is the teacher." This was the catalyst for change at Fermanagh.

The e-learning advantage

Computing lecturer at Fermanagh College, Hector McLennan, began to investigate how to make better use of presentations for learners who could not attend taught sessions by using Microsoft Producer®. Designed for use with Microsoft PowerPoint®, this software enables users to create, edit, synchronise and publish rich-media presentations to give the look and feel of a live event. The software is used to capture sessions on video with supporting audio files and can be synchronised with PowerPoint® slides to produce dynamic online presentations which can engage learners more effectively.

Taking this approach has allowed learners to bring higher order questioning to the learning process.

This technique has brought with it some distinct advantages. Class lectures and practical sessions are transformed into in-house learning objects. Developing e-learning content directly from classroom practice ensures its relevance to courses. Furthermore, learners can re-visit the content time and again. They can view practical demonstrations with accompanying commentaries and listen to lectures at any time – crucial for those who cannot get to sessions in person, but also valuable reinforcement for all. Enhanced online presentations also allow learners to reflect on concepts and develop learning skills, firstly, by identifying what they are unsure of, they can explore further at their own pace; secondly, by having more thoroughly understood the basic concepts using the online materials, they can then participate more actively in classroom activities.

Key points for effective practice

- This method produces online resources that are directly relevant to the content of each course.
- Whole course sessions can be compiled and produced on CD-ROMs for learners without Internet access.
- Digital equipment is becoming less expensive and easier to use, but care should be taken to achieve the quality learners will expect, by including simple techniques such as the use of backdrops and acoustics.

Final word

Learning to use new software can be time consuming. However, this should be viewed as a learning experience itself, rather than an insurmountable barrier to success. The team ethos at Fermanagh has provided a supporting infrastructure for those involved and has enabled effective progress towards meeting learners' needs.



Evaluate facts and concepts

What is the intended outcome?

Learners can evaluate facts and concepts and apply their knowledge to specific contexts.

What is established practice?

- Under the instruction of the practitioner, learners are provided with opportunities to rank and evaluate sources of information
- Learners are helped to interpret facts, make comparisons and recognise subjectivity in face-to-face group work and practitioner-led sessions
- Learners develop skills in synthesising key findings from resources
- Practitioners provide formative assessment opportunities and feedback

What advantages can e-learning bring?

- Learners' evaluative skills can be developed through activities based on online resources prior to face-to-face sessions
- Asynchronous, peer-to-peer learning through collaborative tools can encourage reflection and evaluation beyond class contact time
- Practitioners are less focused on marking and more able to concentrate their efforts on preparing analytical and evaluative activities
- Learners can develop evaluative skills through online resources while undertaking work-based learning or travel abroad

Developing evaluative skills

Queen Elizabeth Sixth Form College,
Darlington

Background

Queen Elizabeth Sixth Form College (QESFC) in Darlington is a high achieving sixth form college catering for approximately 1700 learners, typically aged between 16 and 19 years. The majority of learners are studying full-time on Advanced Level courses, including A/AS-Levels and vocational A-Levels.

The challenge

One of the courses adopting the use of e-learning at QESFC is the AVCE Advanced Level in Information and Communications Technology (ICT). As with many vocational A-Levels, the learning and teaching is supported through independent work on a series of individual and group assignments. Second year double award learners also undertake a one-week work placement, allowing learners to apply their learning in the workplace and gain confidence and skills that are valued by employers and universities. These factors mean that much of the learning does not take place in the traditional classroom.

The e-learning advantage

Jackie Wilson, Assistant Principal at QESFC, was particularly impressed by the fact that the College's Virtual Learning Environment (ClassFronter) allows the established pedagogical models of learning and teaching at the College to be applied online. Supporting problem-based learning and group collaboration, use of the VLE allowed learners to develop evaluative skills and reinforced their ability to learn independently.

All classrooms and computer laboratories at the College are well-equipped, most with interactive whiteboard facilities and wall displays. A dedicated suite of computer rooms is also available for teaching ICT and Computing. This allows e-learning to be used effectively as part of a traditional taught class, in addition to having the resources and discussion facilities available to learners off-site.

A real advantage of online resources is that learners can concentrate their efforts during the classroom sessions on learning, rather than on note-taking, knowing that course materials will be available to download from the VLE. They can also familiarise themselves with the topics to be used in the next class and prepare questions in advance, whetting their appetite for critical analysis.

For example, in one assignment, learners were asked to critically evaluate a web-based resource and post their observations to a discussion board. This activity was initially structured as a taught session in the computer suite, but then extended outside the timetabled classes with learners contributing to the discussion over several days. The tutor then worked through their contributions in the next class, providing feedback and stimulating further discussion. The ability to reflect and consolidate in the intervening period, as well as contribute to the discussion online, led to learners participating more in the classroom sessions.

Key points for effective practice

- Developing learners' evaluative skills is never easy. Empowering them to critically assess well-chosen resources and share their findings with other learners can be a powerful way of developing their confidence and skills.
- Giving practitioners the freedom to use an online system in a way that complements their own pedagogical approaches has proved to be a motivational factor in encouraging experimentation with online provision. Eric Walker, Cross College ICT Co-ordinator, believes this approach has led to much greater and more enthusiastic use being made of e-learning than if strict policies for use had been laid down.

Final word

Making the decision to implement e-learning throughout the delivery of a course is difficult, but, as Jackie Wilson says, "You have never invested too much to change." Proof of the positive effect of e-learning at QESFC can be seen from a recent Ofsted inspection which highlights the College's approach to promoting effective independent learning. (www.ofsted.gov.uk/reports/manreports/1496.htm)



Build and test theories

What is the intended outcome?

Learners can identify component parts of knowledge, predict outcomes, follow instructions and apply knowledge.

What is established practice?

- Practitioners organise learning into component units and provide opportunities for modelling
- Learners have opportunities to devise trials of their skills or knowledge
- Practitioners give clear feedback on each stage to correct learners' performance

What advantages can e-learning bring?

- Online resources can support different learning styles and provide self-paced learning
- Media-rich resources in different formats can provide more efficient learning when linked to face-to-face sessions in a blended learning programme
- Online quizzes give learners opportunities to self-test prior to summative assessment
- Online assessment tests can provide immediate feedback in a non-judgemental way
- Individual learners can be more easily supported through differentiated resources

Managing your learning

North Trafford College

Background

North Trafford College offers a wide range of provision in specialist vocational areas. The College has developed links with local employers and training providers in the gas industry in particular. The College was the first to receive Centre of Vocational Excellence (CoVE) status in Gas Services Installation and Maintenance, and has built up extensive resources for supporting learning and teaching in industrial and domestic gas engineer training.

The challenge

Learners on the final year advanced Modern Apprenticeship course attend the College on a day-release basis, spending four days a week working for local employers. In order to progress on to full employment, learners must gain accredited Gas Engineer status, where exams test both practical skills and theoretical knowledge. Over recent years, requirements for safety and complexity of modern equipment have increased training requirements for gas engineers. With learners attending college only one day a week, time must be well managed if they are to be successful.

The e-learning advantage

Brian Keating, course leader for Gas Services Installation and Maintenance at North Trafford College, found that most learners on the course were visual learners who favoured a traditional approach to learning, with theoretical concepts and practical competencies being delivered via tutor-led sessions. This meant that all learners had to progress at the same pace during the time available. However, some needed additional time to grasp difficult concepts if they were to complete the course.

All the learners who used the online component reported increased confidence in their application of knowledge and there has been a 25% increase in pass rates in 2004.

Brian began by setting up a course area on the Virtual Learning Environment (VLE) and enrolled learners into groups defined by the module they were studying. He incorporated a mixture of technologies and resources for learning support, including notes and handouts, images (diagrams and photographs and videos) and then embedded National Learning Network materials, practice assessments and discussion boards.

In addition to providing support materials, Brian has explored blending e-learning with taught sessions, to assist learners in managing their own learning. Each week, they work through prepared material online which expands on concepts discussed in the course textbook. Links are also provided to outside web resources. These activities are then made the focus of discussion in the following week's taught session.

Mock examinations are also delivered online. Learners take these in their own time, but with time restrictions to simulate exam conditions. The submissions are automatically marked and if a learner performs poorly, built-in feedback, provided by the tutor, gives an explanation and provides links to relevant learning materials. Further feedback can take place in face-to-face sessions, providing a blended learning solution.

Key points for effective practice

- Being able to reinforce difficult concepts at their own pace, often from home, and to follow these up in class, is a feature highly valued by learners on this vocational course.
- The development of e-learning has enabled tutors to devote more time to individual learners during their time at college, while also addressing the needs of the whole group.
- Learners on the course have the opportunity to offer feedback at the end of each term on what worked well and what did not. Their comments are then used to improve the course for subsequent terms.

Final word

Reliable and efficient networks and systems are key, but often forgotten, components of successful e-learning. A poor network and systems infrastructure can greatly inhibit the benefits of e-learning. Learners will lose patience and confidence if the infrastructure is of a poor quality. The systems support team at North Trafford College have worked hard to ensure the systems support for learners is in place. Brian Keating feels this has been an important component in the success of e-learning at North Trafford College.



e-Learning in practice case studies

Solve problems

What is the intended outcome?

Learners can apply knowledge to solve problems and seek solutions.

What is established practice?

- Practitioners provide opportunities for learners to test their understanding through problems or scenarios based on real life contexts presented in print format
- Learners work in face-to-face groups to discuss solutions and test hypotheses, and then present final solutions for peer and practitioner review

What advantages can e-learning bring?

- Online scenarios using digital images and animation provide engaging activities that stimulate learning and help learners to retain concepts
- Multimedia presentation of lectures combined with online discussion boards can support a variety of learners, widening participation in learning
- Learners unable to participate in face-to-face group activities can still enjoy the benefit of problem-based learning through animation and simulation
- Use of online discussion forums can support learners in arriving at solutions and develop their interpersonal and communication skills
- Online interactive activities or virtual worlds can reflect real life situations in which learners can test their skills and understanding safely

Developing problem-solving skills

University of Central England (UCE)

Background

The University of Central England (UCE) in Birmingham serves a diverse range of over 23,000 students. UCE is committed to widening access, encouraging people from many walks of life to study in ways that suit their circumstances, by offering flexible programmes in association with accredited colleges throughout Greater Birmingham.

The challenge

Many further and higher education institutions in the UK have purchased a commercial Virtual Learning Environment (VLE). However, after an extensive evaluation process in 2003, UCE decided not to follow this route, seeking maximum flexibility in terms of pedagogical approaches. What was vital when choosing a VLE was to respond to learners' needs for a flexible curriculum which maximised their learning potential, in particular through the use of problem-based or experiential learning.

The e-learning advantage

The 'pedagogy first' approach at UCE led to Moodle being chosen as the learning platform in order to develop learning programmes that focused on critical thinking and problem-solving. For example, the Postgraduate Certificate course for staff at UCE revolves around discussion, collaboration and problem-based scenarios. Pilot studies at UCE have demonstrated that Moodle is flexible enough to enable advanced methods of content delivery (such as video lectures), as well as multimedia case studies, and experiential learning via communication tools.

“I’ve read many times that the VLE is a Trojan horse that gets staff to think about how they teach. Once you make the move into e-learning, it definitely makes you think more about your face-to-face teaching.”

Alan Staley, Head of Learning Technology Development Unit, UCE.

Multimedia case studies have been developed using two fictional universities, ‘Crumpton’ and ‘Mullock’, where real life scenarios are simulated in cartoon environments to bring the ‘drier’ elements of content to life. Online communication tools are then used to enable practitioners to discuss the problems raised in the scenarios, to recommend solutions and to link theories with their own practice. The communication tools were used both on and off campus, but were also combined with face-to-face sessions to provide a blended solution.

Other benefits to learners arising from the VLE have been practitioners rethinking how best to use class contact time. Lectures have been converted into video format to be delivered through the VLE. Learners then discuss critical points in after-lecture clinics, both online and face-to-face. This has freed up class time for activities such as group discussion based around clinical practice.



Key points for effective practice

- Technology should not dictate learning solutions. The aim at UCE was to first get the pedagogy right by determining whether an approach would work online before implementing it. For many adult learners, the ‘right pedagogy’ means having access to online problem-solving resources and scenarios backed up by communication tools, and then being able to use these when and where suits them best.
- Experimentation may be necessary to achieve the right blend of face-to-face sessions, online discussion tools and interactive resources.

Final word

The multimedia case studies can make subjects ‘come alive’ and simulate situations that learners may not have had an opportunity to experience for real. In solving the problems, learners become more independent. Research often suggests that this approach can lead to a deeper understanding than a content-driven approach.



Share and discuss

What is the intended outcome?

Learners engage in group discussion to seek information and to analyse and assess their own and others' decisions.

What is established practice?

- Classroom-based discussion is used to reinforce conceptual learning wherever time allows
- Practitioners set guidelines for effective discussion and invite learners to defend and promote a position and maintain discussion as part of course delivery
- Learners collaborate with their peers and understand the different role requirements in a team, and then present summaries for practitioner and peer review

What advantages can e-learning bring?

- The anonymity of online discussion can encourage participation from learners who are not as active in face-to-face discussion
- Online discussion forums can build learning communities which extend beyond class contact time
- Chat sessions in real time can overcome the barrier of distance, providing social as well as task-focused support
- Participation in discussion can be more effectively scheduled as a component in a course
- Online discussions can allow isolated learners to engage in collaborative group activities

Learning through discussion

University of Highlands and Islands,
Perth College

Background

Perth College offers a range of learning opportunities from one-day courses to degrees. As a member of the University of Highlands and Islands (UHI) Millennium Institute, the College also works with partner institutions and a network of learning centres to bring learning to rural communities across Perthshire and Kinross.

The challenge

One such learning programme is the BA in Child and Youth Studies. Learners are attracted to this course from a widely dispersed geographical region. As a result, most learners enrolled on this course elect to study from home. Despite the support infrastructure provided through partner colleges and resident student advisors in regional learning centres, the level of face-to-face contact between learners, their peers and tutors is relatively low. In order to be effective, the provision needs to be supported by well-managed online discussion.

The e-learning advantage

The emphasis on collaborative learning through discussion appears to have had a strong influence on individuals' progress at Perth College. One learner noted that "the pace of discussion rises as our learning increases." Jon Clarke, course leader for Child and Youth Studies, sees the online component of the course not just as a means of engaging learners, but also as an opportunity to maximise learning.

A key benefit of e-learning for learners on this course has been the increased flexibility in the approaches they can take to learning. For example, although learner Irene Sinclair has always sought to gain a degree, the commitment of raising a family has deterred her from enrolling on traditional courses. e-Learning has allowed her study to fit in with her lifestyle.

Lecture notes, papers for critical analysis, learning objects and bespoke materials offered via a Virtual Learning Environment (WebCT), are used as the basis for collaborative discussion online.

Technology can also offer live chat sessions in tutorials to allow learners in isolated locations to talk in real time to tutors and their peers. Social interaction is an essential component of successful learning and is encouraged through an online 'student common room' and 'cyber café'.

A further innovative aspect of this course has been to link collaborative activities with assessment. For each topic, learners are required to make at least three contributions to the discussion each week, one of which must be substantive. With 25% of module marks available being assigned to their contributions, learners take the discussions seriously. This has significantly raised the level of discussion, and feedback indicates that this has had a positive effect on their learning.

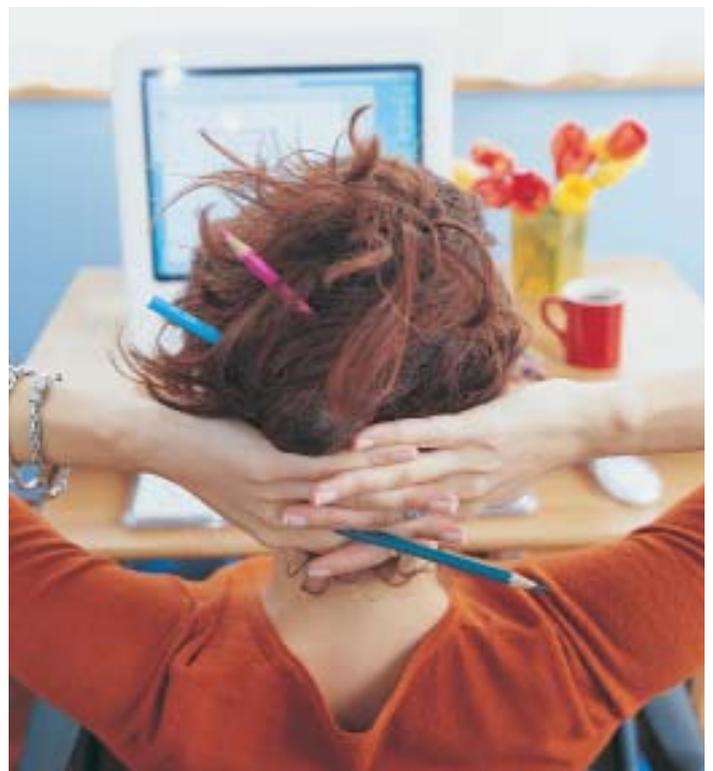
Key points for effective practice

- It is important to select an appropriate communication tool for each teaching and learning activity. On this course, real-time chat has worked well for small group tutorial sessions. However, this would not be appropriate as the primary collaboration tool for learners studying at different times. In this context, discussion boards, being asynchronous, work more effectively. They also allow learners the time to reflect on the discussion before contributing.
- Tutor Colin Docherty believes that, just as in the classroom, the progress of discussions needs to be monitored with interventions where required, for example, by posting appropriate questions to stimulate discussion and amplifying the salient points made by learners. Rather than promise a level of tutor interaction which cannot be sustained, it is better to agree realistic timescales which can be met.

- Tutors also need to establish clear rules for how learners should use discussions – and enforce them. Simple guidelines, such as avoiding writing in capitals (which is perceived as SHOUTING) and acknowledging before posting a differing opinion, can have a surprising impact on the success of online discussions.

Final word

With most course activities occurring online, some learners could be disadvantaged if they lack the necessary ICT skills. To address this, all learners enrolling on the course at Perth College undergo diagnostic assessment in ICT and are provided with the training required to enable participation.



Apply concepts and skills

What is the intended outcome?

Learners apply knowledge and newly acquired skills through active participation.

What is established practice?

- Practitioners demonstrate skills in context and set associated tasks
- Practitioners adapt tasks to the existing competences of learners
- Practitioners build up learners' skills in sequences of smaller steps on which later knowledge and skills depend
- Learners develop skills of their own through repetitive and progressive tasks

What advantages can e-learning bring?

- Learners can be effectively motivated towards skills acquisition that requires repetition when they are participating kinaesthetically, for example, through using an interactive whiteboard and voting system
- Use of images and audio files can support the development of conceptual learning
- All learners can participate in group tasks through the use of wireless technologies (for example, a wireless keyboard and mouse), or electronic voting devices
- Increasing learners' active participation may have an impact on their ability to learn and may improve retention and achievement

Learning through doing

The Working Men's College (WMC)

Background

The Working Men's College (WMC) situated in Camden, North London, is the oldest surviving adult education institution in Europe. Originally associated with the Co-operative Movement, today it is a true community college, where development continues to be rooted in the liberal education tradition of the Workers' Educational Association.

The challenge

Adult and community learning provision at the College is co-ordinated through an outreach initiative. Classes have been established at over 15 locations and serve a wide variety of communities including Chinese, Somali, and Filipino, together with homeless and refugees' associations. Traditionally, however, recruitment and retention among learners from wide-ranging ethnic backgrounds has proved problematic.

The e-learning advantage

Michael McCombe, ICT Programme Manager at WMC, believes that e-learning offers learners more control over their learning, thus improving retention. As part of the audit process for developing e-learning, he looked at a number of initiatives. One of those considered was Classroom Performance System (CPS) which can be used in conjunction with a computer and interactive whiteboard.

Experience shows that multi-lingual ESOL groups benefit most if the full range of visual, auditory and kinaesthetic principles are incorporated into lessons. The system includes a hand-held interactive voting device which links to software installed on the tutor's computer. It allows images, along with related questions and answers, to be projected on to the whiteboard. Each learner has their own hand-held unit

Everyday life scenarios are frequently used on ESOL courses to promote use of language and reinforce understanding. At The Working Men's College, e-learning has been incorporated into lessons to deliver learning through these scenarios in an interactive and engaging way.

at their desk and uses this to answer questions – numbers on the remote control correspond to particular answers. Responses are tallied by computer and feedback is instantly available to the whole class. This enables the tutor to elicit a response from every learner simultaneously, without embarrassing anyone who selects the wrong answer. Learning is fun but also highly productive.

Everyday life scenarios are frequently used on ESOL courses to promote language development. A typical example is a lesson where learners must create a shopping list and decide which shops they need to visit. Individual members of the class write items up on the whiteboard. The shopping list is then saved by the system and can be linked with the next stage of the lesson.

The practitioner then displays images alongside pre-prepared questions, relating them back to the shopping list created earlier. The questions are displayed on the board and the whole class reads through them together, with the aid of word highlighting. The group is then asked to vote for the correct answer. A non-threatening environment is created which encourages all learners to participate.

Key points for effective practice

- Opportunities for feedback should be provided to allow learners to understand where they went wrong. The use of repetition through further activities can, however, be fun with new technologies.
- Simple ideas can be effectively transposed into learning activities. New users should not be afraid to start with simple but effective solutions.

Final word

Since introducing the system, recruitment and attendance on the courses using this technology has improved, while retention has markedly increased. Many learners have expressed a view that their new found skills has given them a sense of freedom, widening horizons for many who felt disenfranchised.



Visualise and present concepts

What is the intended outcome?

Learners present information effectively and can visualise the relationships between concepts.

What is established practice?

- Learners are asked to present their conceptual understanding in written and oral assignments
- Practitioners give feedback on learners' conceptual understanding and on their presentation of information
- Learners improve their skills by practice

What advantages can e-learning bring?

- Use of mind-mapping software can help learners to visualise the relationships between concepts and to structure lines of argument
- Use of assistive software can assist learners with planning and presenting assignments effectively
- Functions within this software can deliver individualised learning support

Presenting your learning

Abingdon and Witney College

Background

Abingdon and Witney College serves learners from across South and West Oxfordshire. The College offers a range of academic and vocational courses to learners whose ages range from 16 to adult returners.

The challenge

Learning difficulties can prevent learners from achieving their potential, affecting retention and achievement. These range from poor language skills, note-taking or comprehension skills, to dyslexia. Some learning difficulties may not have been previously diagnosed, or are deliberately hidden by learners to avoid being stigmatised. It is vital to identify such problems at the outset of a course and to provide appropriate support.

The e-learning advantage

The approach followed at Abingdon and Witney College is that 'e-learning starts with the tools to learn how to learn'. Ellen Lessner, ILT Development Co-ordinator at the College, has ensured that assistive software is as widely available as possible on both student and staff desktops. All learners are introduced to its role and purpose during induction to make its use a standard part of college experience. In this way, assistive software becomes a mainstream application for all learners, whatever their age or level of ability. Two examples of assistive software used at Abingdon and Witney are textHELP Read & Write and Inspiration®.

textHELP Read & Write combats learning or literacy difficulties with facilities such as text read-back, phonetic spell-checking and word prediction. The ability to select text read-back in a variety of voice types, speed and pitch

“Embedding the assistive software as a common learning aid for all has been the key to its success in improving learning.”

Ellen Lessner, ILT Development Co-ordinator, Abingdon and Witney College.

allows each learner to set their own preferences. Using headphones, they can select a document such as a web page, see words highlighted and hear them read back. When applied to their own writing, this can help to correct errors and improve expression.

Inspiration® is an example of mind-mapping software which presents information and ideas graphically. Mapping diagrams are used to visually highlight relationships and dependencies. This assists learners in building up relationships and associations to support an understanding of written structures and mental concepts. The learner can control elements such as colour, font and graphics for themselves, building up a map of what they want to say.

Key points for effective practice

- A key element of the approach at Abingdon and Witney College is to make assistive software available across the College as a common learning aid for all, using the whole site licence available for textHELP Read & Write and purchasing licences for Inspiration® for student desktops.
- This approach is justified by the rapid identification of learning difficulties, which enables learners to be more effectively supported.
- Ensuring the software is embedded and ready for use at the start of the academic year makes assistive software a natural learning aid for all.

Final word

While many institutions have similar software, it is often used as a specialist solution to specific learning problems. At Abingdon and Witney College, imaginative use of the software has demonstrated the potential for a wider application, particularly in identifying individual learning style preferences which can maximise learning potential, whatever the level of ability.



e-Learning in practice case studies

Assessment for learning

What is the intended outcome?

Learners develop their understanding through formative assessment.

What is established practice?

- Practitioners set formative assessment activities for learners at intervals within a course
- Learners are encouraged to understand the strengths and weaknesses in their performance through face-to-face and written feedback
- Learners have opportunities for reinforcement of their factual and conceptual knowledge

What advantages can e-learning bring?

- Online formative assessment activities, for example, multiple-choice questions and quizzes are available to learners any time, anywhere
- Creation of online multiple-choice quizzes by learners for other learners motivates and engages learners
- Online formative assessment reduces practitioners' workload and increases learners' responsibility for their own learning
- Online assessment can offer instant feedback and opportunities to reinforce learning
- Online quizzes testing conceptual understanding increase learners' confidence and therefore participation in face-to-face sessions

Assessing your learning

Oxford Brookes University

Background

Oxford Brookes University offers undergraduate courses in a wide range of subjects for study in full-time, part-time or mixed mode. e-Learning at Oxford Brookes is facilitated through 'Brookes Virtual', which integrates the WebCT Virtual Learning Environment (VLE) with a range of associated technologies.

The challenge

First year undergraduates in law at Oxford Brookes begin their legal studies with a compulsory module to acquire baseline factual knowledge and to develop the skills in legal reasoning that will underpin all subsequent modules.

Paul Catley, Senior Lecturer in the Law Department, has been teaching this module for 10 years, employing traditional teaching and learning techniques in weekly lectures and seminars. However, learner performance was disappointing. Feedback showed that learners often did not understand what was expected of them until they were assessed. Furthermore, the module was taught in the first eight weeks, during which time learners must engage with new content and make adjustments to student life.

The e-learning advantage

Paul Catley at Oxford Brookes recognised the need to build formative assessments into the course. Avoiding paper-based assignments, which would have created a significant increase in tutor workload, he created a series of online assessments delivered through the VLE. The quizzes were accompanied by guidance on the module examination in the form of sample questions, model answers and marking schemes.

A strong correlation was also found between quiz-taking and attendance at seminars. It has become clear that one of the major impacts of online assessment has been to increase engagement with traditional teaching and learning.

By using variations on multiple-choice question types, learner responses could be evaluated by the VLE and appropriate feedback provided immediately. Although by its nature, such feedback is generic and brief, this is compensated for by its immediacy. Indeed, one of the more common issues highlighted through course evaluation is that feedback is often provided too late to make a difference.

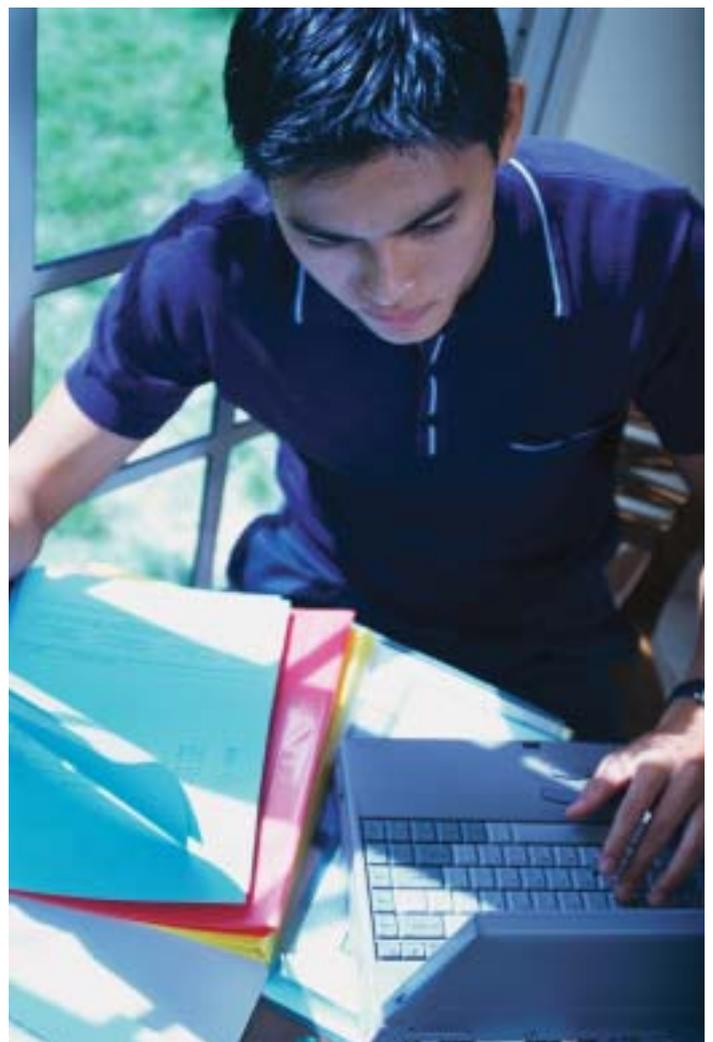
By using the VLE tracking facilities, it was possible to identify learners who had taken the quizzes and compare their performance with that of those who had not. It was found that the 'quiz-takers' performed significantly better in all aspects of the examination, including those aspects where higher order skills (such as evaluation and synthesis) were assessed. As feedback was provided automatically by the VLE, rather than by a lecturer, this may have enabled learners to diagnose and respond more effectively to their own learning needs.

Key points for effective practice

- Not all e-learning needs to involve creating large amounts of content. It can be more effective when the tools available in a VLE are used selectively to generate smaller activities such as self-assessment quizzes.
- VLEs allow online assessments to be created by all practitioners, not just those expert in web technologies. However, a greater challenge lies in designing appropriate and well-constructed assessments.

Final word

While establishing a causal link between e-learning and improved performance is difficult, in the last three years, the failure rate on this module has been almost halved and the number of learners achieving first class degrees has more than doubled.



An integrated approach to designing learning

What is the intended outcome?

Designing a sequence of activities in an online environment to reinforce and extend conceptual learning. This could form part of a course delivered mainly in the classroom, or be a remotely delivered component.

What is established practice?

- Practitioners set a range of tasks and use a variety of tools to cover the content and skills requirements in the area of the curriculum for which they have responsibility
- These are delivered in a sequence of face-to-face sessions, with extension and reinforcement activities completed in learners' own time
- Learners collaborate in face-to-face activities
- Practitioners assess and provide feedback on learners' performance
- Learners' abilities improve over time
- Practitioners work in small teams to develop appropriate tasks which are rarely shared with other teams

What advantages can e-learning bring?

- Use of the new generation of learning design tools, such as the Learning Activity Management System (LAMS), can build short sequences of activities to keep all learners, whatever their preferred learning style, actively engaged and challenged while working in a collaborative environment
- The variety of activities that can be integrated into one sequence keeps learners engaged and develops a full range of skills
- A successful sequence can be shared with other curricular teams with similar objectives
- A similar approach can be taken by using combinations of e-learning tools in conjunction with established practice to create sequences of related learning activities. Mind-mapping software, Microsoft® Word templates, interactive whiteboards, web pages and discussion forums are examples of tools which can support a multi-faceted approach to designing for learning

“Staff appreciate anything that will enable them to focus on learning in the classroom, which is what they came into teaching to do. LAMS is part and parcel of achieving this.”

Vivienne Hughes, Vice Principal, Kemnal Technology College.

Making learning active

Kemnal Technology College

Background

Kemnal Technology College (KTC) is a comprehensive school for boys aged 11-18, with a mixed sixth form. The college teaches all subjects in the National Curriculum, plus a range of vocational qualifications. The College is currently piloting LAMS (Learning Activity Management System) in conjunction with the Specialist Schools Trust and the DfES.

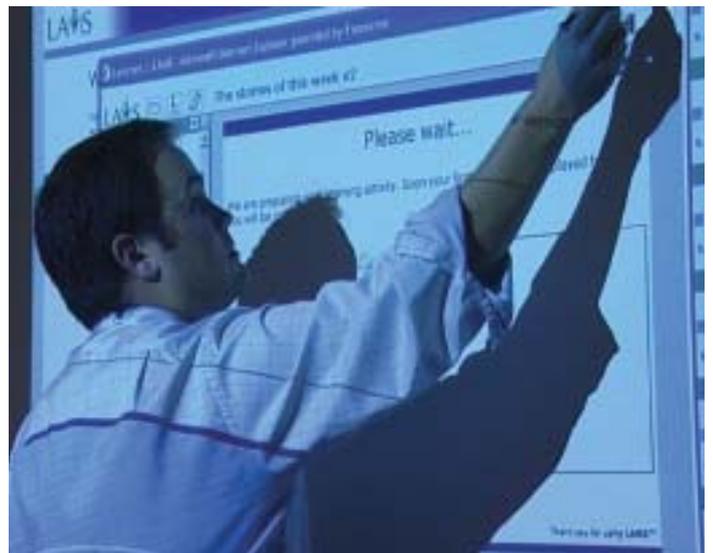
The challenge

A guiding principle for KTC is raising educational standards and learner achievement. The management team at KTC is keen to explore ways of improving teaching and learning without increasing practitioner workload, especially ways of developing learners' cognitive skills.

The e-learning advantage

Most practitioners agree that learners will achieve more once they have a deeper conceptual understanding of a subject. This is where an innovative e-learning application, LAMS (Learning Activity Management System), may offer a solution. Rather than acting as a repository of resources, like most Virtual Learning Environments, LAMS is an authoring environment for practitioners to design and deliver sequences of learning activities. These could include online discussions, polling, sharing of resources for analysis and file submission.

Once a sequence has proved to be effective, it can be repurposed for use in different contexts, creating a repository of proven templates. This efficient re-use of the time spent in creating sequences can help to reduce practitioners' workload.



e-Learning in practice case studies

However, learners have also benefited. Andrew Parry, Head of e-learning at Kemnal Technology College, believes that using online activities improves conceptual understanding and cognitive ability by encouraging learners to reflect on what they are writing, participate in discussion, maintaining their interest and willingness to learn through well-designed sequences of tasks. This integrated approach challenges learners and develops their understanding of a topic. It has proved particularly successful with younger learners at Kemnal.

As with any software, LAMS works best when its functionality is carefully targeted to meet specific needs and objectives. LAMS is an innovative tool for designing learning sequences, the application of which is still under trial. The extent to which it can raise standards is yet to be established, but the trial conducted at Kemnal has produced strong indications of a positive outcome.

Key points for effective practice

- To be successful, any application of e-learning should form part of an overall strategy that is supported by management and takes account of learners' needs and course and session objectives.
- Practitioners can share effective learning sequences by removing or adapting resources on which activities are based.
- Learners of all types benefit from a variety of activities which enable them to develop a full range of skills for successful learning.
- The flexibility of learning activity sequences can support a range of pedagogical approaches.



Final word

By encouraging all learners to take a more active role in lessons and by incorporating a range of pedagogical approaches in one sequence, LAMS could potentially have a long term impact on learner performance.







e-Learning in perspective

Case studies have the capacity to inspire but also to provoke and to challenge. The institutions and practitioners represented here have their own story to tell; their solutions do not fit all contexts, but their stories demonstrate how effective solutions can be found. They do not represent *definitive* statements of what takes place in the learning and teaching process or that the e-learning option chosen will always offer distinct advantages over traditional methods. Instead, they aim to encourage and develop reflection on what is effective practice, by giving an insight into what has proved beneficial for others.

It is worth noting that, in these illustrations, e-learning has been used more frequently in response to learners' needs, as perceived by practitioners and articulated by learners themselves, than in response to institutional or curricular requirements. In other words, the process of exploring effective pedagogies with e-learning has been driven by practitioners and learning technologists. As a result, the impact of e-learning on pedagogy has evolved in a largely unplanned and empirical way, in many instances as a side effect of using an e-learning solution to a particular pedagogical challenge.

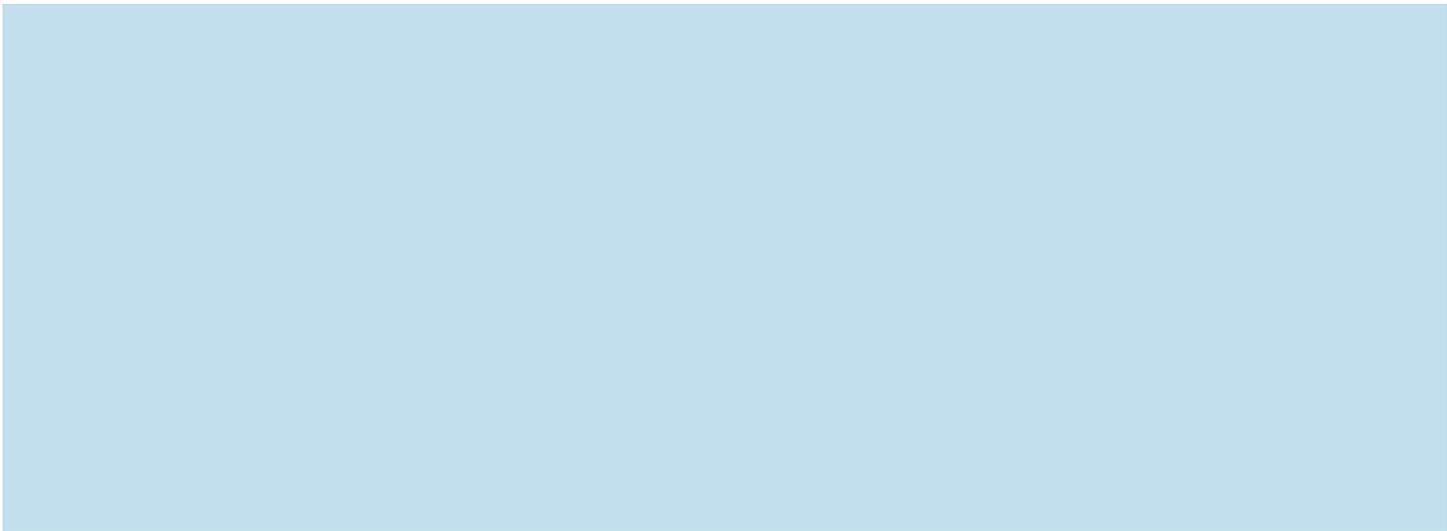
However, the case studies illustrated here all provide testimony of discernible pedagogies emerging which incorporate the use of technology seamlessly and selectively into practice – where it will provide the greatest benefit. This does not claim that e-learning is the stronger option *per se*, but suggests that it can be used to maximum benefit when adopted within a knowledgeable and creative framework which draws on the best of both established and innovative practice.

The table in Fig 4: *Understanding your practice* gives a sample of generic learning activities based on those illustrated in the case studies to provide a response to the question posed at the outset: What can e-learning offer the practitioner? Far from being a comprehensive guide to practice, the table nonetheless offers insights into the ways that e-learning can impact on pedagogy to generate the debate around effective practice that is needed to determine how, why, when and where e-learning is best deployed.

Understanding your practice

Learning Activity	Established practice	Example of e-learning practice	e-Learning advantage
Negotiate learning goals	<p>Discussion with tutor face-to-face identifies learning goals and appropriate options.</p> <p><i>Practitioner consults with and guides learner in identifying the most appropriate options.</i></p>	<p>Online learning can provide an extended, cross-institutional choice of learning options.</p> <p><i>Practitioner facilitates learning pathway chosen by learner.</i></p>	<p>Learners have increasing choice over their pathways of learning. The focus of control moves towards the learner.</p>
Explore new concepts	<p>Face-to-face delivery through lectures and group work is supported by course notes and texts.</p> <p><i>Practitioner as expert dictates pace and structure of course delivery.</i></p>	<p>Interactive resources available outside of taught session can reinforce learning and offer opportunities to check understanding.</p> <p><i>Practitioner as expert scopes the learning domain and provides essential resources.</i></p>	<p>Learners can control the pace and place of learning. This can both support and extend learning, providing opportunities for differentiation. However, remote access to learning content must be available for maximum benefit.</p>
Evaluate facts and concepts	<p>Practitioner-led face-to-face sessions are supported by print-based and audio-visual resources.</p> <p><i>Practitioner as academic advisor creates face-to-face activities and provides resources to develop higher order thinking skills.</i></p>	<p>Discussion forums provide opportunities for peer-to-peer evaluation of online resources outside of classroom sessions.</p> <p><i>Practitioner as facilitator stimulates and mediates discussion generated by learners in reaction to online resources.</i></p>	<p>Every learner engages actively in constructing their own meaning, as peer-to-peer discussion develops learners' evaluative skills beyond classroom sessions.</p>

Learning Activity	Established practice	Example of e-learning practice	e-Learning advantage
Build and test theories	<p>Course content is organised into component units, supported by demonstrations of expert skills. Assessment of learners' knowledge and skills is typically undertaken by the practitioner.</p> <p><i>Practitioner as instructor dictates structure of learning, demonstrates skills and assesses learners' performance.</i></p>	<p>Use of online resources offers opportunities for independent learning; integrated online self-testing quizzes provide immediate feedback and extend learners' conceptual understanding.</p> <p><i>Practitioner as facilitator creates and manages resources for learners. Practitioner and learners share role of assessors of learning.</i></p>	<p>Blended learning offers a mix of face-to-face and online activities to provide a wider variety of learning opportunities. Learners can receive timely feedback from online tests and quizzes to identify gaps in their knowledge and understanding.</p>
Solve problems	<p>Print-based problem-solving scenarios and experiments are used to support face-to-face group work. Solutions are assessed by practitioner.</p> <p><i>Practitioner dictates pace and content and supervises group work.</i></p>	<p>Online multimedia scenarios and simulations provide 'real life' interactive learning opportunities. Solutions can be discussed through asynchronous communication tools.</p> <p><i>Practitioner acts as content developer and facilitator of learning.</i></p>	<p>Learners work collaboratively to identify solutions and test their conceptual understanding through peer-to-peer discussion.</p>



Learning Activity	Established practice	Example of e-learning practice	e-Learning advantage
<p>Share and discuss</p>	<p>Face-to-face group work is instigated by the practitioner but is restricted by factors of time and place.</p> <p><i>Practitioner sets objectives for the discussion, and is more likely to act as monitor and assessor.</i></p>	<p>Online discussion through chat, email and discussion boards can develop communities of learning.</p> <p><i>Practitioner instigates discussion to be taken over by learners and extended beyond class contact time. Practitioner may still act as monitor and assessor.</i></p>	<p>Learners collaborate in discussion, taking increasing ownership of the task, as the discussion extends beyond class contact time. Remote and distance learners are able to participate on an equal footing.</p>
<p>Apply concepts and skills</p>	<p>Classroom or homework tasks require learners to replicate or apply what they have seen demonstrated.</p> <p><i>Practitioner acts as coach or instructor and invites learners to apply what they have seen demonstrated to a new context.</i></p>	<p>Interactive whiteboards and voting systems enable all learners to participate in self-testing activities. Simple interactive activities acquire an element of fun.</p> <p><i>Practitioner facilitates learning by devising interactive learning activities.</i></p>	<p>Effective use of interactive functions in some technologies can engage and motivate learners, reducing disengagement with repetitive tasks. Learners can participate kinaesthetically to reinforce their learning.</p>

Learning Activity	Established practice	Example of e-learning practice	e-Learning advantage
<p>Visualise and present concepts</p>	<p>Practitioner explains concepts and sets assignments to assess learners' understanding.</p> <p><i>Practitioner acts as coach and assessor. Learners improve their presentation by responding to practitioners' feedback.</i></p>	<p>Use of mind-mapping and assistive software enables learners to visualise structures and relate concepts to each other. Grammar and spell checking functions, predictive text and read-back facilities enable all learners to improve the expression and presentation of their ideas and knowledge.</p> <p><i>Practitioner inducts learners in the use of software and identifies learners who require additional one to one support.</i></p>	<p>Learners take more responsibility for the coherence and presentation of their written and oral work by using assistive software to plan, check and present their assignments. Disabled learners can use software functions to gain a level playing field with their peers.</p>
<p>Assessment for learning</p>	<p>Practitioner sets formative assessment activities and provides feedback.</p> <p><i>Practitioner acts as coach and assessor, providing written and oral feedback.</i></p>	<p>Online quizzes and activities enable learners to assess their own learning. Online assessment through a VLE can provide immediate feedback without practitioner intervention.</p> <p><i>Practitioner devises tests and activities and provides supporting resources. Practitioner workload in assessment decreases.</i></p>	<p>Online quizzes increase participation in face-to-face sessions as learners' confidence increases. Learners take an increasingly more active role in assessing their own progress.</p>

Fig 4 Understanding your practice

...this is still an evolving story; this guide represents current views and practice which will develop further as those involved in designing for learning push the boundaries further in their search for ways of improving the quality of learning and teaching.

Conclusion

The aim of this guide has been to give an indication of the benefits that technology can bring to learning and teaching and to take the first step towards defining effective practice with e-learning.

It is clear that the benefits of using technologies in an informed and pedagogically sound way can be felt across all sectors, as practitioners contribute to the body of knowledge and understanding of effective practice with e-learning. It is also suggested that designing for learning must increasingly

incorporate decisions about where and when to integrate elements of e-learning into a programme, course or individual session, wherever the learning environment can support this.

However, this is still an evolving story rather than a completed one; this guide represents current views and practice which will develop further as those involved in designing for learning push the boundaries further in their search for ways of improving the quality of learning and teaching.

A model of effective practice with e-learning

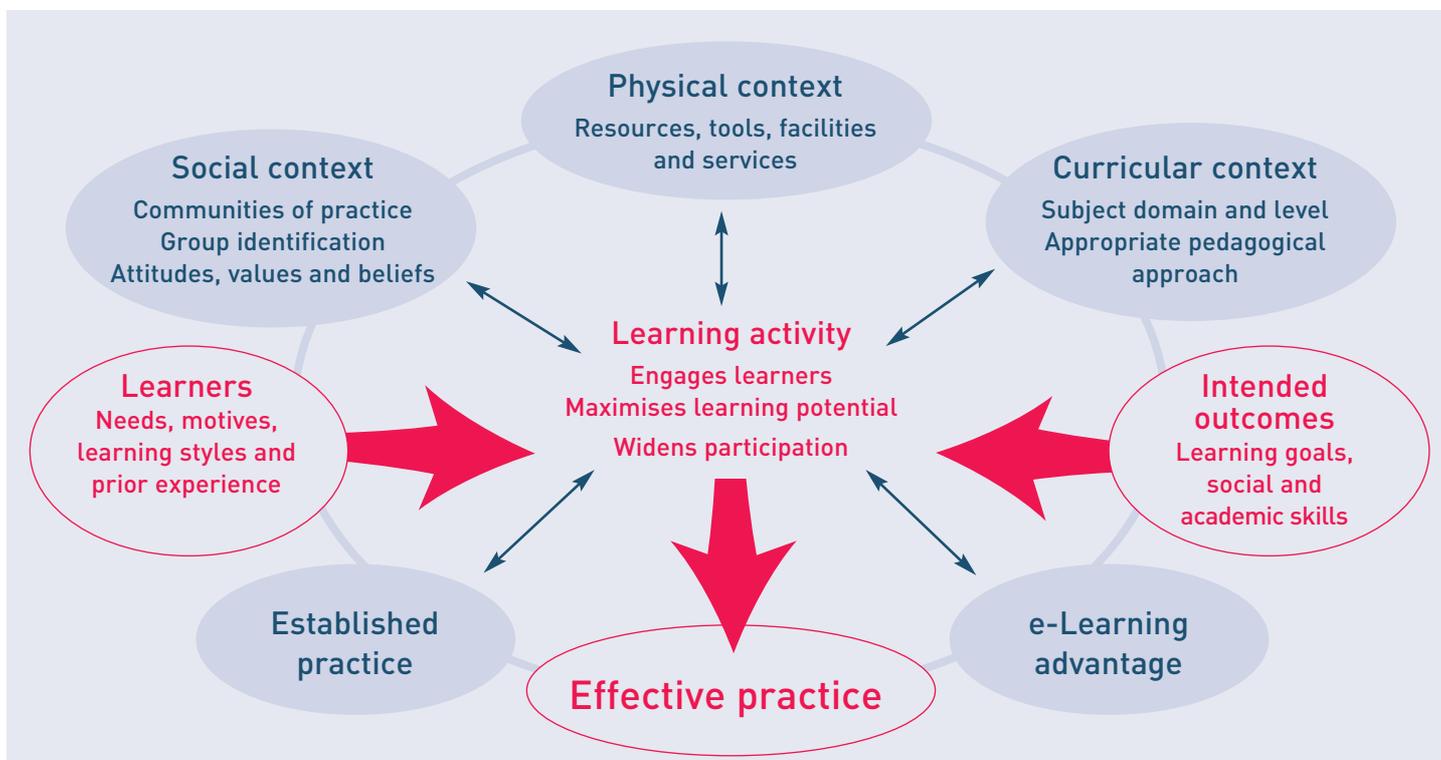


Fig 5 A model of effective practice with e-learning





Next steps

The JISC e-Learning and Pedagogy Effective Practice Planner is reproduced in Fig 6 to enable you to explore how the design of your learning activity can enhance the learning experience for your learners. The planner is designed to help you plan and reflect on a learning activity, taking into account the needs of learners, the learning technologies and resources available, and the learning outcomes.

Templates for the Effective Practice Planner and an additional Effective Practice Evaluator are available on the accompanying CD-ROM for wider dissemination and use within your institution, together with the JISC e-Learning and Pedagogy Case Study Template. The effective practice evaluator offers a more detailed framework for recording and analysing an example of e-learning practice. This is intended for use in a variety of contexts, such as in lesson observations, in continuing professional development and in initial teacher training, wherever practitioners need to reflect critically on their practice. Sharing effective practice with others in the form of case studies is an additional option also available on the CD-ROM. These documents can be adapted for a range of uses.

The e-Learning and Pedagogy strand of the JISC e-Learning Programme will continue to support the development of practitioners' understanding of effective practice with e-learning.

This will be achieved in conjunction with practitioners across the sector, whose knowledge and experience will contribute to exemplar scenarios and case studies building up an evidence base of effective practice. In addition, discussion lists, conferences and workshops developed around the theme of Designing for Learning will open up opportunities for wider participation.

To subscribe to an open mailing list for news and information about the e-Learning and Pedagogy strand, visit www.jiscmail.ac.uk/lists/eped-info.html. For reference to the reviews and desk studies that have underpinned this guide, visit: www.jisc.ac.uk/elearning_pedagogy.html

The JISC e-Learning Programme is ensuring that e-learning in the UK post-16 sector is pedagogically sound, learner-focused and accessible.

Effective practice planner – try designing and evaluating your own learning activity

Issues to consider	Designing a learning activity to incorporate e-learning
1. Learners (their needs, motives for learning, prior experience of learning, social and interpersonal skills, preferred learning styles and ICT competence).	
2. Intended learning outcomes (acquisition of knowledge, academic and social skills, increased motivation and ability to progress).	
3. Learning environment (face-to-face or virtual) – available resources, tools, facilities and services and their match with the learners' needs.	Where does the activity take place?
	What resources are available?
	What technologies are available?
	What features of established practice will be important?



Issues to consider	Designing a learning activity to incorporate e-learning
4. The learning activity (the means by which the practitioner brings about learning and seeks to influence the development of the learners).	Describe the learning activity
5. The approach taken (related to learners' needs, preferred learning styles, the nature of the learning environment and the intended outcomes).	Associative, constructive (individual focus), constructive (social focus), situative Learning styles Inclusion Assessment

Fig 6 Effective practice planner

References and wider reading

The following links offer the reader an opportunity to access further information about the publications, institutions, tools and software mentioned in this guide.

JISC

For further information about the JISC e-Learning Programme www.jisc.ac.uk/elearning

e-Learning and Pedagogy Strand

For further information about the e-Learning and Pedagogy strand www.jisc.ac.uk/elearning_pedagogy.html

JISC evaluation of LAMS

For details on the JISC evaluation of LAMS www.jisc.ac.uk/elp_lams.html

Review of e-Learning Theories, Frameworks and Models, Mayes, T and de Freitas, S.(2004)

www.jisc.ac.uk/elearning_pedagogy.html

Review of e-Learning Models (Developing e-Learning Models for the JISC Community), Beetham, H. (2004)

www.jisc.ac.uk/elearning_pedagogy.html

UK statutory bodies

Department for Education and Skills (England) www.dfes.gov.uk

Learning and Skills Council (England) www.lsc.gov.uk

Higher Education Funding Council (England) www.hefce.ac.uk

Scottish Funding Councils for Further and Higher Education www.sfc.ac.uk

Education and Learning Wales www.elwa.ac.uk

Higher Education Funding Council for Wales www.hefcw.ac.uk

Department for Employment and Learning (Northern Ireland) www.delni.gov.uk

Institutions featured in the case studies

Abingdon and Witney College www.abingdon-witney.ac.uk

Fermanagh College www.fermanaghcoll.ac.uk

Kemnal Technology College www.ktc.bromley.sch.uk

Newcastle United Football Club Learning Centre www.nufclearningcentre.co.uk

North Trafford College www.ntc.ac.uk

Oxford Brookes University www.brookes.ac.uk/virtual

Perth College www.perth.uhi.ac.uk

Queen Elizabeth Sixth Form College, Darlington www.qeliz.ac.uk

The Specialist Schools Trust www.specialistschoolstrust.org.uk

The Working Men's College www.wmcollege.ac.uk

University of Central England www.uce.ac.uk

e-Learning tools featured in the case studies

For details of textHELP Read & Write and Inspiration® used at Abingdon and Witney College www.texthelp.com and www.inspiration.com

For details of ClassFronter used at Queen Elizabeth Sixth Form College www.fronter.com and www.byteachersforteachers.com

For details of Classroom Performance System used at The Working Men's College www.bullet-point.co.uk/cps.htm

For further information about LAMS used at Kemnal Technology College www.lamsinternational.com

For further information about Microsoft Producer® used at Fermanagh College www.microsoft.com/office/powerpoint/producer/prodinfo/default.mspx

For further information about Moodle used at University of Central England www.moodle.org

For further information about the National Learning Network materials used at North Trafford College www.nln.ac.uk/materials

For details of WebCT used at Oxford Brookes University and Perth College www.webct.com

Websites for further research into effective practice with e-learning

Higher Education

e-Learning Centre www.e-learningcentre.co.uk

Embedding Learning Technologies www.elt.ac.uk

Enabling Large-scale Institutional Implementation of C & IT www.elicit.scotcit.ac.uk/modules.htm

Open University www.open.ac.uk

The Learning and Teaching Support Network www.ltsn.ac.uk

The e-Learning Research Centre www.elrc.ac.uk

Further Education

e-Learning Centre www.e-learningcentre.co.uk

FerL <http://ferl.becta.org.uk>

JISC Regional Support Centres www.jisc.ac.uk/rsc

Learning and Skills Development Agency (LSDA) www.lsda.org.uk/programmes/learningtech.asp

National Information and Learning Technologies Association (NILTA) www.nilta.org.uk

National Learning Network (NLN) www.nln.ac.uk

Scottish Further Education Unit www.sfeu.ac.uk

Adult and community learning

The Community Learning Resource www.aclearn.net

learndirect www.learndirect.co.uk

National Institute of Adult Continuing Education (NIACE) www.niace.org.uk

Effective Practice with e-Learning CD-ROM

The accompanying Effective Practice with e-Learning CD-ROM is designed to offer practitioners an alternative pathway through this guide. It highlights the important messages and offers opportunities to download a selection of the key documents and templates for individual use or for wider dissemination within the institution.

Some features are only available as Word document downloads on the CD-ROM to provide opportunities to make wider use of the content. These include an effective practice evaluator (a reflective tool to enable practitioners to analyse and evaluate the learning activities they have designed) and a case study template to encourage sharing of effective practice with other practitioners at different stages on the e-learning journey.

Central to the CD-ROM are the case studies, which explore different ways of using e-learning tools. They can be used as illustrations or examples of particular learning and teaching strategies in different contexts, or as discussion points in a professional development programme. Five of the case studies are available in video format (QuickTime™ and Windows Media files), which offer insights into how practitioners and learners feel they have benefited from new approaches to learning.

This CD-ROM utilises the auto-run feature in Microsoft Windows. To view, simply place the CD-ROM in the CD drive of your computer. The Internet browser will automatically open, allowing the CD to auto-run. Alternatively, click Start > My computer and select the JISC icon. To play the CD-ROM on a Mac operating system, double click on the CD-ROM icon on the desktop and then double click on Run.htm.

The content of the CD-ROM is structured into the following sections:

Foreword	
Starting point	Aims, Definitions and e-Learning in context
Approaches to learning	Introduction and Defining approaches to learning
Designing for learning	Introduction, A model of learning activity design and Building in e-learning
Effective practice planner	Effective practice planner and Effective practice evaluator to download as Word documents
The e-learning advantage	Introduction, Understanding your practice, Case studies and Video case studies.
JISC e-Learning programme	
Case studies	
Video case studies	
Case study template	
Wider reading	
Feedback	
Acknowledgements	
Site map	
Help	



Effective Practice with e-Learning

Further information:

Web: www.jisc.ac.uk

Email: info@jisc.ac.uk

Tel: 0117 954 5083

