

Electronic learning

An RCN guide for nurse educators

RCN Education Forum, April 2003

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Introduction

This guide

Electronic learning: a guide for nurse educators has been written by the Royal College of Nursing (RCN) Education Forum in response to growing interest in new learning technologies, both from individual nursing educators and as a result of education policy initiatives.

The RCN Education Forum's interest in e-learning was first raised following feedback from members after a presentation at the RCN Combined Education Forums Conference in February 1999. Since then, the Forum has gathered members' views and experiences, using an event held at RCN Congress in April 2002 and a workshop later that year. This document draws on the results of this consultation, and outlines the main issues associated with learning technologies. It gives guidance to nursing educators who are taking the first steps toward using this growing field of teaching and learning strategies.

The guidance sets out what we mean by e-learning, the skills that you as nursing educators, and your learners, will need for electronic learning, and the range of learning technology opportunities. We draw on the experience and concerns of our workshop participants to consider the different perspectives of the organisation, the student, and nursing educators; we advise you to explore these perspectives *before* embarking on using learning technologies. We've also included a 'first steps' guide, with check lists and a combined activity planner, to help you identify the resources you need and a strategy for using the technologies, as well as to assess your own learning needs. Resources for learning more about learning technologies are listed at the end.

The context for change

The Dearing Report (1997) outlined a vision of the United Kingdom as a 'learning society', where flexible lifelong learning would be essential to provide learning for an expanding and diverse student population. One means of delivering this flexible approach is through e-learning technologies, which open up the possibility of new ways of teaching and learning.

The NHS education strategy, outlined in *Working Together Learning Together* (DH 2001), emphasises training and development issues. This strategy could drive forward the development of learning technologies to provide accessible e-learning opportunities for nurses' continuing professional development. The RCN Education Forum also welcomes current Government policy to increase the numbers of student nurses, to expand the number of registered nurses in the workforce (by 35,000 by the year 2005 in England).

In order to support the resulting complex nurse education programmes and increased numbers of nursing students, there has been heightened interest in maximising the efficiency and effectiveness of teaching and learning resources. The new learning technologies are seen by many as an answer to some of these issues - but their application and effectiveness require serious consideration. Before e-learning technologies can be used effectively, their purpose, benefits, and the implications for staff training, have to be carefully thought about.

A new science of teaching

Understanding and using these learning technologies requires specific skills training in the technology, design of materials, and computer-based interactions. Mason (1998) speaks of an evolution in higher education methods because of the rush to 'digitise, virtualise and globalise the campus'. But the development of technical skills and the changing fashions in education are only part of the equation - we need to understand the implications of this form of teaching and learning, such as the conceptual shift from teacher-centred to learner-centred approaches (Harasim 1990), where the teacher's role changes from sage to guide. The literature about online learning also brings out the importance of interactivity in the learning process, the need for knowledge management skills and for team working abilities, and the move towards resource-based rather than packaged learning. The move to e-learning is challenging the traditional mode of classroom education and evolving its own science of teaching (Bourne et al 1997).

Speed of adoption

The speed at which we adopt new technology will depend on our level of understanding - from the frightened, technically phobic to the electronically adventurous. Geoffrey Moore's work on the 'technology adoption life cycle' sets out the different perspectives of 'innovators', 'early adopters', 'early majorities' and 'late majorities'. Each group needs different methods to make a new technology appealing to them and enable them to integrate it into their work and lifestyle. Moore (1999) argues that there is a real chasm to cross between early adopters and the early majority of users - and this applies in nursing, where innovation in e-learning has been taking place amongst technology enthusiasts for some years now, without significant spread into the majority of nurse educators.

Support for nurse educators

The Joint Information Systems Committee¹ has been guiding and promoting activities to enhance skills in using information technology (IT). Nurse educators in higher education should have access to support through the investment made by the Teaching and Learning Technologies² programme.

But it is increasingly apparent that nursing educators want specialist support that relates to their particular concerns and interests - hence this guidance.

¹ An independent advisory board that supports further and higher education by providing strategic guidance advice and opportunities to use information and communications technologies to support teaching, learning, research and administration.

² An initiative funded and supported by the Higher Education Funding Council for Education. From 1994 to 2000 £35.7 million given by the Universities Funding Council to provide financial support for teaching and learning by harnessing modern technology (www.hefce.ac.uk/learning).

What is e-learning?

Learning by electronic methods is not a new phenomenon - computer-assisted learning has been around as long as computers themselves. The development of the Internet has given electronic learning a new and different lease of life, with its capacity to transmit information, manage data and provide software packages of sophisticated and animated presentations. Electronic learning is more than just training on a computer: it has the potential to cover both content and the administration of learning (Pollard & Hillary 2001). E-learning can provide not only access to training materials and people via computer-networked and web-based technology, but also student support, communication between students and new ways to manage learning.

Access to information

Websites and intranets can be used to display and share elements of the course. For example:

- online notice boards with information on dates for activities, timetables, assignments and deadlines
- online course or module information on learning activities and learning outcomes
- student intranets (internally operated on-line environments accessible only by the university students or staff) where reading lists, study materials and resources, in-house reading, seminar papers and links to other web sites are stored
- staff intranets where teaching materials can be stored and shared between lecturers (particularly useful to cover sessions during absences and annual leave), including lecture notes in the form of Powerpoint slides, notes and handouts.

Communication

Learning technologies can be used to communicate with and support students, and to encourage students to support each other. Computer-mediated communication can include many different systems including email, electronic conferencing, bulletin boards and chatrooms whether real-time, synchronous or asynchronous. These can be incorporated into specific learning activities or can provide an add-on to the student learning experience.

Examples include:

- 'virtual tutors' list frequently asked questions (FAQs) on, for instance, essay writing techniques
- electronic tutorials, where students send work or questions to tutors. Tutors respond electronically at a pre-arranged time
- student-run notice boards or support networks via email.

Assessment and feedback

Examination and assessment, submission of work, marking, and feedback are all possible in an online-learning environment. Varied assessment methods can include:

- multiple choice questions
- written assignments
- peer assessment, for example of Powerpoint presentations.

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Different universities are pursuing varying levels of accessibility for this type of assessment, where a secure system is a central component. The online environment where interactions between learners and tutors takes place is known as a 'virtual learning environment' (VLE), discussed more fully below in 3. *Using the new technologies*.

2. The skills you need

Basic computing and communication skills

E-learning requires basic computer skills for both educators and students. These can include:

- word processing
- communicating via email
- using Powerpoint software to support presentations (for producing overhead transparencies, handouts, notes and animated on-screen presentations)
- using spread sheets to display data
- phone conferencing or video conferencing
- using desktop publishing packages to produce more sophisticated layouts.

Not all of these skills are necessary, and some are more sophisticated than others, but you should ensure that before you become involved in using e-learning, at least some of these skills are part of your electronic armoury.

Using pre-designed packages

There are several online e-learning environment tools available, such as Blackboard and WebCT, which give you the framework to provide students with course materials, discussion, and assessment over the Internet. You can access online trials for these software packages so that you can learn how they work.

These varied packages can be used as a vehicle to incorporate different aspects of learning technologies, or used for a single purpose, such as lecture notes. They can be used for computer-assisted learning, or to store information on the Internet to give wider access. Some publishers now have links to these packages, so that their textbooks can be accessed as learning materials directly through the commercial learning environment.

Assembling Internet resources

The resources available on the Internet are almost infinite - the choice can be quite bewildering. If you are searching for material on the Internet, it's important to find the right search engine (university libraries can advise), and to evaluate the material you find, discriminating between verifiable sources and unreliable ones.

If you are establishing resources for your students on the Internet or an intranet, it's important that information is updated frequently, and that your resources (especially if you are linking to external sites) are monitored and maintained. Setting up learning via the Internet and walking away is not an option!

All the resources listed below can be incorporated into learning materials, signposted, and their use facilitated by educators, without the need for sophisticated technological or web design skills. You can direct students to specific sources of information as part of your course materials, or they can find background information on their own initiative.

Information available for nursing students and nurses via the Internet includes:

- anatomical diagrams

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- clinical guidelines
- databases of published articles (such as the Cochrane Database)
- professional organisation and university library web pages, which include downloadable documents and powerful search facilities. For example, the RCN website provides online documents and has direct access to the RCN library resources and databases
- Online journals. These are increasingly available, though subscription levels vary between universities. There may be costs involved in downloading articles. Like everything on the Internet, sources must be vetted and evaluated, especially where articles are based on opinions, secondary, or even tertiary sources.

Designing course, module or session materials

Designing your own materials requires a good level of technical support and/or a knowledge of web design - as well as a creative approach to delivering knowledge through another medium. This is not about replicating the classroom on the web - it is about *re-creating* the classroom.

There are many specific techniques here, and research is beginning to emerge on the most effective methods (see for example McDonald 2002). In this guidance we can only cover this expanding topic in a limited way, but we've included information the end of the document to help those who are interested in applying the models we discuss to their current curriculum.

Mason (1998) provides a useful framework of three different models for using online methods in course design, using many of the electronic methods we touched on in *1. What is e-learning*. Mason's three models are:

- content + support model
- wrap around model
- integrated model.

Content + Support model

Course content is delivered in print or as a package online, combined with tutorial support delivered by email or online conferencing. The model uses course/module content materials (for example, seminar notes, handouts, directed reading and Powerpoint presentations) which can be taught not only by content authors but by other teachers.

This is a model for managing teaching to different groups by educators who have not been directly involved in designing the course content. It can involve rudimentary amounts of collaborative activity amongst students, opportunities for peer comment and potentially for online assessments, which can be supported by computer conferencing. However, these online elements tend to be added onto the course, and students of such courses frequently report conflicts between learning the materials and participating in the online activities. Mason suggests that no more than about 20% of the students' study time should be spent online in this model. The model could be suitable for delivering course materials on different sites in complex nursing course provisions, using intranets and/or pre-designed packages or learning environments.

Wrap around model

Tailor-made online resources (such as study guides, activities and discussions) are wrapped around existing materials (textbooks, pre-designed resource, for example, quizzes, CD-ROM resources or tutorials).

This is a '50/50' model, because the online interactions and discussions occupy about half of the students' time, while the pre-determined content occupies the other half. This favours a resource-based approach to learning and gives more freedom and responsibility to the students to interpret the course for themselves. The nurse educator's role is also more extensive than that in the first model, because less of the course is pre-determined and more is created each time the course is delivered, through the online discussions and activities. The model is suitable for changing fields of nursing practice and can incorporate practice and theory learning. It can also be used for problem-based learning through the use of case studies, simulations, audio or video recordings.

Integrated model

Students undertake collaborative learning activities, drawing upon different learning resources. This model is at the opposite end of the spectrum from the first: the majority of the learning takes place online, through discussion, accessing and processing information and carrying out tasks. The contents are intended to be fluid and dynamic as they are largely determined by individual and/or group activity.

In a sense, the integrated model dissolves the distinction between content and support, and is dependent on the creation of a learning community. It is highly suitable for autonomous learning and is underpinned by the theoretical principles of adult learning set out by Knowles (1980), which are that adults:

- need to know why they need to learn something
- need to learn experientially
- approach learning as problem-solving
- learn best when the topic is of immediate value.

As the average age of pre-registration nursing students is now 25, this adult learning model could be successfully applied to current pre-registration courses. It is also highly applicable for work-based learning opportunities.

Using this model in practice means that learning needs to focus more on the process and less on content by using case studies, role plays and simulations, plus self-evaluation and critical reflection methods. Crucially, the role of nursing educators shifts to become one of facilitator rather than lecturer.

Examples of these styles of teaching strategies are not unfamiliar to most of us: they are those that explain why specific things are being taught, involve task-oriented activities instead of memorisation, those that take into account different learning backgrounds and allow learners to discover things for themselves. The key role for nursing educators is to provide guidance and help.

3. Using the new technologies in nursing education

E-learning environments could provide the medium to deliver entire nursing education courses or modules online. There is also the potential for these different modes of learning technologies to be incorporated into existing learning materials. To help you decide the extent to which learning technologies should be used in your organisation, we have set out a 'First steps' approach in the last section of this guidance. This approach involves clarifying the intentions, purpose, and benefits to be achieved by using different learning technologies.

Managed learning environments

A whole range of university/college information systems and processes can contribute directly or indirectly to learning, including 'virtual learning environments' supported by pre-designed packages such as Blackboard or Web CT (see Lee and Thomson 1999). The overall management of this learning is termed a 'managed learning environment' (MLE) (JISC 2001). The MLE incorporates student records systems, computer assessment systems, and links to quality processes, business and finance systems, as well as potential links to affiliated colleges, universities, and organisations.

Nursing courses are complex and diverse; the structure of their delivery involves concordance from within the education provider organisation, as well as collaboration with clinical placement providers outside. Using a managed learning environment to support nursing education courses could provide technical answers - but nursing educators must engage with and contribute to the planning and implementation of these systems to ensure nursing courses are properly designed and integrated into the MLE.

Active engagement

As new learning technologies and methods are evaluated, key principles are emerging. One strong feature is that e-learning requires active engagement. Students' engagement with the e-learning materials should be active not passive. Students cannot be seen as merely recipients of information, any more than they would in a classroom where they are expected to engage in the learning process. Similarly, tutor involvement is active in facilitating learning, working towards a student-centred approach.

Another key principle is that e-learning can engender more collaborative learning between students, and more self-directed learning skills. Learning technologies are also the part of the future of communication and their power will be linking people at a distance. If active collaboration is an attribute to be encouraged in nursing students, preparing them for their work in teams and with peers, then e-learning methods have a valuable role to play.

4. Differing perspectives

At the RCN Education Forum's 2002 Congress event and workshop on e-learning, contributors used three levels of analysis to draw together the issues and concerns that any implementation plan for e-learning should consider:

- organisational
- student
- nursing educator.

Each of these three has a different perspective, and we outline briefly here the key issues for each level (with inevitable overlaps here and there), which you and your colleagues will need to explore before introducing e-learning or deciding on how you will use it.

Organisational issues

These include, but are not limited to:

- what is the teaching and learning philosophy of the organisation, its purpose and objectives? Is this compatible with e-learning?
- how does e-learning fit in with management programmes or strategic and financial plans?
- what type of e-learning would be suitable? What support structures would be available, and what skills would the organisation's staff need to develop?
- from a business perspective, should consideration be given to competitive edge? How can this be developed and supported? You will need to consider as part of this how existing and potential strategic alliances and partnerships with other organisations could be developed - for example with NHS trusts
- is there support to undertake research to fit into a growing body of knowledge on learning technologies?

Student issues

Our RCN workshop groups expressed considerable concern about the potential pitfalls as well as gains from e-learning for students. What would students see as the advantages and disadvantages of e-learning for them?

- Equality of access - will this be compromised by the technical skills students will need to access e-learning?
- Would practical costs in terms of time and finances impact on students' situations?
- Would managers' support for part time students be compromised by e-learning - or conversely improved if e-learning were seen as inexpensive and not encroaching on workplace time?
- Would e-learning bring social costs, since interaction could be reduced by this 'lonely learning'? How could links with other students be established and maintained?
- Will this method of teaching and learning meet the standards students expect?

Nursing educator issues

The 'First steps' check list and action plan at the end of this guidance covers many of these issues. Looking at introducing e-learning from an educators' perspective, our RCN workshops raised again the fundamental question of why it should be used as an alternative to conventional methods. Is the rationale for its introduction based upon sound teaching and learning principles, or a desire to keep up with trends, or driven by resourcing costs?

- How much of a course is e-learning already - and how much should therefore be designed to include e-learning as adjunctive or complementary to existing methods. Workshops felt a blend of face-to-face contact and other learning technologies was a way forward for many nursing courses
- Have you and your nurse educator colleagues the personal resources to manage this change? You will need to analyse honestly your own skills and learning needs, and meet the change as an opportunity and a challenge
- What are the existing resources at your place of work to support the introduction of e-learning? Is there a technical or informatics officer, or a colleague who has begun to develop some skills in e-learning, who would be willing to share or coach a novice colleague?
- What will the cost in your time be? Would it be any different to the time already spent on preparing and responding to students?
- What will be the impact on future teaching and learning styles, and teachers' personal philosophies underpinning teaching and learning?
- How will the student group dynamic be affected? How will you avoid 'lonely learners', and will the dynamic and interactive nature of classroom learning be damaged (see Stiles and Osmond 2002)?
- How will you assess work? The issue of achieving differentiated deep and surface-learning is well documented and is a challenge for e-learning, particularly when assessing whether learning has taken place. Assessment processes can be incorporated into e-learning, but they need to be designed as conscientiously as any assessment method and can be creatively applied (Holland and Arrowsmith 2000).
- How will you evaluate these learning methods? Will there be opportunities for research (Russell 1999)?

5. Evaluating e-learning

As well as implementing e-learning, we need to consider our role in evaluating its effectiveness and applicability. Even if nurse educators do not make inroads into e-learning provision themselves, at the very least they will increasingly need to assess e-learning provided by others, and to direct students towards good practice. This role of evaluator is also a learning opportunity for nurse educators and a potential development of their existing roles.

There are several initiatives in which nursing educators will be involved as potential evaluators. They may be invited to critically review materials as independent reviewers, or asked to incorporate pre-designed packages into existing courses and will need to evaluate the suitability of these packages. Two examples are the National Health Service University (NHSU) and eUniversities.

- NHSU courses will be delivered through a blend of face-to-face, distance and electronic learning. The NHSU is a new kind of corporate university, focusing solely on training and education for the NHS. Due to launch in autumn of 2003, it is being set up by the Government to support the modernisation of the health service
- UK eUniversities Worldwide is the operating company established in October 2001 to market and support the online provision of high quality, flexible and accessible higher education and professional development courses from UK universities to students globally, Using web-based learning. It is a collaborative project by the UK higher education funding bodies, designed to give UK higher education the capacity to compete globally with the major virtual and corporate universities being developed in the United States and elsewhere (web addresses in *Resources* below).

Summary

The issues raised in this guidance will serve as useful prompts for discussion on developing and implementing e-learning. Potential implementers are advised to seek out the latest information and research on e-learning (see *Resources* below).

The role of nursing educators may not be exclusively about incorporating e-learning into education, but may include a broader remit of evaluating forms of e-learning that nurses may wish to incorporate into existing education programmes as APL (Assessment of Prior Learning), or use to develop skills and knowledge. The 'First steps' checklist that follows will focus ideas on an action plan for implementing e-learning.

The overall theme of this guidance can be summarised by the three rules for using technology proposed by Lee (1999).

- 1) Technology should not be used to replace teachers or teaching. It should be used as a supplement to teaching, or as a replacement for the absence of teaching, i.e. by making material available if a course is not currently being run, or to remote/life-long learners who do not enjoy the privileges of being linked to an education institution.
- 2) Technology should only be used where a noticeable gain to teaching quality is evident. Bearing in mind the considerable costs (both in terms of finances and time), it is not enough to simply employ IT on the basis that it will not do any harm.
- 3) Technology should be applied in appropriate stages. It is not essential to use every bit of new technology at your disposal. Sometimes the most noticeable effects can be derived from very easy-to-use methods, most noticeably in the area of computer-mediated communication.

First steps: A check list and action plan for implementing e-learning

This check list is a synthesis of many of the issues set out in the RCN document *Electronic learning: guidance for nurse educators*. It is an adaptation of the British Association for Open Learning's (BAOL) check list for first steps in e-learning (2001)³. By following this step-by-step guide, you will be able to develop an action plan to get you started with e-learning; and in the process identify the help you need from within and outside your organisation.

Begin with a statement about your purpose or goal for introducing e-learning:

Step 1: Be clear about the benefits

The benefits of e-learning are many and varied - what do *you* wish to gain?

- Consistent delivery of programmes?
- Flexibility to update materials and deal with changing interests?
- Opportunities for learner involvement?
- Low delivery costs for large numbers of students?
- Opportunities for monitoring and evaluation of outcomes?
- Increased access for all that need it?

Actions required:

³ The original 10 steps guide is based on an original guide which is copyright 1999 British Association for Open Learning. BAOL is a registered charity and is the UK's largest member association in the field of open and distance learning, including e-learning.

Step 2: Think ahead: identify what you want to achieve

You might be motivated to embrace e-learning just to show that you are up to date. However, such short-term considerations rarely lead to real benefits.

What outcomes will show that you've achieved success with e-learning?

- Delivery of a complete course, module or session?
- Students reporting high satisfaction?
- Proven cost effectiveness?
- Wider access and participation in learning?
- A shift in attitudes towards learning e.g. from tutor-centred to autonomous learner?
- Assessment and development of your own familiarity with learning technologies

Actions required:

Step 3: Whose support do you need?

Think of those who can influence the success of your initiative. You will need their support - so secure it at an early stage. Which groups are important to you?

- Students?
- Organisational management?
- Colleagues,
- NHS trusts, professional organisations?
- Your IT department?
- Your administrative support?
- The Education Faculty or Department?

Actions required:

Step 4: What's your strategy?

It's easy to plough ahead on a wave of enthusiasm! You also need to plan. What are the strategic issues you need to consider at this stage?

- Do you need a clear *business* case for introducing e-learning?
- Is e-learning aligned to your organisation's strategy?
- Is your personal approach flexible enough to cope with change?
- How does it relate to existing learning programmes?
- How will you manage this initiative?
- How will colleagues react and will they support you?
- Who will you collaborate with?

Actions required:

Step 5: What type of delivery solution is right for you?

There are many issues to address. Examine your rationale for each.

- What pre-designed materials are already available and what time do you have to evaluate them?
- Do you want to integrate e-learning into existing learning materials, and in what form(s)?
- Will you be designing new, whole courses/modules/specific sessions?
- Have you reviewed the learning outcomes to ensure they are compatible with e-learning?
- Will you use generic materials or bespoke, bought in or developed in-house?
- What mix or blend of delivery will students prefer?
- Do you have the skills available for this?
- Who will create the content?
- Who will 'take on' the instructional design?
- Which external providers might you approach?
- What IT support does your organisation already provide?

Actions required:

Step 6: What about your organisation as a place to learn new teaching skills?

Some organisations have a history of positive employee development. To others this will be a major change. How will your organisation match up?

- Is there an e-learning culture in your organisation?
- Have new flexible ways of learning been tried in the past?
- Are there examples of best practice for you to observe?
- Is there a network, formal or informal, of interested persons?
- Do you need to look outside your organisation for support?
- Is support available to learn more about e-learning?
- Are there dedicated learning centres for all to access?
- Has disability awareness been built into any implementation plan?
- Are times set aside for employees to learn new skills and teaching techniques?
- Are managers likely to encourage take up of e-learning?
- Will managers act as role models?

Actions required:

Step 7: How might others view an e-learning initiative?

There are other stakeholders whose support you have already identified as a key to success. What are their perceptions?

- How do students view an e-learning initiative?
- Do different student groups vary in their preference for e learning?
- How are new ways of learning viewed by:
 - mentors?
 - NHS workforce confederations?
- Do local NHS managers see an urgent need for new learning opportunities?
- Does your organisation see an urgent need for new learning opportunities?
- Is there a willingness to innovate and experiment?

Actions required:

Step 8: What about the ICT issues?

E-learning will require you to address a range of information communication technology (ICT) technical issues. Getting this right or wrong will either enhance or inhibit your chances of success.

- Do all students and colleagues have access to a PC?
- Is training required to make e-learning work for them?
- Is your IT Manager aware of the issues?
- Is your current network provision suitable?
- What IT standards are you working to?
- Will e-learning require new investment in the network?
- Will you need to appraise your own skills?
- What quality assurance guidelines will you need to adhere to (e.g. QAA)

Actions required:

Step 9: Adding the human touch

Learning through a PC can be hugely enjoyable for many – for others it doesn't match so well with their style. Adding the human touch can bring an added dimension and interaction to the online experience and benefits all.

- Can students' individual learning styles be assessed?
- Are existing tutors suitable for an online support role?
- Can learners be organised into groups to collaborate on learning?
- Will face-to-face workshops integrate with e-learning?
- Can online tutor support be provided for each student?
- Can supported off-line activities form part of the approach?
- What new relationships between students, materials, and student support can be developed?
- How will information and contact details be given to students?
- Will you be integrating audio (music, voices) or video materials?

Actions required:

Step 10: Now you know what you want - start!

- Specify which model you will use
- Be clear about your strategy
- Keep others on your side
- Manage the development phase
- Conduct a pilot and involve students
- Evaluate the results
- Publicise success

Actions required:

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