A pilot study to assess the case for e-learning in the NHS

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This paper considers the case for e-learning in the NHS. It highlights the findings of a three-month research project into the requirements for e-learners within clinical teams and the access to technology needed to support e-learners. The research was based on a three-month e-learning pilot using e-learning materials from three providers. Learners were recruited for the study by electronic means and by word of mouth. A questionnaire was administered before they began any learning, at eight weeks and then again at three months. The questionnaires were administered electronically, with a response rate of over 78%. Qualitative data were gathered from a discussion group and via e-mail responses to follow-ups from the questionnaire.

INTRODUCTION

The NHS, one of the largest employers in Europe, is currently embracing a modernising agenda for its workforce, adopting a framework of lifelong learning and cultural reform in order to adapt, change, improve the patient experience and solve the challenges that result from new ways of working. E-learning may be one of the most accessible and direct routes into addressing such a change for large numbers of staff.

Working Together – Learning Together (DoH, 2001) outlines the role which e-learning should play within the NHS University. For the wider organisation, the document states that, by December 2002, all NHS employer organisations should have in place a local five-year e-learning strategy and capability.

In 2001, the National Nursing Leadership Programme initiated the national e-learning project, with the aim of ascertaining the readiness of both clinical staff and organisations within the NHS for e-learning. This paper outlines the aims and objectives of the project, discusses how the aims were achieved, and suggests criteria for the future development of e-learning in the light of what the findings revealed.

E-learning was by defined by Hall (2001) as 'Instruction that is delivered through the internet or an intranet, or through multimedia platforms such as CD-Roms'. E-learning can build on the success of distant learning programmes with the added advantage of:
- Ease of monitoring
- Access to instant updates and research
- Reduced costs
- The creation of an interactive and experiential learning environment.

In addition, e-learning students are able to choose when and where they wish to learn, what courses they wish to access and can pace their learning to suit them. Yet another advantage is that e-learning can be delivered in bite size chunks at exactly the right time so that learning can take place when required rather than when a course becomes available.

The materials available today for e-learning are much more interactive than those in previous years, making use of simulated environments and situations, a method that can be compared to that used for pilot training by the use of flight simulators. Interactive programmes allow learners to work through problem-solving simulations so that they are able to see the consequences of the decisions they take or the choices they make. Learners can therefore make strategic decisions and, by learning from mistakes, can make fast progress without adversely affecting an organisation or its patients.

According to a poll of RCN members this year, 58% of nurses now have access to the internet at work, compared to 5% in 2000; and 85% have access at home (www.internurse.com/news/profnews/june13.htm). Coupled with the demand from nurses and allied health professionals for leadership development, e-learning may provide a key to providing individualised leadership development for many thousands of professionals at a fraction of the cost of traditional methods of training and without the need for extra staffing that classroom work demands.

RESEARCH AIMS AND OBJECTIVES

The pilot study outlined in this paper set out to identify how registered nurses and members of the allied professions coped with e-learning material related to leadership, management and personal development that they volunteered to use in response to an invitation from researchers from the National Nursing Leadership Programme. The effectiveness of the content of the learning material was analysed, and comparison of the different materials was made, measuring the impact of each on the learners' leadership development. Building on the published literature and existing research on e-learning, our study aimed to:

1. Assess the demand for leadership development via e-learning in the NHS.
2. Test how well nurses and allied health professionals cope with e-learning leadership material.
3. Find out how nurses and allied health professionals access e-learning material.
4. Find out how effective the content is for participants' purposes.
5. Compare different approaches to e-learning.
6. Measure the impact of e-learning on individual leadership development.

THE RESEARCH PILOT

Three e-learning providers were commissioned for the three-month research pilot: Academee, Xebec McGraw-Hill and Skillsoft. These were chosen because they were 'off-the-shelf' e-learning materials on the three topics we wished to cover (leadership, management and personal development), and because time and financial constraints would not support the commissioning of purpose-built e-learning material.

Four hundred places were allocated on a first-come first-served basis, and each volunteer was required to complete a registration questionnaire. Three hundred and thirteen volunteers successfully completed the registration process (78.3% of total sample) and these were allocated to the research programme as follows:

- The 91 registrants who had ISDN or faster internet access were identified and 18 of these were randomly chosen to be allocated to Academee, with the remaining 73 randomly allocated between Xebec McGraw-Hill and Skillsoft
- The remaining 295 registrants were randomly allocated between Xebec McGraw-Hill and Skillsoft.

The research data came from a number of sources:
- The 144-item quantitative questionnaire that volunteers were required to complete as part of the registration process
- The 392 technical queries from the volunteers
- A qualitative 14-question questionnaire that was administered by e-mail (completed by 127 people — 31.3% of the total sample).

The technical queries and second questionnaire were analysed using a coding frame to identify common themes.

Of the 313 people who successfully registered, 87% were women, with an average age of 41 and 10% were over 50; 84% were NHS employees and 91% were from the UK. Overseas volunteers were made up as follows: Saudi Arabia (8), Australia (2), Canada (1), Denmark (1), New Zealand (1), USA (1) and Other (3). Overall, 86% of the volunteers were white and 14% were of other ethnic origin. Seventy one per cent of the sample were nurses, with the remainder being made up of health visitors (10%), other groups of nurses (6%), midwives (5%), Other (4%), allied health professionals (3%), general managers (2%). People identified themselves as director (2%), senior manager (13%), manager (21%), senior clinician (21%), experienced clinician (42%), and recently qualified clinician (1%).

The volunteers were grouped into two categories: clinical practice (64%) and management (16%). The average years qualified for all volunteers was 16. One hundred and seventy volunteers (54.3%) started the courses.

DETAILS OF THE PROJECT IN RELATION TO THE SIX AIMS

1. The demand for leadership development via e-learning in the NHS
It was expected that there would be about 100 applications in response to our request for volunteers and we were surprised that the numbers were much greater. In response to this, the number of volunteers for the study was extended to 400, and this number was reached quickly. When the maximum number was reached, there was continued demand, and volunteers were placed on a waiting list.

The volunteers were asked how they found out about the research, as we had placed information in only five areas:
- On our website at www.nursing leadership.co.uk
- On our electronic newsletter which is sent out monthly to 428 subscribers
On the following internet newsgroups:
- communities.msn.co.uk/Uknurses
- alt.nurse
- sci.med.nursing.

The replies revealed that 72% had found out about the study electronically and that 33% had found out by word of mouth. We also asked them what had motivated them to reply to our request for volunteers (Fig 1).

Fig 1. Motivations of the volunteers to reply to the request to take part in the study				
● Fitted in with personal development plan	40%	● To be a better clinician	5%
● Personal interest	28%	● Encouraged by their manager	2%
● Career development	23%	● Other reasons	3%

A commonly held assumption is that healthcare staff want to undertake leadership development for career progression or for increased pay, but this applied to less than a quarter of the sample. The majority were motivated by personal reasons, either as part of a formal personal development plan, or out of general personal interest.

The volunteers were also asked what skills they wanted to develop. Their answers were analysed to indicate whether they identified themselves as clinicians or managers. The skills they felt were vital to their personal development are shown in Table 1.

One of the particularly interesting aspects of the replies is that clinical staff are much more interested in leadership and personal development (for example, personal effectiveness, conflict resolution), than more traditional management skills (for example, personnel management and finance).

Table 1. Skills identified as vital to personal development

What skills are vital for you?	All %	Clinicians %	Managers %
Leadership skills	84	84	84
Personal effectiveness	73	75	71
Conflict resolution	67	70	62
Championing and embracing change	67	67	68
Problem-solving	63	64	60
Effective communication	62	64	60
Project management	52	51	53
Political astuteness	45	41	54
Personnel management	43	44	41
Presentation skills	42	43	41
Clinical knowledge	39	47	22
Service management	34	28	44
Financial and budgeting	33	28	44

Before taking part in the e-learning course, the volunteers were asked in what areas they expected the course to have the most impact on them. Table 2 shows their responses, and again the answers were analysed as to whether the nurses identified themselves as clinicians or managers.

It was interesting to find out from the analysis that clinicians more than managers think that e-learning courses are much more likely to improve patient care, and that, overall, staff do not anticipate that the courses have much impact on their career development or on their pay. These replies reinforce the findings indicated in Fig 1 that the main motivating factor is personal growth and development rather than career growth and development.

A question about participants' personal development revealed that 66% of staff had a personal development plan (although managers were much more likely to have one (75%) than clinicians (62%)). Answers to a question on what were important or essential in an e-learning programme are shown in Table 3.

We were particularly interested to know what factors stopped staff accessing professional development. The main barriers are shown in Table 4 (again analysed to find replies by clinicians and managers).

There are a number of interesting aspects to the responses. First, that work-life balance, lack of money and lack of time are clearly the largest barriers to staff accessing professional development courses, and that managers seem to have fewer problems with funding than clinicians. Second, very few staff lack an interest in professional development, or are affected by geographical isolation, shift problems and transport. These replies suggest that for a professional development programme to be successful, it must:
● Fit around people's existing work-life balance
● Not demand a large time commitment
● Be cheap or free.

Table 2. Expectations of students of the e-learning course

Areas where most impact was expected	All %	Clinicians %	Managers %
Personal development	88	90	84
Better understanding of management/leadership	82	84	77
Understanding of own strengths/ weaknesses	76	76	77
Increased confidence	66	69	61
Increased job satisfaction	54	56	49
Confidence to change environment	54	53	56
Contacts for networking	47	45	53
Knowledge to improve patient care	42	48	30
Greater chances of promotion	26	28	23
Increased possibility of higher pay	6	6	6

Table 3. The important characteristics of an e-learning course

Important or essential characteristics	All %	Clinicians %	Managers %
Courses free	67	73	64
Accredited to external organisation	67	71	68
Credit towards PREP/Continuing professional development	58	63	55
Credit towards Master's degree	55	56	61
Credit towards Bachelor's degree	52	55	52

We also asked the participants about their personal motivation and the level of support they received from their organisation if they wished to undertake a personal development course. The responses revealed that only 56% of staff had told their manager that they were taking a course. Of that percentage, 98% said that their manager was supportive (although only 89% of clinicians said this).

The issue of staff not telling their managers is quite an interesting one, given that leadership development is part of all NHS organisations' priorities. One nurse replied that she did not tell her manager because managers associated leadership development with ambition, and she (the nurse) did not want her manager thinking (wrongly) that she was after a promotion.

2. How well nurses and allied health professionals cope with e-learning leadership material

In response to a question asking the participants how easy they found the initial registration process, 38% found it easy; 37% found it 'OK', and 19% found it difficult or very difficult. These replies were particularly reassuring,

Table 4. Barriers to accessing professional development courses

	All	Clinicians	Managers
	%	%	%
Balancing many other responsibilities (families, careers, social commitments	39	42	36
Lack of time	36	37	40
Lack of money	34	39	26
Staff shortages	22	28	12
Scheduling problems	12	13	10
Lack of child care	9	11	6
Insufficient confidence	9	10	6
Shift patterns	8	12	1
Lack of support from manager	8	11	3
Geographical isolation	7	7	8
Transportation problems	4	3	5
Having to learn if told by boss, but not interested or ready	0	1	0

as the registration process took 25 minutes and involved completing a 170-item questionnaire.

We also looked at the participants' overall technical competency. This was assessed by asking the following five questions about their use of the internet: When accessing the internet, can you do the following:

1. Enter the address of a web page?
2. Move backwards and forwards between pages?
3. Search for information?
4. Copy pictures into a document?
5. Save a web page to a PC or disk?

Their replies showed that although their internet competency was fairly high, their weaker areas were searching for information, copying pictures into a document and saving a web page onto a PC or disk.

The participants were asked five similar questions about their technical competence with e-mail:
When using email, can you do the following:

● Create and send a message?
● Open a message?
● Attach a document to a message?
● Reply to messages?
● Copy text from a document into a message window?

Their replies demonstrated that although e-mail competence was generally high, weak areas were copying text from a document into a message window.

We examined whether younger volunteers had higher technical competence than those who were older. The figures showed that while those under 30 had the highest overall competence, there was no correlation showing

competence reducing with age. There are no comparable figures for the population at large so it is not possible to tell whether our figures are true for that group or that only technically competent people volunteered for the research programme.

A question asking NHS participants about their access to a computer revealed that 29% have one at home and 17% have access to one at work. Interestingly, NHS clinicians had less access to computers at work (63%) than NHS managers (88%). Even more startling was the poor level of NHS-Net (a secure internal network for NHS staff) access at work, with only 20% of clinicians having access and 30% of managers.

We then examined where staff accessed the courses and found that the majority studied at home, with very few (6%) studying from two locations. This is particularly interesting, as it shows that when staff had the choice of studying at work or at home they chose to study at home. In fact, of those staff who had access at work and at home, 59% chose to study at home and 33% chose to study at work, while only 9% chose to study at both home and work. This suggests that even if access to computers and the NHS-Net were improved at work, the majority of staff would still choose to access e-learning at home over the internet.

The participants were also asked about the level of support they received at work. It was found that 64% had no support at all, while 36% had some support. This involved:

- Access to a computer at work (27% of clinicians and 32% of managers)
- Study time (15% of clinicians and 10% of managers)
- Being allowed to access courses on duty (3% of clinicians and 3% of managers).

The following are some of the participants' comments about their place of study:

'I studied at home before or after a shift on my own computer. I do not have this facility at work and would not have the time at work.'

'Always at home, mostly in the early hours of the morning when the children were still asleep!'

'At home in the evenings. I would not have the time to do it at work during the day due to workload commitments. Also, it would be difficult to concentrate because of unpredictable and frequent interruptions.'

'I did the course at work either during my lunch or at the end of the day before going home. I intended to study at home but have two small children and I work full-time, therefore I found it difficult to bring myself to log on to study at night.'

The above figures and comments suggest that a model of e-learning involving staff accessing e-learning at work before, during or after a shift is unlikely to be successful. When the participants were asked what support they would most like, their replies indicated that study time to access courses was the most desired option (37%), bearing in mind that most wished to study at home.

It is commonly believed that in order to undertake e-learning, a minimum level of technical competence is required. This study set out to assess that level. To do so, we looked at the relationship between e-mail competence and internet competence in relation to the following:

- Simple technical queries (for example, how to find a web-page, how to change screen resolution, how to enter password and user name)
- Complex technical queries (for example, ActiveX problems, Java problems, firewall problems)
- Software technical queries (for example, problems specifically relating to the e-learning software itself).

The replies were coded into one of the three categories. Intuitively, we expected to find that people of higher technical ability would raise fewer simple and complex technical queries, and possibly fewer software queries. However, analysis showed that the average number of both simple and technical queries did not significantly vary according to e-mail or internet competence. Furthermore, the average number of software technical queries did not significantly vary according to e-mail or internet competence.

The study also examined whether or not technical competence influences how successful people are in starting e-learning courses and, again, there was no significant difference.

Participants were asked the types of problems they had encountered with the courses they had undertaken as part of this study, and the results were coded as follows (n=127):

- Slow - 31%
- Other technical difficulties - 25%
- Difficulty downloading - 20%
- Difficulty navigating the course - 15%
- No offline - 4%
- Health problems - 3%
- No deadlines - 2%

Some of their comments were:

'Slow to download, slow to move to next page, inability to work offline. At first I didn't think it would be too much of a problem, but actually the excessive downloading time prevented me from even bothering in the end.'

'I had problems printing off some of the screens ....'

'... Mainly being unable to load the program. It was a very frustrating experience.'

'Very easy not to allocate time to study as there are no deadlines/timescales to work to. The unstructured nature of e-learning means that it takes a very dedicated person to set their own programme of time and stick to it!'

'Difficult to do the work at work because of other distractions and people not really understanding what it was I was trying to do.'

3. How nurses and allied health professionals access the material
Participants were asked their preferred time of studying, and analysis showed that those studying at home preferred doing so in the evening, followed by 'evenings and weekends'. The distinction is that many staff referred to their studying time as 'evenings' only and others as 'evenings and weekends'. Even those who preferred to study at work said that they preferred evenings over daytime.

Answers to a question asking participants whether they had previously undertaken any previous professional development studies revealed that 20% of NHS staff had started a distance learning programme and that 37% were

Table 5. Previous leadership programmes undertaken by participants

	All %	Clinicians %	Managers %
Leading an Empowered Organisation (LEO)	22	20	30
Master's degree course (eg MBA)	9	7	16
Other regional leadership courses	7	5	13
RCN Clinical Leadership Programme	5	5	5
Diploma course (eg DipHSM)	5	3	10
Other national leadership course	4	3	6
King's Fund leadership courses	2	1	4
RCN Primary Care Leadership Programme	1	1	3
RCN Political Leadership Programme	1	1	3

studying for another course. Specific previous leadership development programmes that participants had undertaken are indicated in (Table 5).

The figures show that many participants had completed previous leadership programmes, a situation that may have implications for how NHS staff see the courses used in this study — as complementary to existing courses rather than as alternatives. Some comments were as follows:

> '*The difficulty is the lack of academic accreditation for undertaking the course — this competes with the fact that many nurses are undertaking post-grad work in their own time also.*'

> '*Last week I went on the LEO programme for three days. The first two days I kept thinking: "This is just what I have been doing on the e-learning". It was great to know the courses are comparable and I would recommend the e-learning approach.*'

The study also tracked the number of separate sittings necessary to complete a course and the results showed that more than 10 sittings was not uncommon. The average length of an online session was 25 minutes, with 73% of staff spending less than 30 minutes at a time on the course. E-learning is often described as being capable of being studied in bite-sized chunks, and these figures support that view and also quantify the sizes of the 'chunks'.

4. The effectiveness of the content for participants' purposes
Students were asked what aspects of e-learning they liked, and the results were coded as follows:
● Study at own pace (57%)
'I could do it when I could find the time, which could be any time of the day or night.

Being able to access it at a time that suited me and for as long as I could manage. Good that the programme told you what you had done and what you still needed to do — good memory jogger when you logged on the next time.'

● Any time, any place (49%)

'I enjoy the freedom to work at my own pace and in my own time, although I do miss the face-to-face contact, and immediate feedback when in a classroom.'

● Interesting content (10%)

'The design of the course was much better than anticipated. I would not have considered paying for e-learning before, but would now. In fact, this particular course was quite addictive.'

'Loved the intensely practical nature of the courses — a welcome change from a master's degree! Courses directly related to work, easy to influence practice. I took notes from each section.'

'I loved the ethos of the courses. The style of leadership being presented seems to me to answer a lot of my problems with NHS management and culture. I liked the scenarios, and the simulation was a vast improvement on interactive learning.'

● Accessibility (10%

'The aspect that appeals to me is being able to do it at home.'

'It was actually easier than I thought it would be.'

● Interactivity (9%)

'I found that, while it was not a health-focused course, its breadth and some of the principles helped me broaden my thinking. I liked the course's design in that it reiterated points in different ways — a brainwashing experience; it did mean it really sank in.'

Other aspects they liked were: the amount of information (9%); control over content (9%); choice of topics (7%); pre-assessment and mastery (6%); as much or as little as wanted (5%); contact with other learners (3%), and tracked progress (2%).

The students were also asked what aspects of e-learning they disliked, and the results were coded as follows:

● Slow (23%)

'It was time-consuming and would have been costly to make any copy of information, so I took notes. It would be helpful to provide summary handouts of courses the participants accessed either via post or an electronic handout that could be stored for reference.'

'Downloading takes a long time for some of the modules.'

● No human contact (16%)

'Not able to see other students — I do not really feel part of a group. I did not really like having to post things on notice boards etc when I felt that I had little to say on the subject.'

'Isolated. I like people interaction when I am learning, to bounce ideas off.'

● Not NHS-specific (15%)
'Very American, very business- not public sector-oriented. Very repetitive style of interactivity in the module I did, which irritated me rather than stimulated my learning.'

'They were not related to the NHS experience, and although I could translate most of the situations and teaching to what happens in the NHS, it would have been better to have been health-based.'

'I thought that the programme was very industry-focused, and was not always that easy to relate to the health service .... for example, it talked about productivity, bonuses, and so on.'

● Computer problems (11%)
'Frustrating when you have a technical problem and don't know how to deal with it. This does overshadow the benefit from the course itself.'

● Prescriptive answers (8%)
'Some of the questions were very prescriptive and I did feel on several occasions that I did not agree with their answers, and the dialogue box did not make up for someone explaining the rationale for the answers'.

'The lack of intellectual engagement or any admission that a different point of view might be viable or at least worth considering. The method actually doesn't reflect the person-centred and open values of the course.'

● No printed material (7%)
'Would like to be able to print some pages for future reference. Also, I would like hard evidence that I have completed some courses.'

● Too simple/easy (6%)
'It wasn't in such great depth as I thought it would be and parts of the courses I did were not totally appropriate for the kind of work I do. I did find reading the screen quite an eye strain, even with my glasses!

The other aspects they disliked were: no opportunities for reflection (4%); finding time (2%); not enough support (2%), and repetitive (2%).

5. Comparison of different approaches to e-learning
The study examined the differences between facilitated and automated approaches to e-learning. These terms were defined by us as follows:
Facilitated e-learning: where students are grouped together under a supervising tutor or facilitator. These courses are designed to encourage group interaction and reflection and require students to undertake e-learning programmes within a course timetable
Automated e-learning: where the student interacts only with the e-learning software, and has no supervising tutor or facilitator. The student is not part of a group and so is not constrained within a course timetable, although this does result in less group support and reflection.
It is commonly assumed that facilitated e-learning is the superior of the two, because tutor support and group reflection are an important part of any development programme. The disadvantage of the facilitated e-learning

approach is that it is often more expensive and that students have to study within a course timetable rather than at their own pace. One of the providers for this study used the facilitated approach (Academee), while the other two used the automated e-learning approach. Academee was used by a cohort of 18 students for three one-month courses. Each course had a supervising tutor who provided individual support and facilitated group activities and reflection. Although the courses were free to study participants, normally the cost per student is approximately £100 (£33 per course).

Participants using Skillsoft and XebecMcGraw-Hill were given access to over 100 courses, and could do as many or as few of these as they wanted, entirely at their own pace. There was no tutor support, and although the students had access to a discussion group, there was no requirement for group reflection or interaction. Again, although the courses were free to the study volunteers, the cost per student of these courses is approximately £10 (10p per course).

Eighteen participants were allocated to Academee; 174 to Skillsoft and 156 to XebecMGraw-Hill (348 participants in all). Fewer students were allocated to Academee, partly as a result of the capacity of the supervising tutor (who can support only so many students), and partly because of financial constraints. However, not all students started their course. Only 10 of the 18 allocated to Academee started (56%); 98 (56%) of the 174 allocated to Skillsoft, and 62 (40%) of the 156 allocated to XebecMcGraw-Hill. Thus only 170 nurses (49%) started a course. It is unclear why approximately half the students who successfully registered never began any e-learning although two comments may be revealing:

> '*Very easy not to allocate time to study as there are no deadlines or timescales to work to. The unstructured nature of e-learning means that it takes a very dedicated person to set their own programme of time and stick to it!*'

> '*Unable to access initially, then my trust stopped internet access, which you rectified very quickly. I finally registered but it took a few weeks. [The main difficulty was] being unable to load the programme. It was a very frustrating experience.*'

These comments suggest that three contributing factors may be time management, discipline, and problems with internet access. However, having started a course, not all participants finished it: five out of 10 (50%) of those who studied Academee finished it; 17 out of 98 (17%) of those using Skillsoft, and 23 out of 62 (37%) of those who used XebecMcGraw-Hill. Thus only 45 (13%) finished their courses (26% of starters).

Although the Academee figure is higher in terms of completing any course, it should be remembered that this program is made up of three courses, all of which need to be completed. In fact only two out of 18 (11%) completed the three courses; that is, 20% of starters.

The figures for course completion appear disappointing, with only 45 students completing any course out of 170 starters out of 313 registered students. At first sight this seems like a very high drop-out rate, which would raise doubts about the effectiveness of e-learning as a development tool, however the next section challenges this assumption.

6. A measure of the impact of e-learning on individual leadership development
The follow-up questionnaire asked if the students used e-learning in practice. Analysis showed that 60% of students had used Academee in practice; 59% had used Skillsoft and 39% had used XebecMcGraw-Hill. Of those who had

started an e-learning programme themselves, the figures for those who had used e-learning in practice were even higher: 83% of Academee students; 69% of those who had used Skillsoft, and 43% of those who had used XebecMcGraw-Hill. Examples were given of practical application of e-learning in the following areas:

● Dealing with stress in the workplace
'Used the course on dealing with confrontation — a particularly stressful time for staff in my workplace at the moment, so I was using some of the insights there.'

'Dealing with difficult people ... very useful in communicating with some colleagues; has helped me build strategies to cope with such situations.'

'Conflict management was helpful. My staff here are very strong individuals — you have to be, to survive out there. This subject was very clear and easy to follow. I have tried it, and it works.'

'I completed the assertiveness module – I had previously always thought of myself as being assertive — my colleagues would also describe me as being so. However, on assessment I realised I was not so and instead was categorised as "passive aggressive".'

● Managing competing demands and priorities
'I have reorganised my life with filing and planning. I now say "no" to taking things on that I cannot manage time-wise. I have learnt about different types of managers and have used this knowledge in practice, also.'

'Discovering balance — I really looked at my time management and made a conscious effort to make time for personal time both at work and at home. Instead of using killer phrases at work such as "I don't have time", I say I have other priorities.'

● Managing teams better
'I have changed the way I allocate patients at work, taking a few more minutes for discussion with the team at the beginning of the shift.'

'The material on delegation made me think deeply about the way health care assistants have been given tasks within the remit of trained nursing, such as changing dressings and carrying out clinical observations, but the extent of their responsibility has not.'

'I have communicated much more with the team and have given problems brought to me from team members back to the team to sort out for themselves — enabling them in turn to develop professionally.'

● Managing meetings better
'The action points for meetings and some of the role-plays could be transferred, especially team building. I found it useful to reflect on how I deal with situations; it provided me with insight into how I work.'

'I really liked the five-minute meeting idea in the leadership program and have stared this with my team at work. Because it is only five minutes, everyone is happy to take part and it has really improved communication.'

- Developing personal development plans
  'Helped me to develop a better quality personal development plan for another course.'

  'I feel it has helped me become more aware of my skills, strengths and weaknesses.'

  'I've used the initial assessment it did of me to evaluate myself and develop a personal development plan. It has helped me to recognise the types of leaders within my own organisation.'

- General personal development
  'This course is one of the best I have participated in ... so it has been extremely useful to me.'

  'For someone who finds it very difficult to gain broader development, this program was excellent for my PREP requirements, including the clock of how many hours I'd spent on each course.'

The fact that 60% of all students who started the courses had used them in practice even though only 26% completed any course appears to be a conundrum, until it is remembered that completing a course involved completing the post-course assessment. Given that the motivation for students undertaking these courses is primarily personal development and interest rather than acquiring additional qualifications or career development, it should come as little surprise that they are not completing the final assessment.

The evidence suggests that students are undertaking courses that they feel are useful, and are using them in practice, but are not particularly interested in completing assessments to demonstrate that they have gained additional knowledge or skills.

OTHER SIGNIFICANT FINDINGS

Participants were asked whether they would recommend e-learning to friends and colleagues, and 85% said they would. They were also asked what they would change in relation to the courses they undertook for this study. Their responses are shown in Fig 2.

DISCUSSION

Our research highlighted the appeal of e-learning to a wide age group of registered nurses and allied health professionals, with demand from both the NHS and private companies. It was also shown that there was a demand for e-learning from both within the UK and abroad. Analysis revealed that all levels of staff wish to have access to e-learning and that their motivation was primarily for personal development and personal interest. Participants revealed that they were most interested in acquiring leadership skills, developing personal effectiveness, acquiring the skill of conflict resolution, managing change and problem-solving and that they would like their learning to be accredited to an external organisation.

Access to professional development courses was not easy for most participants because of difficulty keeping a balance between their work and home life; lack of money, and lack of time. Home was the preferred location for undertaking an e-learning programme. This may be because of an unwillingness to discuss problems of access or their personal development with their managers. Many staff appeared to get little support for personal development

Fig 2. Changes suggested by participants in relation to the content and organisation of the courses they undertook

● More NHS-oriented	15%	● More printed material	7%
● Easier access	13%	● Offline access	7%
● More group meetings	11%	● More support	6%
● Faster	10%	● Accreditation	5%
● More information and		● More feedback	2%
guidance	9%	● Free internet access	1%
● Easier registration	9%		

at work and there was a distinct lack of access to technology and the internet or intranet.

Despite the researchers' expectations, learners do not appear to need comprehensive information technology skills in order to enjoy e-learning, and they seemed to be as happy with automated approaches as with facilitated solutions. The latter is significantly more expensive, but for courses with an emphasis on skills and values is not more efficient or effective for learners. The most popular time for accessing courses proved to be evenings and weekends, with the average time spent learning being 25 minutes. Students appreciated the ability to learn at their own pace and to be able to take control of their learning whenever and wherever they wished.

The most important finding was that students used their learning to solve real clinical problems and could give evidence that it had helped them to overcome constraints such as paperwork, time management and conflict situations. Many stated that it had given them more confidence than higher level courses such as those at degree level.

CONCLUSION AND KEY POINTS FOR FUTURE E-LEARNING DEVELOPMENT
The results of this research have shown that if successful professional development e-learning programmes are to be developed, three specific criteria must be met:
● They must fit around people's existing work-life balance
● They must not demand a large time commitment
● They must be cheap or free.

Furthermore, the courses must be available over the internet, as most staff have better access at home than at work, and people who have a choice would rather study at home in the evenings and at weekends. Very few students choose to access courses at work during the daytime. In addition, the courses must be available in bite-sized chunks. The responses indicated that most people want to access courses in chunks of less than half an hour.

There is no need to have a high technical ability in order to be successful at e-learning, and there was no evidence to support access courses as a prerequisite to undertaking an e-learning programme.

On examining the two types of e-learning — facilitated e-learning and automated e-learning — the former does not appear to be significantly more effective, although it is much more expensive.

Participants seemed reluctant to complete post-course assessments, even though they enjoyed the courses and applied them in practice. An e-learning assessment strategy, therefore, needs to take into account people's reluctance to complete courses in their entirety even though they are applying them in their practice.

KEY POINTS

● Successful e-learning needs to fit around people's work-life balance, be easy to use, and cheap or free

● Nurses (particularly in the NHS) appear to have better access to the internet at home than at work, and home is where they prefer to study

● Nurses do not need high levels of technical skills in order to undertake e-learning

● E-learning seems to be extremely effective at delivering leadership development, with over 60% of nurses applying it directly in their workplace

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