
An Introduction to e-Learning

A Study of the Current State of e-Learning in the United Kingdom

Gizella Dewath: 2004

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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, and reduce the time spent on administration. It can enable every learner to achieve his or her potential, and help to build an educational workforce empowered to change. It makes possible a truly ambitious education system for a future learning society.'

Towards a Unified e-Learning Strategy [<http://www.dfes.gov.uk/consultations/conResults.cfm?consultationId=774>]

The DfES e-Learning Strategy Unit, 2003

'Technology has revolutionised the way we work and is now set to transform education. Children cannot be effective in tomorrow's world if they are trained in yesterday's skills. Nor should teachers be denied the tools that other professionals take for granted.'

Tony Blair, 1998

'A click of a mouse button provides any student anywhere with unprecedented opportunities to learn. So if a child in Grand Junction wants to master Japanese, it's possible online. If a budding artist in Five Points wants to study the masterpieces of the Louvre, it's possible online. If a future Stephen Hawking in La Junta wants to study Gravitational Entrophy with the man himself, it's possible online. If military parents want continuity in their children's education throughout frequent moves to serve our country, then it's possible online.'

Rod Paige, US Secretary of Education, 2002

'With every special newspaper supplement, it seems, those in the business [of e-learning] offer new visions, new services we didn't know we needed, yet more exciting equipment

and software possibilities that lie just over the horizon and, less well-publicized, an increasing number of routes to what may be educational dead ends.'

Online Learning and Teaching With Technology
Murphy, Walker, Webb, 2001

Introduction

Since the Internet was adopted and further developed as a means of communication by educational institutions in the 1970s, academics have been aware of its massive potential as a learning tool. In recent years, governments of both developed and under-developed nations have become increasingly excited about the possibilities of online learning to deliver cost effective, easily accessible and ever-current education to all ages and social backgrounds, regardless of time and geography.

In the 'Information Age' where the need for 'knowledge workers' increases as the need for manual workers decreases, 'lifelong learning' is seen as key to the continued success of modern society. 'e-Learning' is considered by many as the only viable solution to the problem of delivering the resources required to facilitate lifelong learning.

However, current theories and practices in e-learning are neither simple nor coherent, meaning that the implementation of this solution is happening sporadically, randomly, and with varying degrees of success. In spite of the enthusiasm and commitment being shown by the UK government, there is still considerably apathy, confusion and scepticism about e-learning amongst teachers, students and academics alike. Although most recognise that e-learning has the potential to enhance greatly learning and the learning experience at all levels, many feel that its drawbacks are currently still too great to commit so heavily to it.

Although much has been said and written on the subject of e-learning, there are few definite conclusions to be drawn from it. Books are written, Internet groups are formed and conferences are held, but we still seem unable to really define how, when or where e-learning should best be used. While the arguments rage on, an increasing number of institutions are attempting to pioneer their own style of e-learning, all with their own successes and failures. The DfES aims to have in place its 'Unified e-Learning Strategy' by the summer of 2004, but whether this will improve, impede or have no effect on e-learning is itself a matter for debate.

This report will aim to give a general overview of the extent to which e-learning is being used in the UK, how it is being used and its potential and pitfalls. It will examine e-learning from the point of view of students and teachers, and will explore how the UK Government is attempting to regulate e-learning. It will also look briefly at the current state of e-learning globally.

What is e-Learning?

e-Learning is the employment of technology to aid and enhance learning. It can be as simple as High School students watching a video documentary in class or as complex as an entire university course provided online. e-Learning began decades ago with the introduction of televisions and over-head projectors in classrooms and has advanced to include interactive computer programmes, 3D simulations, video and telephone conferencing and real-time online discussion groups comprised of students from all over the world. As technology advances, so does e-learning, making the possibilities endless.

Focusing on the use of the Internet in e-learning, three primary uses have emerged:

1. Non Academic/Corporate

Both small and large businesses are increasingly using e-learning for initial and updating staff training. Both external resources and in house programmes developed on company intranets are used.

Benefits

- Information (such as health and safety) can be kept current by updating the intranet site. Staff can be instructed to update their training as and when the information is updated; without the need to organize trainers and courses, and find the time for staff to attend them. This is seen as the best way for staff to keep their skills up to date.
- Enables 'just in time' learning. When employees face new challenges in their day-to-day work, they can immediately access a central training resource to equip them to deal with it, on a situation by situation basis.
- Staff can train as and when they want to, and can break the course up into sections as they see fit (removing the problem of concentration loss).
- Money is saved by reducing the need to book venues and trainers. Staff are released from their desks for a minimum amount of time.

Problems

- Staff are resentful, as they feel obliged / are encouraged to do the training in their own time i.e. during their lunch break, or before / after work; instead of being given time off to do it.
- It may be difficult to gauge whether or not staff are actually completing the training fully / benefiting from it as much as they would from a classroom based training session.
- Staff may need support to use the technology.
- Online resources take time and money to set up and require ongoing maintenance and support.

2. Academic: VLEs

Universities are increasingly opening up to the possibilities of 'Virtual Learning Environments', sometimes used alongside MLEs (Managed Learning Environments).

VLEs are currently being used more (and more effectively) by new universities (post 1992). Older, more 'traditional' universities are therefore feeling the need to 'keep up', and are also beginning to invest in this technology. The concept of the VLE is still relatively new, and some institutions are currently only using them on a trial / pilot scheme basis. Most VLEs are currently supported by purpose built software such as BlackBoard and WebCT. Microsoft also enables VLEs to be set up through MS Exchange. There is currently no consensus as to exactly what a VLE should comprise or how it should best be used. Some examples of uses are:

Placing an entire course/syllabus on the VLE so that no personal interaction between lecturer and student is required. Communication is via email and assessments are submitted electronically.

Benefits

- Widens access to the course: students can learn from wherever they are and numbers do not have to be limited.
- Can be more cost effective.
- Provides access to more information, and allows students to use their own initiative to find it.
- Simply a 'different' way of learning, which some students enjoy.
- Students imbibe extra computer skills that may prove useful generally.
- Students can study whenever and wherever they want to.

Problems

- Students miss out on the benefits of face-to-face interaction and the knowledge sharing that can arise from this.
- Students find that the system is not sufficiently supported, and have difficulty using it.*
- Computer systems can be prone to technical difficulties. Failure of server, client or connection can mean the students are unable to study.*
- Students are not motivated to study alone.
- Students are 'tempted' away from studying when they connect to the Internet. It is too easy to surf instead of study.
- Less technology-savvy students may not perform as well as they would do in a traditional class.*
- There are potential health risks associated with excessive computer usage.

Using the VLE to supplement an attended course. For example, making lecture notes available on the VLE after each lecture, and providing / pointing the students in the direction of additional material.

Benefits

- The best of both worlds. The students benefit from person to person interaction as well as the new dimensions that the Internet can bring to their studies.
- Digital information reduces strain on the library. Students no longer feel they have to fight over books.
- Students feel that they benefit from simply listening to lectures, rather than having to take notes, which they can get from the VLE afterwards.
- Students do not have to worry about missing tutorials if the information is on the VLE.

Problems

- Students resent having to pay for Internet connection and feel that the institution is cutting costs at their expense, as they now have to pay for their own paper and ink, where as they would formerly have been provided with photocopied handouts by the lecturer.
- Students are not motivated to go beyond the VLE and use it as a spoon to feed themselves with.
- Students get frustrated if academic staff do not do a particularly good job of the VLE.
- Not all students have their own computer, and find it difficult to get access to the VLE.

See also problems marked with an * in the previous section.

A key use of VLEs is for communication. VLEs can contain a personal mail-box for each student, as well as any number of bulletin boards, discussion groups and real-time chat rooms. These communication systems are designed for both Student-Lecturer and Student-Student interaction. Learning is encouraged beyond the lecture hall and indeed, independently of the lecturer, as students are able to discuss issues and disseminate their own ideas/resources/information. Students are also able to interact with other students doing the same course in other institutions and even in other countries.

Benefits

- Questions can be posted to the lecturer, and the answers can be viewed by everybody. As students frequently have the same questions, this can save a great deal of time. This can also be a good support to shy students who may not have the confidence to ask a question in front of a hundred other student in a lecture hall.
- Students consider the VLE to be a good 'ice-breaker'. They can find out about a student and their work before meeting them in person, which makes conversation easier.
- The written form of communication allows students to formulate their comments before making them (particularly beneficial to less confident students).
- Distance learners feel more included as they can take part in discussions and get to know students on campus.

Problems

- Less technology-savvy students may not perform as well as they would do in a traditional seminar.
- Some students get frustrated if not many other students actually participate.
- As one student from SOAS says: "Giving the students a voice on the discussion board. Some of the postings are absolutely pointless and rather annoying".
- Some students at SOAS felt that their comments on the discussion boards were being 'censored' by academic staff. They felt they should be allowed freedom of speech.
- Written communication is very different in nature to face-to-face contact. Written comments can be easily misinterpreted which can lead to discussions becoming arguments, which descend into personal attacks. Etiquette is not the same online as it is in person, and some people feel that the anonymity of message postings allows them to dispense with usual decorum and politeness. People are more likely to behave in a way that they would not dream of if speaking to a person

face to face. While most tutors wish to permit freedom of speech, it is also felt that online debate does need to be carefully monitored and controlled to prevent them from descending into chaos.

VLEs can also be used for administrative purposes, providing a single, easily accessible area to post course information, assignment information, timetables and changes to venues, times etc. Special announcements can be made without the lecturer having to contact each student individually.

Benefits

- Students know where to go to get the information they need and can get it without bothering the lecturer.
- Can save the lecturer time as all information can be deposited in one place.
- Students can get access to information about the course / other courses, which they may not otherwise have known. This can help to inform their long-term study plans.

Problems

- Students are not always able to check the VLE as often as they need to and miss important announcements.
- Students resent having to check the VLE all the time just in case there is something important on it. It was easier for them when messages were sent to their regular mail-boxes.
- Students may miss information during a system failure.

VLEs can also be used to allow students to compare their own work to that of other students. Some institutions are posting all student assignments onto the VLE so that students can learn from other students' work. This can give them a wider perspective on the subject than simply the lecturer's. It is frequently used as the basis for further discussion on the VLE.

Benefits

- Students learn from other students, not just the lecturer.

Problems

- Students do not get to choose which pieces of their work are put up. Some students do not like others having access to their work at all, and become more concerned about mistakes.
- Potential for encouraging plagiarism.
- Some students feel that the VLE is abused, and simply used as a showcase for personal work (at SOAS, this was a criticism levelled at course administrators as well as other students).
- Students learning from other students could result in a decrease in the quality of learning.

Examples

Blackboard Greenhouse Exemplary Course Program [<http://www.webct.com/exemplary>]

MIT OpenCourseWare [<http://www.webct.com/exemplary>]

3. Academic: Educational Websites

Some institutions (and individual academics) have preferred to develop their own online educational resources rather than use something as structured and pre-determined as a VLE.

These are basically individually designed websites that are tailored to a particular audience, often on a particular subject. They are much like an interactive text book, including audio, video and 3D graphics. Some also contain activities and quizzes etc to aid learning. They can make learning more interesting and have can help students to visualise situations and objects in a realistic way that they would not otherwise have the opportunity to see. They are often based on a particular resource such as a digital library or collection. These sites can also contain the discussion board elements of a VLE, and can give students / the general public the opportunity to ask questions of experts via email.

Some sites also contain an area for teachers, giving advice on how to use the resources for particular age groups and curricula. Many also include printable material to accompany the web site and to use in

class.

These sites can also serve to promote the work of the organisation and some also contain fund raising opportunities. They are not so much aimed at a select group of students but are available to academics and members of the public alike. A lot of educational content that would be of interest to many people is currently only available to university students on college intranets.

It is however, less easy to fully integrate such a site with a specific course or program of study. They are more of a resource for students to draw on and to learn more about a particular subject. However, by working with schools, colleges and the Government, more institutions (like the BL) are trying to provide relevant content based on their knowledge and collections.

Examples

Theban Mapping Project [<http://www.webct.com/exemplary>]

Ancient India [<http://www.webct.com/exemplary>] (One of several sites that The British Museum provides for schools)

BBC Learning [<http://www.webct.com/exemplary>]

National Geographic Education Guide [<http://www.webct.com/exemplary>]

Raid on Deerfield [<http://www.webct.com/exemplary>]

e-Learning: The Academic Staff Perspective

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'A significant proportion of students on Business School courses are from overseas, and often non-native speakers of English. Technology mediated communication through the VLE offers these students the opportunity to revisit and rephrase their contributions and answers before going public, which helps in building confidence.'

*University of Birmingham**

'The system is seen as being of immense benefit to students. It allows distance-learning students to maintain a better sense of community and, where previously these students might have felt isolated, they can more easily know everyone on the course and communicate with them. The VLE also facilitates collaborative working arrangements, and has changed the role of the tutor to facilitator and observer rather than active participant in discussions, for instance.'

*University of Dundee**

'I feel as though I have regained my module - students used to start out well then learn by rote - I can see a shift towards greater student responsibility in learning, not just taking handouts and notes.'

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'The time available to staff, necessary to update their skills and experiment with and exploit opportunities provided by the VLE, is still a barrier to wider uptake. Maybe more dedicated support is needed.'

*University of Birmingham**

'One lecturer started to use the VLE more or less independently in a fairly basic manner: 'glorified hand-outs' enriched with cluster of multiple-choice questions. This lecturer believed that some colleagues are unlikely to make even these first steps, and suggested that resources that seem to be available to support and encourage technology-related developments seem sometimes disproportionate to what is available to improve or sustain other areas of our work.'

*University of Birmingham**

'There is a tendency for staff to dump materials on the VLE and assume that they have an 'online' course. The system is also not yet fully integrated with either email or other VLEs.'

*University of Dundee**

*University of Wales Institute, Cardiff**

'Using [BlackBoard] enables me to deploy a whole new dimension - the contemporary dimension - to the teaching of [this subject]'

SOAS†

'[What I like about the VLE is that...] "it enables me and studnets to explore dimension of [this subject] that would have been otherwise impossible.'

SOAS†

'This is perhaps the most revolutionary and brilliant move in education since libraries! The potential is boundless." (On MIT's OCW) '

High School Teacher, Connecticut, USA₁

'Staff often underestimate how much time and commitment is necessary to get courses properly onto the system in a way that makes sense and which students can understand. Few staff understand that teaching online is much more difficult than face to face. It has been estimated that 1 hour online = 3 hours face to face.'

*University of Dundee**

'Some students just don't engage with the VLE - the key need is to get them to attend lectures and seminars and to give them printed handouts. Students don't know how to learn - can't generally make best use of a wealth of materials on a VLE.'

*University of Wales Institute, Cardiff**

'My biggest difficulty has been getting access for student users. I have not done as much with [BlackBoard] as I would have liked for fear of excluding students who hadn't yet received usernames. As ours is a large first-year class, it takes until roughly Reading Week for the roster to sort itself out.'

SOAS†

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'The system 'fell over' frequently and both staff and students found it hard to log in to the system - sometimes it took up to 20 minutes to log in, which meant that the system was unpopular and not used to its fullest potential. The network problem was solved by investment in a new server "backbone" and the centralisation of support for the VLE and other e-learning systems. The new system allows much better communication between staff and students and students can also communicate with one another much more easily.'

*University of Dundee**

'Discussion lists are a very positive aspect - sharing and communicating is valuable, but they need a lot of facilitation and work. There are real worries about managing the sheer volume of questions and postings when undergraduate classes are up to 110.'

*University of Wales Institute, Cardiff**

'Perhaps the role of staff will change - course materials will be expected to be delivered only through the VLE and staff will focus more on monitoring and counselling individual learners.'

*University of Wales Institute, Cardiff**

Notes:

* This institution was a case study for the JISC and UCISA *Managed Learning Environment Activity in Further and Higher Education in the UK*. Quoted from concluding report, December 2003.

† SOAS was also a case study for the above. Quoted from *Staff VLE Evaluation results — December*

2003 by Zoë Toft. Original punctuation and grammar preserved.

¹ From MIT OpenCourseWare: World Reaction

[<http://ocw.mit.edu/OcwWeb/Global/AboutOCW/worldreaction.htm>]

e-Learning: The Student Perspective

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'The major positive point for most students is that Blackboard gives them access from anywhere at anytime. Students can carry out more learning at a distance and at times which is convenient to them, rather than convenient to the University and its staff.'

*University of Dundee**

[The best things about the VLE are] 'To have the discussion board to see the opinions of other students. To get messages concerning the course from the lecturer and to be able to ask questions via the e-mail. To download the powerpoints and store them on my computer. It adds another dimension to learning, making it more interesting.'

SOAS†

[The best things about the VLE are] 'Getting to know your fellows students. More contact with the lecturer. Sharing knowledge.'

SOAS†

'It keeps me up to date with announcements and other course related issues. It has EVERYTHING!!! apart from the excellent lecturers on it. EXCELLENT COURSE RESOURCE TOOL!'

SOAS†

'Although I'm not religious the first expression I could think of is: God bless OCW. First time in my life that I KNOW I have the resources to learn. The world is a better place to live because of MIT. Who knows, you may find another Einstein.' (On MIT's OCW)

A Self-Learner, Chile¹

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'There are substantial differences in the availability of PCs between schools. Maybe provision of 'connectivity' needs to be adapted to accommodate wireless networking and plug-in of laptops.'

*University of Birmingham**

'The system is seen as being a bit clumsy — there are often a large number of steps and folders to work through before students get where they want to be and they sometimes get lost in the system.'

*University of Dundee**

'Some files can be very large — if you are working off-site through a modem it can work out quite expensive.'

*University of Dundee**

'I prefer direct contact with people that's why I do not use the blackboard regularly. I find the environment unpersonal. Another reason is the complicated unvisualised website of the blackboard.'

SOAS†

'I don't like having my work displayed for everyone to dissect. more worried about making mistakes as a result'

SOAS†

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'Before incorporating the use of VLEs in all courses there should be a discussion about what staff and students think and feel it ought to contribute. It should not simply replace lecturers and face-to-face communication as a cost saving. Tutors and students need to be motivated to use the VLE.'

*University of Birmingham**

'There is a perception among students that some staff do not know how to use the system and students would like to see more of their courses and modules being on the VLE.'

*University of Dundee**

Notes:

* This institution was a case study for the JISC and UCISA *Managed Learning Environment Activity in Further and Higher Education in the UK*. Quoted from concluding report, December 2003.

† SOAS was also a case study for the above. Quoted from *Staff VLE Evaluation results – December 2003* by Zoë Toft. Original punctuation and grammar preserved.

¹ From MIT OpenCourseWare: World Reaction

[<http://ocw.mit.edu/OcwWeb/Global/AboutOCW/worldreaction.htm>]

The Use of e-Learning in the United Kingdom

VLEs in Higher and Further Education Institutions

Most statistical analysis carried out so far has been into the use of VLEs in British Higher and Further Education, as this is the most common occurrence of e-learning in such institutions. However, it should be remembered that due to the lack of interest among some sections of the education system, some of these statistics are not wholly reliable. Institutions that are (successfully) using e-learning are more likely to respond to surveys on the subject than those who are not, giving a biased view to some results.

Unless otherwise indicated, the following statistics are taken from *Virtual Learning Environment Activity in Further Education in the UK*, a JISC1 and UCISA2 study prepared by The Social Informatics Research Unit, University of Brighton, Education for Change Ltd and The Research Partnership. The results were published in November/December 2003.

Out of a possible 540 Further Education institutions, 256 responded to the survey. Out of a possible 194 Higher Education institutions, 102 responded to the survey. All figures given are percentages of the responding institutions.

Current VLE Usage

- The incidence of those institutions using a VLE currently is as follows:
 - 70% of responding Sixth Form colleges
 - 84% of responding pre-1991 universities
 - 97% of responding post-1991 universities
 - 67% of responding HE colleges
- Almost 50% of all respondents use an intranet-based learning environment or other VLE developed in-house. More FE college respondents (about 40%) than HE (about 25%), in particular, seem to favour intranet-based solutions.³
- [Despite] specific funding provided to FE colleges for VLE purchase, . . . 15% of FE colleges have taken a deliberately strategic decision not to purchase a VLE.

Student and Staff Usage

- The data supports the evidence that the use of VLEs has not yet rolled out to a large number of

students or teaching / academic staff across the sector.

- 36% of all respondents indicate that less than 500 students in their institutions are currently using the VLE. 58% of all respondents indicate that under less than 50 members of staff are currently using VLEs and 50% indicate that the VLE is currently supporting under 30 course modules within the institution.⁴
- The data supports the view that students actively using VLEs in their learning are in a minority in most colleges

No. of Students	Sixth Form Colleges	Other FE Colleges	All FE Colleges	HE Institutions
None	8%	5%	6%	4%
499 or less	34%	47%	45%	36%
500 – 999	29%	18%	20%	17%
1000 – 1999	24%	14%	15%	12%
2000 – 2999	3%	3%	3%	7%
3000 – 4999	-	3%	2%	5%
5000 – 7499	-	2%	2%	5%
7500 – 9999	-	1%	1%	3%
100000 or more	-	1%	1%	6%
Information not collected	3%	6%	5%	5%

- Staff usage, however, appears to be significantly more developed in the HE sector than in FE . . . 33% of HE respondents report 200 or more staff using VLEs whereas 50% of FE respondents report less than 30 staff using VLEs.

No. of Students	Sixth Form Colleges	Other FE Colleges	All FE Colleges	HE Institutions
None	3%	1%	1%	0%
9 or less	18%	17%	17%	9%
10 – 29	21%	34%	32%	11%
30 – 49	21%	18%	19%	8%
50 – 99	21%	8%	11%	17%
100 –	11%	10%	10%	13%
200 or more	-	7%	6%	33%
Information not collected	5%	4%	4%	6%

Notes:

¹ Joint Information Systems Committee

² Universities and Colleges Information Systems Association

³ From *Managed Learning Environment Activity in Further and Higher Education in the UK*, compiled by The Social Informatics Research Unit, University of Brighton, Education for Change Ltd and The Research Partnership, December 2003.

⁴ Ibid

Core Usage

- The survey supports the view that the use of VLEs as an integral component of learning is still in a relatively early stage in development in both FE and HE sectors. 35% of responding FE colleges use VLEs for less than 10 of their courses or modules (HE: 14%).
- 13% of both FE and HE institutions reported that all subjects were making use of a VLE. 2% of FE colleges said that 'most' subjects/departments are using a VLE.

5% of HE institutions said that 'most' subjects/departments are using a VLE.

19% of FE colleges have 6-10 subjects using a VLE compared to 1% with 26-35 subjects.

7% of HE institutions have 6-10 subjects using a VLE compared to 5% with 26-35 subjects.

- 57% of both FE and HE Institutions have courses that are web supplemented (with optional participation).
- 10% of FE colleges and 13% of HE institutions have courses that are web dependant (with required participation through interaction with content and communication with staff/students).
- 5% of both FE and HE institutions have fully online courses.

Support and Administration of VLEs

- The installation and maintenance of VLEs is handled centrally in 81% of responding FE colleges (85% for HE). FE colleges appear to involve more of their curriculum staff in installation and maintenance than do HE institutions (33% in FE compared with 15% in HE). This fits the general pattern in FE of tending to involve academic staff in tasks that support teaching and learning.
- 38% of FE Colleges have no dedicated VLE support staff.
17% of HE institutions have no dedicated VLE support staff.
- Responding FE colleges report that they make heavy use of their academic staff to support and train students in their use of VLEs. The most common method is face-to-face training as part of course delivery. The large number of non-responses for other methods (50% in some cases) suggests that these are underdeveloped at present.
- 18% of FE colleges give specialised support to students with special needs.
25% of HE institutions give specialised support to students with special needs.
- 17% of FE colleges give specialised support to off campus/distance learners.
38% of HE institutions give specialised support to off campus/distance learners.
- Perhaps more tellingly, 69% of FE colleges and 55% of HE institutions did not answer the questions on specialised support, suggesting that they do not know, or that they do not have any in place.
- Likewise, between 19% and 63% did not answer questions about general student support and training, suggesting that this is a problem area for many institutions.

Commitment to VLE Usage

- Question:
Does your institution have a stated target for the use of VLEs (e.g. 10% of courses)?
- Responses:
34% of responding sixth form colleges have a stated target;
42% of other responding FE colleges have a stated target;
40% of all responding FE colleges have a stated target;
31% of all responding HE institutions have a stated target.

Case Study: Massachusetts Institute of Technology

In 2001 MIT launched its 'OpenCourseWare' [<http://ocw.mit.edu/OcwWeb/index.htm>] initiative; a project aiming to provide basic course materials for 2000 subjects available on the Internet for the use of anyone (non-commercial), free of charge. At present, 700 courses are already online.

'MIT is delivering on the promise that it made when OpenCourseWare was announced in 2001, and we are pleased that educators and learners from all parts of the globe tell us that OCW is already having an impact on education and learning. We see OCW as opening a new door to the democratizing and transforming power of education. We hope the idea of openly sharing course materials will propagate throughout many institutions and create a global web of knowledge that will enhance the quality of learning and, therefore, the quality of life worldwide.'

Charles M. Vest, President, MIT

MIT is monitoring the success of the project with continuous evaluation. The following statistics were published in March 2004.

MIT OCW traffic volume is high, and there is a core of repeat visitors.

- The MIT OCW Web site recorded 728,000 visits between October 1 and November 31, 2003-an average of almost 12,000 visits per day.
- Returning visitors accounted for 25% of daily visits in November 2003.
- More than 95% of users plan to return to the MIT OCW site in the future.
- Almost 10% of visitors report daily use of the site; 25% at least weekly use; and 40% report more than 10 previous visits to the site.⁵

OCW is intended to be a global initiative and has attracted users from all over the world:

Rank	Region	Est. Daily Visitors	% of MIT OCW Traffic by Region	% of Total Internet Users by Region*
1	North America	5,352	45.4%	29.6%
2	Western Europe	2,234	19.0%	26.1%
3	East Asia	2,153	18.3%	28.3%
4	Latin America	694	5.9%	5.0%
5	Eastern Europe	465	3.9%	2.0%
6	South Asia	301	2.5%	2.6%
7	Middle East & North Africa	187	1.6%	2.1%
8	Central Asia	165	1.4%	1.2%
9	Pacific	163	1.4%	1.9%
10	Sub-Saharan Africa	53	0.4%	0.9%
11	Caribbean	19	0.2%	0.2%

*This column represents an approximate distribution of Internet users by geographical region. Estimates of total number of Internet users from www.Internetworldstats.com. Underlying usage information comes mainly from data published by Nielsen-NetRatings, ITU, and local NIC and ISP sources.⁶

Across these geographical regions, OCW is used mostly by educators, students and self-learners:

- Numerically, self-learners predominate, representing 52% of visitors with an average of 6,000 daily visits. Self-learners are most likely to come from North America (60% of North American visitors).
- Students represent approximately 31% of visitors or an average of 3,600 daily visits.
- Educators represent over 13% of the visitors or an average of 1,550 visits per day.
- The MIT OCW user base is well educated. Almost 70% have a bachelors degree or higher.⁷

Overall, over 80% of all users thought that MIT's OCW does have or will have a positive or extremely positive impact on teaching and learning.

Notes:

⁵ From MIT OpenCourseWare Program Evaluation Findings Summary Report [<http://ocw.mit.edu/OcwWeb/Global/AboutOCW/evaluation.htm>] , March 2004.

⁶ Ibid

⁷ Ibid

Educational Websites

It is hard to gauge the extent to which educational websites are being used without analysing traffic statistics for individual sites, but clearly some institutions are making valuable and successful use of this form of e-learning.

Case Study: The BBC

The BBC supports a wide range of educational sites, including interactive learning and resources for teachers. They also use television, radio, interactive television and mobile phone technology to deliver e-learning.

"One million users come to the BBC's adult skills sites each month and between one and two million to the BBC schools sites. About half of all UK teachers use BBC schools online pages."

The BBC has been running its multi-media revision project 'bitesize', since 1998. It combines online services with books, television programmes and interactive television and covers easily digestible revision for all subjects. "It stimulated the market for such services and is still the most popular, used by around nine out of ten 16-year-olds taking exams in 2003, with a weekly total of 17 million page impressions at the height of the exam season."

The BBC also runs an Internet literacy course called WebWise that leads to a formal examination and award. "Currently 200,000 people visit the WebWise site each month and 2,000 complete the final test. Half a million have used a free WebWise CDROM over the past four years."

'Skillwise' is an interactive site to help adult learners with reading, writing and mathematics. It is designed to be used at home or in colleges and learning centres. "The BBC has run familiarisation courses for over 3,000 tutors. Traffic to the site has risen to more than two million page impressions a month."⁸

BBC — Schools — Revision Guide [<http://www.bbc.co.uk/schools/revision/>]

BBC Webwise [<http://www.bbc.co.uk/schools/revision/>]

BBC Skillswise [<http://www.bbc.co.uk/schools/revision/>]

Notes:

⁸ All quotations in this section from The BBC and e-Learning by W. Jones, Head of Public Affairs & Policy, BBC Learning, posted on elearningeurope.info [<http://www.elearningeurope.info>]

e-Learning and the DfES

'There is e-learning already around us in schools, colleges, universities, community centres, in the workplace, and in the home. It is important because people are finding that e-learning can make a significant difference: to how quickly they master a skill; how easy it is to study; and, of course, how much they enjoy learning. It is important because it can contribute to all the Government's objectives for education — to raising standards; improving quality; removing barriers to learning and participation in learning; preparing for employment; upskilling in the workplace; and ultimately, ensuring that every learner achieves their full potential.'

Towards a Unified e-Learning Strategy [<http://www.dfes.gov.uk/consultations/conResults.cfm?consultationId=774>]

Consultation Document, July 2003

The Government believes whole-heartedly in the potential of e-learning, although it admits that this potential is not currently being realised. It is attempting to address this by developing a 'Unified e-Learning Strategy', which it hopes to complete by late Summer 2004. The strategy is being overseen by a new department within the DfES, the e-Learning Strategy Unit. The implementation of the strategy began with a large-scale consultation of academic staff, students, industry and ICT providers, which ended in January 2004. A summary of responses was published in April 2004, prior to a final strategy being drawn up.

The DfES believes that a strategic and 'unified' approach to e-learning is necessary because "although there is a lot of e-learning going on already (and the UK is doing relatively well in international terms) it is not the kind of development that individuals or organisations can progress on their own. Just as

there is no point in being the only person with a mobile phone, you cannot achieve the real potential of e-learning until most people are using it"¹. e-Learning is currently not 'embedded' in our teaching and learning, and the DfES believes that it needs to be in order to be most effective for every learner.

In spite of the fact that there is only "emerging evidence that e-learning can help to improve attainment and raise standards"², the Government is convinced that e-learning is the way to take education and therefore the country at large forward. It is backing this up by investing £1 billion in ICT and e-learning in 2006, in line with the Prime Minister's plan to give all schools broadband connectivity by the same year. The Government does however understand that not everyone shares its belief in the commitment to e-learning. It sees a primary purpose of the consultation and strategy process as being to bring e-learning to the attention of education and industry leaders, and to convince them of its ongoing worth.

The Government understands that while there are currently pockets of e-learning in educational institutions and industry, there is no coherent progression towards fully embedding e-learning into the daily lives of children and adults alike. This is the aim of the government, and so they have drawn up "a set of proposals for how education leaders, teachers, learners, employers and commercial suppliers might contribute to the process of change"³. The initial strategy consultation document proposed seven 'action areas':

- Help education leaders tackle the funding models that restrict innovation (Leading sustainable e-learning implementation)
- Support people who want to be innovative in the way they teach (Supporting innovation in teaching and learning)
- Give teachers and lecturers career incentives and training for e-learning (Developing the education workforce)
- Give learners better e-learning support for meeting their personal learning goals (Unifying learner support)
- Make assessment a driver of innovation, not a barrier (Aligning assessment)
- Build a better market for quality assured e-learning resources (Building a better e-learning market)
- Work out the technical standards we should all adopt for e-learning (Assuring technical and quality standards)⁴

The consultation document comments that "each action area applies to every education sector and together will create a system that fully embeds e-learning, and makes it work"⁵.

The DfES considers that 'unity' in e-learning is vital. It is developing partnerships with a wide range of education and industry organisations, research and support groups and professional associations to aid in the development and implementation of the strategy*. It will also be working closely with devolved administrations in Wales, Scotland and Northern Ireland, which are developing their own e-learning strategies and initiatives.

The consultation was responded to by over 400 organisations from education, commercial education and training sectors, who gave "strong endorsement of the detailed proposals"⁶. On each of the 13 questions that asked for opinions on specific proposals, "over 50% agreed" and "less than 10% disagreed"⁶. Generally, the Government believes that the consultation process showed that "there is widespread support for a unified approach to e-learning and for the Department's vision of the strategic use of new technologies to reform our education system"⁶.

There were however, several consistent areas of concern amongst respondents. Key among these was the issue of funding, with "the majority holding the view that the Government should underwrite the cost"⁷. Many believed that funding should be available for the long term and that a "unified funding strategy" should be developed along side the 'unified e-learning strategy'. Interestingly, there was "a consistent belief that education and industry leaders must be convinced of the benefits of e-learning"⁷, suggesting that they are not currently. This is a potential barrier to funding being allocated for e-learning.

In view of the fact that e-learning is intended to benefit every citizen, many were concerned about the

effect of the 'digital divide', which is still considerable in this country. Some respondents pointed out that at present, less than half of UK households have Internet access, with many considering the cost of computer hardware and connection prohibitive, while seeing no benefit in having Internet access. Many respondents believe that broadband connectivity is vital to e-learning, which cuts out those who cannot afford it and those in rural communities who cannot get access to it.

Some respondents also included in the digital divide those with disabilities that prevent them from using conventional computer equipment and those with Special Education Needs. The DfES did try to counter this in the consultation document by explaining how e-learning (if programmed to) can in fact include those who struggle in traditional education, such as the visually impaired, those with communication difficulties and those with specific learning difficulties such as Dyslexia.

11% identified 'techno fear' as a potential barrier to e-learning. This fear can affect all sections of the community and, more importantly, can affect education and industry leaders and teachers. Disinterest among teaching staff for any reason is also problematic, leading to suggestions that incentives for teachers would be needed, such as new qualifications leading to career development and the provision of laptops. The Government is aware that significant development of the education workforce will be required to implement embedded e-learning.

Finally, one very consistent opinion running through the consultation response was that "a blended learning approach [is] essential, combining traditional learning methods with e-learning"⁸. Face to face and group tuition is still considered extremely important.

Notes:

* The British Library and The British Museum are cited in the consultation document as partners in the progressing of proposals under the 'Supporting Innovation in Teaching and Learning' action area.

¹ Towards a Unified e-Learning Strategy Consultation Document, July 2003, p 6

² Ibid, p 10

³ Ibid, p 7

⁴ Bullet points from Ibid, p 8

⁵ Progress Towards a Unified e-Learning Strategy, April 2004, p 1

⁷ Ibid, p 4

⁸ Ibid, p 9

Global e_Learning

For the last 4 years the Economist Intelligence Unit has published 'e-readiness rankings' of the 60 largest economies in the world. 'e-Readiness' is defined as "the extent to which a market is conducive to Internet based opportunities"¹ and includes factors such as "quality of IT infrastructure [and] the degree to which the Internet is creating real commercial efficiencies"¹. In 2003, Sweden and Denmark lead the planet in first and second place, with the Netherlands, the US and the UK coming in joint third.

For the first time in 2003, the EIU (in co-operation with IBM) published 'e-learning readiness rankings' for the same 60 countries. This was in "response to important new trends in Internet usage"² and was defined as indicating "a country's ability to produce, use and expand Internet-based learning - both informal and formal, at work, at school, in government and throughout society"². Sweden again topped the rankings, with Canada in second place and the US in third. The UK was ranked 8th overall. It ranked third in the categories of Education Systems (after Canada and the US) and Government Support (after Sweden and Finland). However, the categories of Industry Usage gave the country a rank of 12th, and Society Usage a rank of 9th. Unlike the e-readiness rankings, the top ten was not dominated by the west, with South Korea and Singapore ranking 5th and 6th respectively.

In its summary of findings, the EIU observed that:

'Without exception, the top-ranked countries in our rankings have several assets in common: a high degree of IT penetration; strong education systems; free markets that

encourage competition and reward-promising Internet ventures; and governments, citizens and business that have all embraced technology on a cultural level. Many of these factors go hand-in-hand with economic development, and it is not surprising that the top-ranked countries are rich. Wealth does not determine everything, however. The world's three largest economies — the US, Germany and Japan — came in 3rd, 17th and 23rd, respectively, while smaller, nimbler competitors placed better.³

In its assessment of the rankings, Learning and Training Innovations magazine noted that:

'Other findings explain how various countries and organizations are beginning to rely on e-learning to bridge knowledge gaps, broaden audiences, and make critical information available on demand. Reasons for embracing e-learning include:'

'In the U.S. — to bridge the knowledge gap the baby boomers will leave behind as 76 million approach retirement

In Asia — to distribute health information for online learning during crises such as SARS, when thousands of individuals are quarantined and the need for just in time learning is crucial

For businesses — to reduce training costs and keep staff skills current

For schools — to reach a broader segment of the population and the meet the needs of mobile and non-traditional students

For governments — to expand educational opportunities to more citizens and to keep employee skills up-to-date with global standards⁴

e-Learning is clearly revolutionising education on a global level, not simply a national one. Increasingly, countries are collaborating on and communicating via e-learning projects in an effort to bring the best possible learning resources to their students and to reduce cultural divides.

Notes:

¹ The 2003 e-readiness rankings, the Economist Intelligence Unit in co-operation with IBM, p 3

² The 2003 e-learning readiness rankings, the Economist Intelligence Unit in co-operation with IBM, introduction

³ Ibid, p 6

⁴ Posted on Learning and Trainings Innovations Magazine

[<http://www.ltimagazine.com/ltimagazine/article/articleDetail.jsp?id=83359>]

Conclusion

Although e-learning is still in its infancy, it clearly has a huge potential to revolutionise and enhance all our futures. As technology becomes faster, more reliable, more affordable and more interoperable, so will e-learning become more and more entrenched in our daily lives. Many still have reservations on the subject in its current state, but few doubt that our lives would be enriched by future pedagogically and technologically sound e-learning. The question is how to get there.

The United Kingdom is extremely well placed to achieve excellence in the field of e-learning, due to the support and commitment of our current Government. However, it cannot be expected to happen over night:

'Embedding e-learning will not happen fast. [The Unified e-Learning Strategy] is a long-term strategy that looks ahead to years when the technology will probably have evolved further. That is all part of the strategy — how we prepare ourselves, through our education system, to cope with an ever-changing world.¹

All parties need to proceed with caution to ensure that we do not end up going down the "education dead ends" that Murphy, Walker and Web mentioned in *Perspectives on E-Learning*. Hopefully, the government's strategic, long-term approach will ensure that this does not happen.

There are still a great many bridges to cross: the digital divide; reliable, compatible technology;

uniformity in the quality of content and assessment; 'techno-phobia' and motivation, not to mention the issue of funding. However, as we have said, e-learning is still in its infancy, and there is time to correct all these problems given the incentive and innovation.

There is much we have to learn about e-learning, but the rewards are equally boundless.

Notes:

¹Towards a Unified e-Learning Strategy Consultation Document, July 2003, P 8

Appendix 1: Ten Tenets of e-Learning

Taken from *The 2003 e-learning readiness rankings*, a white paper from the Economist Intelligence Unit written in co-operation with IBM.

As companies, governments and schools struggle to get [e-learning] right, they can take lessons from those already blazing the e-learning trail.

1. Think big. Piecemeal approaches to e-learning do not work. It is important to examine goals and map out how to achieve them. "You need a holistic approach and an understanding of pedagogy, culture, technology and languages," says Richard Straub of IBM Learning Solutions. For companies, taking a holistic approach may mean linking e-learning programmes to corporate goals. This will make it easier to select e-learning providers, justify costs to management and keep the programme on track. South American oil company Petr leos de Venezuela, for example, needed to cut training costs, and turned to e-learning with that goal in mind. The state-owned firm was able to cut 70% of the cost of traditional, classroom-based training, and expects a return on its investment in just three years.

2. Build infinite infrastructure. There is no e-learning without the 'e'. Capable computers, smart software, high-speed Internet connections and more are needed to support e-learning. "We know quite well today how to make e-learning work, how to manage the process and how to put teaching online," says Mr Straub. "Infrastructure is the big obstacle." Fortunately, new technologies can provide shortcuts. Countries lacking in traditional telecommunications infrastructure, for example, are now considering wireless Internet connections as a way to get people online. Every day new solutions become available — broadband, wireless technology, satellite spectrum — that will allow even the remotest areas to have access to the world's learning institutions.

3. Embrace the 'e'. The traditional lecture hall is revered as a sacred place in which an instructor can create rapport with his students and inspire them through personal appeal. But technology offers its own set of perks. The Internet is a perfect medium for allowing students not only to pose questions to professors but, more importantly, collaborate with each other. Companies, governments and schools should exploit technology so that it enhances — not merely delivers — learning. "If it's only reading online and taking tests online, it is no more than a correspondence course," says Monique Conn of the International Baccalaureate Organisation (IBO).

5. Mix it up. Technology can be a great tool for educators, but it cannot replace them. Experts recommend a 'blended' approach to e-learning whereby classroom time or face-to-face consultations supplement online material. "As good as e-learning is, I don't want to have open-heart surgery from someone who only got his education online and has had no in-hospital training," says Fred Poker, a managing consultant in human capital management knowledge, content and e-learning solutions at IBM Business Consulting Services. At universities in Singapore, for example, students may go to lectures on campus but access course materials or reading assignments online. If courses must be predominantly online, e-mail and Internet-phone features can be used to plug students into a discussion or group project. "Make sure there is a feeling of community where students interact with the instructor and one another," says Ms Conn of IBO.

6. Support standards. Proprietary e-learning equipment and software prevent users from sharing solutions, pooling resources and updating materials in the most efficient manner. Standard ways for cataloguing and organising e-learning materials are the only way to provide universal access. "Just

like we have the Dewey Decimal system for public libraries, we have to develop taxonomies," suggests Mr Poker, by which course materials used in e-learning are organised into online libraries. Groups such as the Advanced Distributed Learning (ADL) Initiative—a collaborative effort by government, industry and academia are making progress in this realm. One of ADL's priorities is an e-learning standard known as sharable content object reference model (SCORM). Complying with this collection of specifications from multiple sources helps governments, businesses and schools develop interoperable, accessible and reusable materials. First released in 2000, SCORM now has support from international groups including the Aviation Industry Computer-Based Training Committee, the Institute of Electrical and Electronics Engineers and the Alliance of Remote Instructional Authoring & Distribution Networks for Europe.

7. Make it modular. Standards can make it easier to develop smart e-learning materials quickly and efficiently. Content developers can transform existing material into any number of e-learning formats: text, video, interactive quizzes and more. The better it conforms to standards, the easier it is to build 'modular' content that can easily be reused. Modular content is also simpler to update if all forms of the material can be updated simultaneously.

8. Pick a partner. Whether you are a content developer who uses a museum's resources, a small business that joins a consortium to help defray infrastructure costs or a corporation that outsources its training programmes, e-learning works best when players partner up. The US Army, for example, has teamed with a host of education, technology and infrastructure-support partners to create eArmyU. Organisations that need e-learning services should continue to focus on their core competence while leaning on a partner for e-learning expertise. For institutions without the resources for heavy infrastructure investments, collaboration is not only helpful, but often necessary. With shared infrastructure, you can achieve economies of scale.

9. Go native. English may be the language of international business, but it is not the world's most common native language. The availability of course material in local languages is critical for e-learning's success, as are culturally adapted teaching methods. In Asia, for example, students tend to hold teachers in high esteem, seldom challenging their professors. Assignments in which they are instructed to challenge the teacher's views are not likely to succeed. North Americans and Europeans, however, often like to question an instructor's premises or conclusions, and may not enjoy a course where they are meant to be passive recipients of lecture materials. The world is filled with cultural nuances that should be accommodated to increase the success of e-learning programmes.

10. Teach the teacher. Instructional methods that work for students sitting in the back row of a science lab may not reach students at the far end of a cable-modem line. The way in which an online curriculum is delivered is new and different, and instructors must be trained to make the most of updated teaching methods. The stakes are high: an ineffective teacher can waste the time of 30 or 40 students. But bad teaching online can touch thousands. We can create mass damage quickly, says Mr Poker. "We have to put into place controls to ensure the validity of online materials."

Appendix 2: Resources

*The 2003 e-learning readiness rankings [http://www-304.ibm.com/jct03001c/services/learning/solutions/pdfs/eiu_e-learning_readiness_rankings.pdf] (PDF)
Economist Intelligence Unit with IBM*

*2003The 2003 e-readiness rankings [http://www-304.ibm.com/jct03001c/services/learning/solutions/pdfs/eiu_e-learning_readiness_rankings.pdf] (PDF)
Economist Intelligence Unit with IBM*

*2003The European e-Learning Market [http://www-304.ibm.com/jct03001c/services/learning/solutions/pdfs/eiu_e-learning_readiness_rankings.pdf] (PDF)
Jane Massy, Tim Harrison and Terry Ward*

*2002Getting Started With e-Learning Standards [http://www-304.ibm.com/jct03001c/services/learning/solutions/pdfs/eiu_e-learning_readiness_rankings.pdf] (PDF)
MacromediaManaged Learning Environment Activity in Further and Higher Education in the UK
[http://www-304.ibm.com/jct03001c/services/learning/solutions/pdfs/eiu_e-learning_readiness_rankings.pdf]*

(PDF)

JISC / UCISA

December 2003 *Management and Implementation of Virtual Learning Environments* [http://www-304.ibm.com/jct03001c/services/learning/solutions/pdfs/eiu_e-learning_readiness_rankings.pdf] (PDF)

UCISA funded MIT OpenCourseWare Program Evaluation Findings Report [http://www-304.ibm.com/jct03001c/services/learning/solutions/pdfs/eiu_e-learning_readiness_rankings.pdf] (PDF)

March 2004 *Progress Towards a Unified e-Learning Strategy* [http://www-304.ibm.com/jct03001c/services/learning/solutions/pdfs/eiu_e-learning_readiness_rankings.pdf] (DOC)

Analysis of Responses to the Consultation Document

DfES

April 2004 *Staff VLE Evaluation results*

Zoë Toft (SOAS)

December 2003 *Student VLE Evaluation results* (PDF)

Zoë Toft (SOAS)

December 2003 *Towards a Unified e-Learning Strategy*

[http://www.edexcel.org.uk/VirtualContent/59385/Towards_an_e_learning_Strategy.pdf] (PDF)

Consultation Document

DfES

July 2003 *Using the Web for Interactive Teaching and Learning*

[http://www.edexcel.org.uk/VirtualContent/59385/Towards_an_e_learning_Strategy.pdf] (zip)

Pat Brogan (Macromedia)

1999 *Virtual Learning Environment Activity in Further Education in the UK*

[http://www.edexcel.org.uk/VirtualContent/59385/Towards_an_e_learning_Strategy.pdf] (DOC)

JISC / UCISA

November 2003 *Virtual Learning Environment pilot at SOAS*

March 2003
