

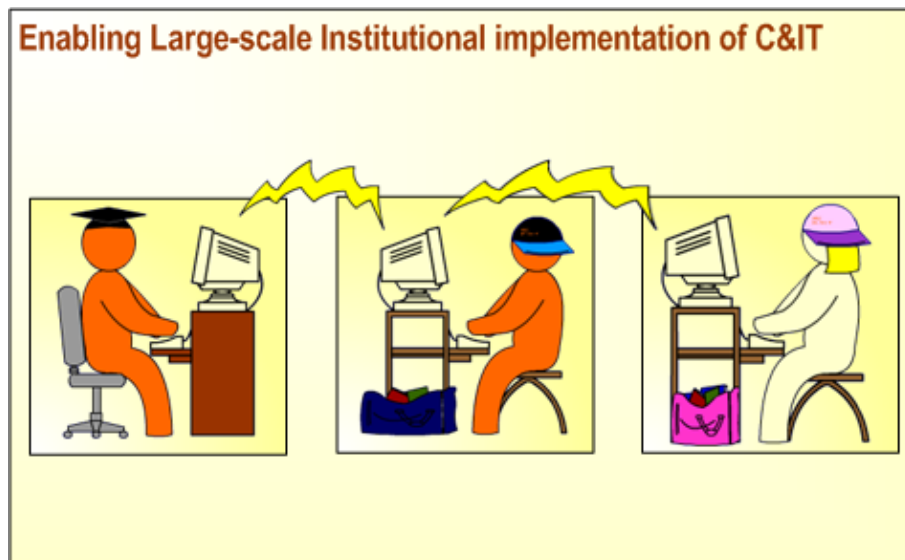
Effective Use of VLEs: Introduction to VLEs

- Virtual Learning Environments
 - Tools in a VLE
 - Different VLEs
 - Advantages of VLEs for Tutors
 - Using a VLE
- Approaches to Course Design with Technology
 - Theories of Learning & Teaching
 - Models of Learning & Teaching
 - What Can We Gain from these Models?
 - Impact on the Roles of Tutor & Student
- The Student Perspective
 - A New Generation of Students
 - Students' Use of a VLE
 - Preparing Students to Use a VLE
- Special Educational Needs
 - Accessibility Features Within a VLE
 - Making VLEs Accessible
 - Resources
- Moving Forward
 - Support Available to the Tutor
 - Available Resources
 - Issues When Using a VLE
- References

Introduction to VLEs

This introductory section provides an overview of virtual learning environments (VLEs) focussing on how they can be used to improve the learning experience for both the learner and the tutor. The potential uses of VLEs for learning and teaching and models of learning are discussed and specific examples of where VLEs may be used to resolve current learning and teaching issues are provided. By the end of the section you should be ready to start thinking about course design.

The section is divided into five parts and throughout there are links to additional materials, readings, case studies and websites as well as a resources section.



As well as a general overview, this section looks at:

- What tools are typically available for tutors in a VLE?
- What are the advantages for you, the tutor, in using a VLE?
- What problems can a VLE solve for you?

By the end of this section you should have a general overview of what a VLE is and some of the issues involved when deploying a course with a VLE.

Some practical considerations

Prior to working through this section, you might like to consider some of the following issues, for you, the tutor:

1. Your access to a 'modernish' computer with Internet connection. You will need time to design and develop a course using a VLE and then time to maintain it. If you do not have easy access to a relatively modern computer with Internet access then this is going to have a severe impact on how quickly and efficiently you work and develop your course.
2. Your skills at using information technology. VLEs are becoming easier to use but you will need to be comfortable with organising documents in folders, using the Web and email. If at all possible, you might also consider getting some introductory knowledge about developing webpages. If you are worried about your skills you might consider getting some training through your institution or taking the European Computer Driving Licence (further information about this is available at: <http://www.ecdl.ie/LatestNews/index.asp>). This will help you when you are starting to use your institution's VLE and reduce the amount of time that you need to spend improving your skills.

Bristol University has developed a quick online guide for tutors to check their understanding of learning technology – <http://www.ltss.bris.ac.uk/interact/22/in22p13.html>

3. Your current commitments.

1. Is it the right time for you?
2. Do you have the time to design a course using a VLE?
3. Do you have the time to deploy a course in a VLE?

Designing and deploying a course in a VLE for the first time will require your time and this will probably be a significant amount of time if it is going to be really effective. You will need to plan both the use of the VLE and the subsequent changes to the overall delivery of your course. After the first and subsequent iterations updating will be quicker and you will only need to set aside time for refinements. However, if you are in the middle of a programme review, an inspection, a course validation, finishing your Master's or PhD or writing up a research bid, it may be better to wait for a few months before starting to use your institution's VLE. It is, of course, all too easy to find reasons why we should postpone change and hopefully this infoKit will encourage you to try something new sooner rather than later.

Resources

The Higher Education Academy's website at <http://www.heacademy.ac.uk/>. The Higher Education Academy works with higher education in the UK and focuses on the student learning experience. It has an extensive number of e-learning resources and subject centres which provide useful information and case studies about e-learning;

The JISC e-learning programme – <http://www.jisc.ac.uk/elearning>

The FERL (Further Education Resources for Learning) website at <http://www.ferl.becta.org.uk/>. FERL aims to provide advice and guidance to ensure effective use of ILT within the Post Compulsory Education sector. It has a number of e-learning resources and case studies;

The SFEU (Scottish Further Education Unit) – <http://www.sfeu.ac.uk> – seeks to raise standards of practice in Scottish further education. We reference some of its materials; access to these is by subscription which your institution may already have.

Alternatively the subject specific Higher Education Academy centres have sections on e-learning on their websites and also in their journals. For example, the subject centre for Hospitality, Tourism, Leisure and Sport provides an overview of the use of VLEs in their subject area at: http://www.hlst.heacademy.ac.uk/projects/haven_report.pdf

Virtual Learning Environments

This section provides a general introduction to VLEs and describes the functionality that is usually available in a VLE to you, the tutor, and your students. The advantages of the integrated online tools in a VLE from the tutor perspective are discussed and a number of scenarios are provided where VLEs may help to solve some issues that you may have as a tutor or a member of a teaching team. Case studies and voices of tutors who have used a VLE are available.

Although many institutions claim to have a VLE, it is perhaps worth checking what is meant by a VLE. As with real learning environments (eg. classrooms, laboratories), a VLE is designed to support and enhance student learning. According to the JISC:

'A VLE refers to the components in which learners and tutors participate in 'online' interactions of various kinds, including online learning.'

However, not all interactions have to be online since a VLE can act as a focus for students' learning activities. Hence, Mark Stiles states:

'a 'Virtual Learning Environment' (VLE) or 'Learning Management System' [is] designed to act as a focus for students' learning activities and their management and facilitation, along with the provision of content and resources required to help make the activities successful.' (Stiles – <http://www.staffs.ac.uk/cital/poznan.html>)

These systems allow students and tutors to interact locally or remotely. They can collaboratively share and generate knowledge in the virtual environment without having to travel out of their local setting (Britain and Liber, 1999; Milligan, 1999).

VLE software is currently being used across most UK institutions to support a variety of different types of learning: for example, collaborative and co-operative, blended and distance learning. A study undertaken in 2005 for the JISC indicates a high take-up of VLE in all types of institutions surveyed (including FE and HE). 86% of FE colleges, 97% of pre-1992 universities and 90% of post-1992 universities report using at least one type of VLE. However, there is a wide variation in subject area usage of a VLE from 16% in Medicine, Dentistry & Veterinary Medicine through to 82% in Business Management, Accountancy, Economics and Law. In other countries, such as the United States, Australia and some European nations, VLEs are more commonly referred to as 'Course Management Systems' or 'Learning Management Systems' (LMS).

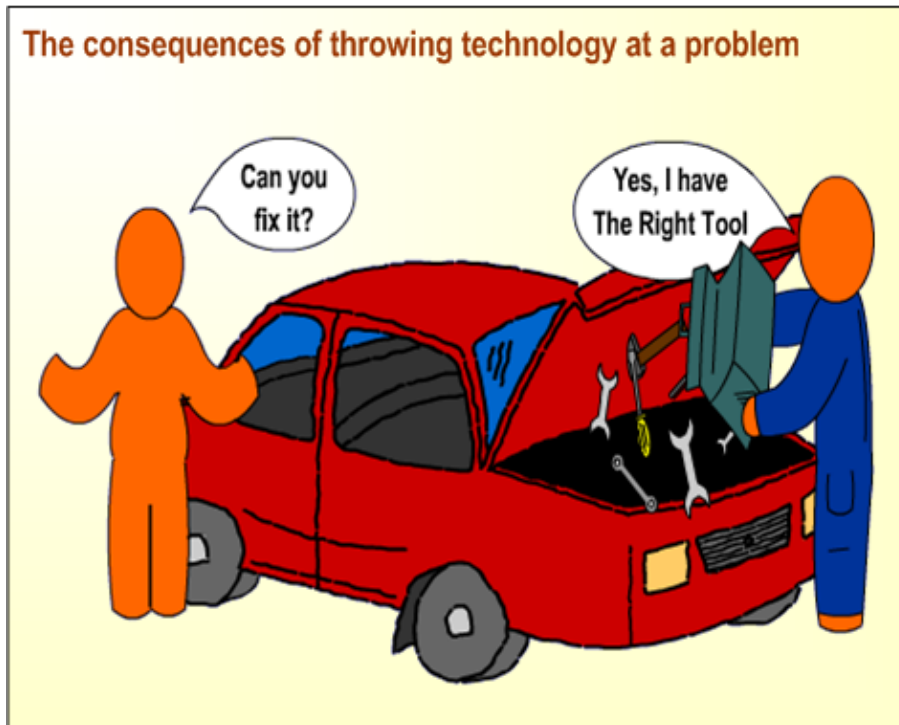
Many commercial VLEs (e.g. Blackboard, WebCT etc) consist of a variety of different tools bundled together into a package. There are also a number of open source software packages available (e.g. Moodle, Bodington, COSE). The JISC e-Learning Frameworks (ELF) projects is producing a range of open source e-learning tools that can be used separately, linked together or used to complement existing software packages.

Often a VLE is linked to other information systems within an institution, eg. library, student records, finance, Intranet. This is often referred to as a Managed Learning Environment (MLE). Students are able to log in once to the system (using one password) and then move seamlessly between one system to another without having to log in again.

There has been considerable confusion regarding VLEs and MLEs. To clarify, a VLE focuses on learning and teaching and is usually a specific piece of software. MLE is a conceptual term for a whole range of different software, systems and processes that interrelate, share data and contribute to the management of the learner experience. By its very nature there is no one definition of an MLE – the tools, processes and services bundled together depend on the institution's vision.

For more information about MLEs, visit our [Creating an MLE infoKit](#). To view the results of a Think Tank on MLE issues see the [When Worlds Collide Publication](#). The [FERL website](#) also contains useful resources in this area.

Tools in a Virtual learning Environment



A Virtual Learning Environment is a collection of integrated tools enabling the management of online learning, providing a delivery mechanism, student tracking, assessment and access to resources.

Typically VLEs integrate the following tools:

These tools can support student learning in a number of ways.

Communication

Firstly, they support communication between students and tutors, between students and students or across student groups through synchronous (or real-time) chat and asynchronous online discussions tools. Students can use these facilities to build upon their existing knowledge and create new ideas through online debate and discussion. Some discussion areas can be linked to course material and online quizzes and self-tests. Further information about [online communication](#) is available in this infoKit.

Other communication tools include online calendars, diaries or timetables. These can provide an overview of key events during courses and might include submission dates for assessments, reminders about TV/radio programmes to watch/listen to and additional meetings (online or face-to-face). The calendar can also be linked to other areas within the VLE, such as course content.

Some VLEs may have email facilities which can be used for communicating on a one-to-one or one-to-many basis. Using an email system within the VLE has the advantage of keeping messages about the course separate from other email communications. However, usually students log on to a number of other email systems, including their institutional account. Therefore students may not wish to access the VLE email account and learn to use yet another system. To overcome this problem, some institutions have linked the VLE email with institutional email, so that students and tutors only have to check one account.

Assessment

Secondly, VLEs have tools for formative and summative assessment. Self-tests can be used by students for quick concept-checking and 'formative' feedback. Quizzes can provide guidance for both the tutor and the students; the results can highlight key areas that have not been fully understood by the student and which the tutor or teaching team can then cover in later sessions, online or face-to-face. Tutor feedback provided in these assessment tools is a key element in helping students develop an understanding of a subject; it is essential that tutors provide comprehensive feedback and not just indicate whether a question is 'right' or 'wrong' ([Juwah, MacFarlane, Matthew, Ross, Nichol & Smith 2004](#)).

Students can submit assignments within a particular area of the VLE. This can be set up to indicate the time and date of submission. Assessment marks can be released to students (individually) online. Further information about using [online assessment](#) is available elsewhere in this infoKit. This is particularly relevant for distance learning students. An example of the use of the dropbox is provided in the [FERL case study](#) by Pat McCann.

Collaboration

Thirdly, there are tools that can support collaboration within and across student groups. For example, the file upload facilities in a VLE allow tutors and students to share resources by moving learning materials (for example articles, notes, images, PowerPoint files, etc) into the VLE. This can be achieved by dragging-and-dropping the file into a designated area within the VLE.

Whiteboard software is a useful way of 'visualising' ideas and concepts. This software allows students to draw images collaboratively or, alternatively, to upload images and discuss them using chat facilities (text or audio communication) while simultaneously viewing the image. This software is particularly useful in design education, eg. the visual arts, architecture and engineering.

Other facilities

Other facilities which may be available in a VLE include student tracking which will provide tutors with information about when a student first accessed a course, how frequently they have accessed it and which areas they have accessed. It is essential that students know that you have access to this tool and you may also want to check with your IT department regarding their security and intervention policies.

VLEs can be linked (either directly or via a web link) to other online learning tools, which are not part of the VLE, for example concept mapping. These may provide further functionality, eg: [WriteNote](#) which is a referencing tool for students. This software is housed on the WriteNote server but can be linked to course materials and online discussions. Turnitin is a tool for checking accurate citing and helping to prevent plagiarism. For generic advice and guidance on all aspects of plagiarism prevention and detection, including Turnitin, visit the [JISC Plagiarism Advisory Service](#)

Also, VLEs can link directly to your institution's Library or Learning Centre. This may be to your Library's catalogue, to resources that your librarians/learning centre teams have developed or to digital libraries.

Further information about the tools within a VLE is available on the [FERL website](#).

Different Virtual Learning Environments

The tools and functionality available to the student and tutor vary from VLE to VLE, for example, you may find the tools in the VLE that you are using are more or less extensive than those

mentioned in the previous section. Some VLEs have been produced by commercial companies, others by universities. In the UK, [Blackboard](#), [Learnwise](#), [Teknical's Virtual Campus](#) and [WebCT](#) are the most commonly used commercial products. [Bodington](#), [COSE](#) and [Merlin](#) developed by UK universities, have also been adopted in the sector. [Moodle](#) (Modular Object–Oriented Dynamic Learning Environment) is an open–source VLE that has many similarities to the commercial products and is being used by some institutions in the sector. [SAKAI](#) is an open source VLE developed in the USA.

[OSS Watch](#), a JISC funded service, gives advice and guidance on open source software. [Support Models for Open Source Deployment](#), the second OSS Watch conference has a number of articles relevant to OS VLEs and [Top Tips for Selecting Open Source Software](#) provides tips and further resources links.

FERL has further information in its paper '[VLEs: Beyond the Fringe and Into the Mainstream](#)' about purchasing an open–source or commercial product. Whilst making your choice of VLE, you should remember that staff engagement with technology depends on reliable systems with familiar layout and symbology (Glenaffric Ltd, JISC funded report '[Case Studies of Managed Learning Environments in Further Education](#)').

JISC infoNet provides advice and guidance on [System Selection](#).

Britain and Liber provide an overview of VLE usage between 2001 and 2003 which shows the growth of VLE–usage and the different VLEs that are being used (diagram updated to include data from 2005):

Diagram produced by courtesy of Britain and Liber and the Landscape Study

When considering the above table, the following differences in the data sets should be borne in mind when making a comparison: The 2001 survey only included HE institutions, but the 2003 survey results were obtained across HE and FE institutions. Thus, for example, First Class still has a higher level of use in HE institutions than in FE, but the combined data from both types of institution would indicate a drop in use. Learnwise is much more commonly used in the FE sector and so the apparent rise in the level of use of this system is skewed by inclusion of FE institution data only in 2003.

Two websites provide a wide range of comparative information about VLEs. These focus on the functionality of VLEs:

Chest has developed a [comparative grid](#) of five VLE products (BlackBoard, FD Learning, LearnWise, Virtual Campus, WebCT and Wizlearn). This offers information on the products, type of licence, requirements, costs and maintenance issues.

EDUTECH has further comparative information about VLE products. The website is supported by the Federal Office of Education and Science, the Swiss University Conference and the University of Fribourg.

Although these websites are updated on a regular basis, it is always worth checking that they have the current version of the VLE that is being described.

Britain and Liber (2004) have also produced a [framework for pedagogical evaluation of e–learning environments](#). They provide us with a 'rich picture of current tools, systems and architectures designed to support e–learning.' Each system is described from the course, learner and programme/institution perspective.

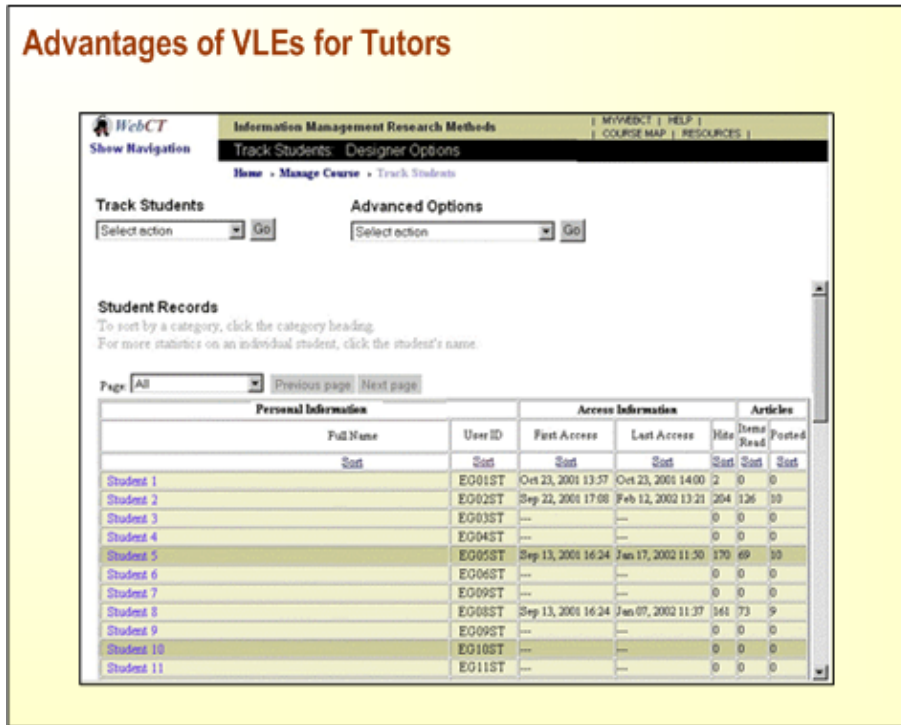
In addition, **FERL** has produced a [model](#) to evaluate learning platforms.

Advantages of Virtual Learning Environments for Tutors

The advantages for tutors using a VLE centre on improving the learning experience and using the tools within a VLE to help with the management and administration of the course.

Administrative Tools

Tutors can benefit from the 'administrative tools' within a VLE. Many VLEs provide information to staff about how often and when students have accessed a VLE through the tracking tool. They may also provide information about when and what they have read in the online discussion area.



For distance learning students, tutors can track if students are engaging with the online communication and associated materials. The assessment dropbox allows students to submit assessments virtually. These are collated and time-stamped by the VLE ready for collection in one area by the tutor. After marking, feedback can rapidly be distributed to the students individually, through the VLE. However, a drawback is that many VLEs do not allow submission which supports anonymous marking.

Collaboration and Communication

A VLE also offers tutors tools to encourage collaboration and communication. For instance, a VLE can provide a virtual space where students, staff and other learning support specialists can discuss, interact, share learning, ideas and materials. For example, Continuing Professional Development students may work together on a specific case study before loading their summary into an online discussion. This summary can be compared with other summaries posted. The feedback will draw upon a wide range of working experiences which can then be related to the specific area of discussion. This draws on the experience of the whole group which is particularly useful in multi-disciplinary courses.

Active Engagement

It is often difficult to find time or a way to ensure students actively participate in face-to-face sessions. Through online discussions it is possible to help students engage more actively with a

course and with the learning process at a time and place that is convenient for both tutor and student – see [LEAP Case Study 12](#) which shows that discussion can motivate students to learn in new ways and encourage students to join in. Part-time students often find difficulty in working in groups with full-time students studying on the same course especially when this requires face-to-face meetings at the institution. A VLE provides an area to work together without the necessity of physically meeting.

Community of learners

The result of this collaboration and communication may be to develop a unique space which the student cohort builds into its own identity and community: a community of learners. Case studies have shown that VLEs are particularly good at bringing people together and creating what Wenger (1998) would refer to as a community of practice. Regardless of physical location and time zones, VLEs will allow you, the tutor/s, to create an area where your students can develop an area to listen and debate key areas for their studies at a place and time convenient for them as indicated in [LEAP Case Study 9](#) (which shows that distance learning students can greatly benefit from using asynchronous online discussions to deepen their knowledge and create a community of practice) and [LEAP Case Study 11](#) (which showed that a community of practice can develop between distance and campus-based students).

Signposting

Through careful course design, tutors can support the communication and collaboration in a VLE with specific signposting and access to a vast array of up-to-date, multimedia, interactive online materials for students. This can be material that is developed by the tutor, for example, lecture notes, diagrams and images. It could include links to web resources, the institution's online library resources, web resources developed by publishers for core texts, online articles, graphics or searchable online databases. These resources will need to be linked to the online activities in the VLE, may offer a focus for students who need additional support, provide a gateway for those who will be studying at an intensive level or encourage those who wish to study at a higher level. It is also extremely helpful for students to have all their course information including timetable, regulations, past exam papers and administrative information in one place and from one authoritative source.

Saving Time

There is much debate as to whether VLEs save time for students and tutors. In the case of lectures, a VLE can help you to change the focus of your time since much time is lost through students copying complicated diagrams and references and general administration; these can be transferred to the VLE. It will also reduce time required for photocopying.

However, as you will see from the course design section, designing a course to use a VLE requires planning time. Nevertheless, once you have created your materials online, you can easily update them with a few mouse clicks. Adding a new online resource, a clearer colour image, a new relevant case study can take a few minutes. It does not require you typing up the material, photocopying and then distributing to students. If you are careful in your planning, you can use and re-use the materials in your VLE in many and different ways as indicated in the section 'Designing for Sustainability'.

Advantages from the student perspective are discussed further on in this section.

Using a Virtual Learning Environment

So far we have discussed the integrated online tools (focussing on collaboration, communication and assessment) that are available within a VLE and the advantages they provide for tutors. This

section provides some specific examples of how a VLE may help you, as a tutor or a group of tutors, to overcome problems that you may encounter in your day-to-day teaching environments. We provide a number of vignettes and outline how a VLE may assist student learning.

Scenario 1: reducing face-to-face contact time with students

Your institution has decided that all teaching staff must reduce the overall amount of contact time that they spend with students. This means that the teaching team will see the students about 70% of the time that they do currently in face-to-face sessions. You are extremely worried about the impact this will have on the student learning experience:

- How will you cover all the curriculum in the appropriate depth?
- How will you know if your students have understood the ideas in sufficient detail?
- How will you have time for the students to work through case studies and provide sufficient feedback?
- How will you ensure that problem areas are quickly identified and resolved?

In these circumstances, through careful course design, you can use the VLE as the centre of the learning activities for the students.

Initially, you will need to develop a number of online activities. For example, online discussions can be used to prompt students with questions before or after the face-to-face sessions. The online sessions can lead to debate and provide opportunities for feedback. You can also ask groups of students to summarise lectures, take responsibility for leading discussions and to ask a 'question of the week'. All members of the teaching team including learning centre staff or librarians will be able to provide support for students through the online discussion.

Online quizzes and self-tests can be used for concept-checking and probing of students' level of understanding. These activities will provide you with vital information about areas and concepts that the students find difficult and which you will need to cover in more depth in the face-to-face sessions. The assessment dropbox could be used for formative feedback. For example, groups of students could provide an outline of how they would solve a specific case study problem.

A large amount of materials especially complicated diagrams, formulae, case studies, past exam papers (with model answers) and related theories could be held within the VLE. You may also wish to develop a narrated PowerPoint with other members of the teaching team or experts from the field. The students could access these materials independently and especially in preparation for your face-to-face sessions. The reduced face-to-face sessions can be used to present key themes, guide the students through the activities and the materials in the VLE and work through case studies.

This is an example of how a VLE can be used for blended learning. The course design impacts on the face-to-face sessions as well as online delivery. [LEAP Case Study 2](#) provides an example of using the online medium to deliver content and activities which are closely linked to practice and clinical activity. This blended approach has had benefits for students as well as staff. To quote from a 2001 QAA institution audit report, "*The students...believed that the provision of VLEs was an important supplementary feature of their learning.*". The QAA commended this University on its Learning and Teaching Strategy.

Scenario 2: students won't discuss

It is extremely difficult to ensure that all students contribute in face-to-face sessions. However, some students may find discussing online more comfortable – it gives them more time to think about their response and allows them more anonymity than the face-to-face environment.

It is possible to use online facilities to encourage discussion, for example, by setting up a role play. In this case you may ask students to take specific roles around a scenario, for example, the difficulties of writing an essay. Students would then work in pairs and take a defined role, for example, the tutor, the study skills support tutor, the student, the friend, the student from the previous course. The debate continues online over a specific time period. Your role, as the tutor, is to facilitate the debate and ensure that all pairs become involved. You may also want to call upon the student support at your institution to respond to the debate.

This ensures that everyone contributes and that there is a record for reflection after the event. It is also possible to continue the online role play in a face-to-face seminar or vice versa. A case study which uses cmc in law for student debate prior to a face-to-face role play is described in '[www-based negotiation exercises](#)' from Warwick University. Further information about [online discussions](#) can be found elsewhere in this infoKit.

Scenario 3: additional readings and materials

Students come from increasingly diverse backgrounds and you, as the tutor, may feel that they do not have the appropriate grounding in the subject area that you are covering. You may use the VLE to provide formative quizzes or links to areas where students can ensure that they have a solid background. In this way, students do not have to admit that they do not know the core concepts and ideas of a course; as the tutor you can monitor those using the quizzes and identify those who may need further assistance.

Scenario 4: students complain they are not marked on their efforts in group work

One thorny problem that recurs with group work is the perceived fairness of marks; students often feel that they have worked harder than others in their group but they all receive the same mark. One way for students to show how much work they have contributed is by using the online discussions in a VLE and creating a student presentation area. Here students communicate with each other about their group work and show their contributions in the student presentation area. You will have access to all these areas and will be able to use their postings to help inform your marking.

Scenario 5: decreased library/learning centre budgets result in less access to paper-based materials

Students (especially part-time) often complain that it is impossible to access text-based materials on loan in the learning centre or library. No matter how many books and articles exist and how many of them are on short loan, the grumbles continue. With mounting debts students are also reluctant to buy anything but the most essential texts. Unfortunately libraries' overall budgets are often not being increased. In this case, you may want to provide a wide range of electronic materials as links from your VLE. It is worthwhile talking to your librarian and finding out how you can use the online journals and databases available. This will also improve access since many students have very limited (if any) time to visit the library.

You might also consider using [HERON](#) if it is available at your institution. (HERON offers a national service to the UK academic community for copyright clearance, digitisation and delivery of book extracts and journal articles. In addition, HERON has also developed a resource bank of digitised materials for rapid re-use (subject to copyright permissions). Therefore, HERON will allow you to hold a digital copy of an article in your VLE course. However, pricing depends on the article, length of time required for access and numbers of students. Don't forget that many textbooks now have associated web pages with quizzes and extra materials. Sometimes a textbook may have a CD-ROM associated with it. It is worth checking with the publisher if you could hold this material in your VLE. Your librarian may also be able to help with this.

Some of the VLE producers such as [WebCT](#) and [Blackboard](#) are producing learning and teaching materials (often referred to as e-packs). For example, WebCT has a learning zone which holds material that can quickly be imported into a course in WebCT. Sometimes there is a small fee in using these materials.

The [National Learning Network](#) (NLN) is a national partnership programme designed to increase the uptake of Information Learning Technology (ILT) across the learning and skills sector in England. Supported by the LSC and other sector bodies, the NLN provides ILT materials for teaching and learning.

Scenario 6: encouraging reflection in work-based learning

Many students (full and part-time) undertake a period of work-based learning, for example, placements. These may be short or long-term and can have a profound positive or negative impact on students.

A VLE may be used to prepare students prior to undertaking a VLE with FAQs, short video clips of students talking about their work-based learning experiences or employers discussing their expectations. VLEs can also hold students' CVs and provide an information repository for forms required during the placement.

During the placement, the online discussions can be used for specific reflective exercises. These may assist students in making the time to think about their work-based experiences and linking this with their studies within the institution. For example, students may be asked to compare their knowledge of health and safety with its application in the work experience. (The LTSN has encouraged exploration [of the role of VLEs in placements](#).)

Scenario 7: students don't read enough and in enough depth

One of the constant concerns for tutors is that students do not read enough during the course and do not read in enough depth. You can use the VLE to provide signposting to high quality resources, subjects gateways and research papers. To encourage active reading, you can ask students to work in pairs/groups and allocate them some specific readings. This can be summarised in the online discussions or loaded into the collaborative area. You can then allocate another pair/group to respond to the summary. Other students may respond to these messages. To encourage participation, formative or summative assessment may be used. You do not need to respond to each message but provide a summary of the messages, focussing on the key issues. You can also ask students to start a tutorial/seminar with a summary of their postings.

Examples of tutors using VLEs

Three tutors who have used a VLE discussing the issues in using learning technologies explain about their use of a VLE to support their students. They emphasise how they use a VLE for their particular teaching environment and the benefits for them and their students. Follow the links below to read their thoughts:

[Tutor 1](#)

[Tutor 2](#)

[Tutor 3](#)

Virtual Learning Environments Summary

A VLE:

- Is web-based and accessible to both students and tutors through a web browser on any computer connected to the Internet anywhere, any time;
- Organises students into virtual classes, with individual, secure, logins;
- Comprises a range of integrated online tools that aims to support collaborative and co-operative student learning;
- Provides a focus for student learning activities;
- May support on-campus delivery (typically referred to as blended learning) or off-campus delivery (distance learning);
- Has a wide range of benefits for tutors including improving the learning experience (through using the collaborative, communication and assessment tools) and assisting in course management and administration;
- Has the flexibility to support a range of learning scenarios but needs careful and thoughtful course design to ensure that the VLE is used to its fullest.

Further information about VLEs is available on the [FERL website](#) in the technology for e-learning section.

Tutor 1: Clinical Effectiveness for Continuing Professional Development

What's so good about a VLE for Clinical Effectiveness?

I like using WebCT because it helps me to support learning at a distance. The flexibility in both delivery of materials and support for students makes it particularly suitable for adult professional learners – adult workers want to dip in and out of learning whenever and wherever is convenient to them. The flexibility of the online environment also means I can reach a wider selection of learners.

There are real benefits for students – they can communicate across disciplines, and across LEA and NHS regional boundaries. Also the students can access as and when they please, giving them more control over their learning.

Which tools are being used?

The Introduction – home page: I wanted a clean and uncluttered design of the homepage which means easy navigation and avoids complication for the students. Everything is visible and yet neatly organised with icons that are instantly recognisable. This page is important to help the students orientate themselves. Essentially they can see everything that they need on this page. I don't like using time release of materials because I like them to see everything at the beginning of the programme to let them organise their own learning.

Content: the content icon links directly to the first page of the materials, providing an impetus for the students to begin studying. The table of contents is still accessible, however, allowing the student to re-enter where they left off.

Discussions: this is the central part of the module, with much of the synthesis of learning taking place as the students discuss the problems set by the tutor. For me the discussion area is essential for online learning and is what sets a VLE apart from learning on a website.

Quizzes: I use the quiz tool summatively. The final assessment is delivered online and marked automatically. Formative assessment is a combination of the quiz tool, self-test embedded in the content, and feedback in the discussion area.

There is also a link to a feedback survey, which the majority of students have filled out.

What feedback have you received?

Of the 31 students that have completed the course, 29 have submitted feedback. Only one of those was negative in that the student found working with IT very difficult and would not wish to study in this manner again. The rest were very happy to continue with this type of learning and most found the environment easy to use.

The main advantages for the students were that the module raised their perceptions of the other professions represented. They found they shared problems and methods of working across professional boundaries. They also found it increased their IT awareness and abilities. They were all amazed at the ease of use.

How has it changed you?

Working with WebCT has changed the way I work. Specifically it has changed the way I manage messages in the discussion area. Now I read all the new messages in a block and take notes on a pad as I do so. This allows me to summarise and recap in a single posting. This saves me a great deal of time and avoids me repeating myself. It also helps me to encourage my students by publicly recognising those that have made valuable contributions to the discussions.

At the beginning of the session, I have a welcome message and then I ask the students to do a specific task by a specific time. This is also set out in the calendar.

What hints and tips could you give us?

Planning – The main thing I advise is to define what it is you are trying to do before beginning the planning process, and to hold this in mind throughout.

Planning, timeframe and materials all need to be considered before WebCT can be used, and it requires a lot of pre-thought. It is not possible to improvise online as it is in class. Everything must be planned beforehand, meaning there is much less flexibility for the tutor but that you are more organised and more considered.

What else would you do?

For the future, I am planning to change the formative and summative assessments to make them more investigative and challenging. I am probably going to remove a pre-test which was set up to give learners a trial run before they sat the final assessment. I can in fact now build trial runs into the final assessment.

Tutor 2: using a Virtual Learning Environment in Psychology

What's so good about using WebCT for Evolutionary Psychology?

There are 2 main reasons. The first is that I hate printing and photocopying lecture notes and WebCT allows me to upload them as I go. The students can then print them out if they want to. Secondly the use of the Group Presentation tool helps to avoid problems that have arisen in the past, such as 'So-and-so' is not contributing to the group work. I had wanted the students to use it as more of a group meeting point, making it easier for me to track contributions, but in the end it was used more for administration level discussions, rather than to discuss academic matters.

Being able to track students allowed me to deal better with failure to participate. I was able to remove students from groups, forcing them to re-engage with others in order to meet the module assessment criteria. This did, of course, depend on each circumstance.

Another benefit is that the materials uploaded by the students are accessible by me, allowing me to re-use web links, articles and such-like.

The students were split between those that found it useful and those that thought it was a bit pointless. However, those groups that used it more than others tended to be the groups with students from different courses and modules who wouldn't normally get the opportunity to meet during the week.

The site is also a resource for students to be able to review their work when preparing their essays at the beginning of semester 2.

What Tools have you used and why?

Group Folders were a good way for the students to access and collaborate online while allowing me to track their involvement.

Discussion tool was part of the process and although I wanted it used for more academic discussion, the students found it useful to administer their group work.

Content Module: I only lecture for the first 5–6 weeks, and then the students work in their groups. The content module allows me to upload material as we go and include other resources as I find them. Because Evolutionary Psychology is a relatively new discipline, much of the available materials are on the web and informal. It also means there are many interesting resources such as video and radio broadcasts which can be uploaded onto WebCT.

How has it changed the way you teach?

Practically it has allowed me to do things in real time. I tell the students to check WebCT twice a week and that allows me to convey information to them and know they are getting it. I don't have to rely on them checking a notice board, and I can check they are accessing WebCT through the tracking tools. This allows me to correct misunderstandings quicker and to identify knowledge gaps and make adjustments as I am going.

As we move to a more learning focus, I think of it as a much better resource. It allows students to study independently, and I don't have to spend time photocopying resources.

Also it helps with my confidence, because you do doubt yourself sometimes. You wonder 'Did I really tell them that?' or 'have I done the OHP's for week 2?' WebCT allows me to check my own performance and keep a track of what I'm doing.

What hints or tips could you give us?

Staff have unreal expectations of how much time is required to develop a module for WebCT, and of how much students will engage with it. The reality is that some students still do not have computers at home, and as a resource for on-campus modules there is a limit to how much the students need to use it. There has to be an incentive, on top of that for class attendance, for the students to enter WebCT.

What else would you do?

If I had the time I would like to use more innovative technologies, such as creating interactive tutorials with RoboDemo and RoboPresenter, but in reality these are not made a priority.

I could put all my lectures on WebCT as the module is not lecture driven. The information I give out in the lectures could be delivered online and would save me repeating myself. It would also allow me to use more interesting media such as video and audio.

Tutor 3: Using a VLE in Radiography

What do you use WebCT for?

Delivering support material for modules, e.g., module contents; lecture notes; lecture presentations; glossary of terms to assist with the understanding and spelling of a new vocabulary; hyperlinked list of approved online resources related to each section of the module; recommended reading list; list of relevant journals and hyperlinked electronic journals; notes on the correct construction and citation of references; reiteration of assignment requirements and submission deadlines.

Allowing student self-assessment, e.g., multiple choice questionnaires that can be marked electronically and accessed as often as required.

Providing discussion areas for student groups.

Delivering distance courses.

What do you think has been the driving factor in your continued development of new WebCT modules?

The fact that these facilities are available to the students at all times, even on clinical placement where hard copy hand-outs are often lost or not available when a student is in a position to study.

Once the information is uploaded, the lecturer hands the responsibility for learning over to the student.

Directed study can be focussed, reducing the student/staff contact hours required.

WebCT provides an additional learning environment which can only enrich the student experience and be of benefit to students with different learning styles.

WebCT is useful for students with special needs, i.e., the visually impaired, hearing impaired, dyslexic, and those whose first language is not English. The flexibility of the system allows the release of lecture notes and overheads to these students in advance of each lecture, allowing them to assimilate the information in their own time.

How has using WebCT changed the way you teach?

Less time is spent reinforcing concepts in class as the students are encouraged to use the WebCT resources in their individual learning.

Students are expected to be better prepared for class as learning objectives are listed for the following week of the module.

Hard copy handouts are not used as students can print out from WebCT if required.

Less formative assessment needs to be marked as the self–assessment is self–marking.

Self–assessment attempts can be monitored to highlight any areas of general misunderstanding that can be pursued with tutorials.

Each of your modules is different, and you use a variety of WebCT tools and materials. Which are your favourite and why?

The glossary tool is wonderful for helping students become familiar with new vocabularies in particular modules, e.g., radiation protection, research methodologies, anatomy and physiology.

The use of self assessment tools means that the students can test themselves as and when they are ready rather than all at the same time as in other formative testing. This is an advantage for both the more able and the less confident students. The former can move on at their own pace whilst the latter can spend as long as required and make as many attempts as required. In addition, the module coordinator can view the history of attempts to monitor progress and plan future lectures/tutorials.

Continuity of thought is improved by the use of hyperlinks to suggested online resources. This provides immediate access to other sources of information related to the topic under investigation. The alternative, providing a student with a list of websites on a handout, would require the student to stop what they are reading, find a computer and type in all the URLs in turn.

What hints or tips would you give someone who was thinking of using WebCT for the first time?

The initial effort of designing and uploading material is well worth the time as the resource is then available to be updated and uploaded year after year.

It is worth starting with a basic WebCT module as it can be expanded as the students get more used to accessing it and the designer develops more skills.

If you had the necessary time, how would you develop your existing modules?

The students who are used to seeing WebCT modules expect to have this resource for all modules. A more integrated approach to electronic delivery of information in Radiography would be desirable. As more staff are becoming trained in WebCT and have access to Front Page on the new staff desktop, this may be achieved.

The use of WebCT to collect student module evaluations would be of great benefit, especially if the analysis can also be done online.

What have been the main advantages and disadvantages of WebCT?

Advantages

- Continuous accessibility of resources for students.
- Ability to update and add material without having to print and photocopy for handouts.
- Archival record of material delivered and student use.

Disadvantages

- Some students do not enjoy using electronic resources and do not contribute to group discussions, disadvantaging themselves and the group.
- Any downtime on the server.

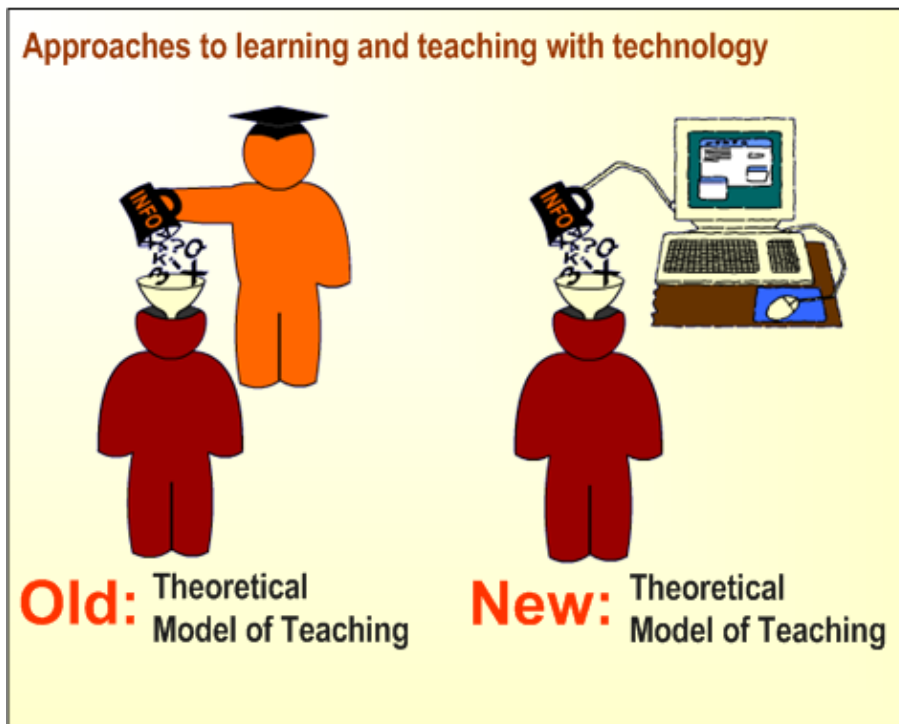
What feedback have you received?

The use of a WebCT module can be monitored to determine the number of students, frequency of access and most popular pages of the resource.

Student module evaluation asks about electronic resources and the feedback has been favourable for the WebCT modules.

Approaches to course design with technology

Traditionally models of learning adopted by tutors have tended to focus on what the tutor does rather than on what the student will do in order to learn. These models portray face-to-face meetings in which the tutor is seen to 'pour' information into the students' heads by talking about important concepts, ideas and facts. Unfortunately, this allows few, if any, opportunities for the students to ask questions and start to formulate ideas. Early forms of computer-assisted teaching mirrored this model of teaching, with the tutor being substituted by a computer. This often led to online courses that concentrated on materials and content rather than what the student was doing. The result was that students were not fully engaged with the online learning process and perceived webpages and areas developed in VLEs as an 'add on' or an adjunct to their learning but not essential.



More recently, models about the use of online learning including VLEs have focussed more on the students than the tutor.

In this section the work of some of the most influential thinkers in the field of learning with technology is discussed.

As you are working through this section on course design, it is essential to be reflecting on:

- The reasons you intend to use a VLE especially the intended benefits for you, the tutor, and for your students;
- The different ways in which the VLE will assist your students achieve the learning outcomes of the course;
- The student activities you are going to use in the VLE;
- The content you will need to support these activities;
- Gathering student feedback.

You may also wish to work through [materials](#) produced at Cranfield University as a background to this unit and the online book, '[Theory and Practice of Online Learning](#)'.

Theories of learning and teaching

In the past, many early adopters of VLEs explored the possibilities of the technology at a basic level. For example, they frequently used the VLE to allow students to access and download supplementary learning materials – similar to an electronic filing cabinet. Although this may have some benefits for your students, it is not harnessing the full potential of the VLE.

Sigala (2002) in her overview of the evolution of Internet pedagogy describes this as the first stage in the use of e-learning; at this stage many tutors use e-learning including VLEs to provide a web version of their classroom activities. In other words, tutors 'webify' their face-to-face sessions. Unfortunately, the impact of this transfer of the didactic, transmission approach to learning and teaching from face-to-face to web-based instruction is very limited. What's more, an ad hoc approach to course development within a VLE is inefficient: you may spend a lot of time on developing materials for your course in a VLE for little reward. To get the best out of your VLE, it is worthwhile thinking about the underlying theory of your approaches to learning and teaching and

how they can best be exploited for you in the VLE.

One of the best places to start is the Seven Principles of Good Practice in Undergraduate Education developed by Chickering and Gamson in 1987. They point to the following characteristics of teaching–learning as being especially valuable for improving learning outcomes:

1. Encourage student–staff contact;
2. Encourage co–operation among students;
3. Encourage active learning;
4. Give prompt feedback;
5. Emphasise time on task;
6. Communicate high expectations;
7. Respect diverse talents and ways of learning.

Steve Ehrmann and Arthur Chickering later wrote an article about how technology can be used to advance each of these principles. The following outlines how the collaboration, communication and assessment tools in a VLE can support you in each of the Seven Principles of Good Practice.

Using a VLE to support the Seven Principles of Good Practice

Encourage student–staff contact	A VLE can help contact between tutors and their students through the communication tools in a VLE. Students can post messages at a time and place convenient for them. For example, tutors can set up a QAarea in the discussion board (in some VLEs this could be anonymous) which tutors read and respond to on a regular basis.
Encourage co–operation among students	The discussion tools can be used to encourage student co–operation in small or large groups, face–to–face or online. Areas can also be created in a VLE for students to share work. For example, groups of students can have a private area where they develop their group presentation. They may choose to work together face–to–face and then load their work into the VLE for others, including the tutor, to review.
Encourage active learning	Through careful course design, focusing on student activities, you can encourage active learning. For example, before loading materials into the VLE, think about what you want the students to do and how these activities will help fulfil the learning outcomes. For example, if you want them to review a poem from World War 1, you would divide the class into groups and ask them to review the poem from different perspectives: from the reader, the poet, the narrator, the friend. These could all be housed in the VLE with groups commenting on each other's work.
Give prompt feedback	The assessment tools including quizzes and the assessment dropbox assist timely feedback. Quizzes can provide a wealth of feedback for students. Not only can they inform students if the answers are correct but they can provide pointers to further study, hints and tips and links to additional readings.
Emphasise time on task	By using a VLE, to link to Library resources and online resources, students can spend time working through activities that you have developed rather than searching through shelves and surfing the web. This means they focus on the task rather than getting the materials for the task.
Communicate high expectations	As the tutor, you can use a VLE to show what you expect of your students. With agreement from students, you can use examples of previous students' work to show the level of work that you expect and why.

Respect diverse talents and ways of learning	The online discussion area can be used to build a community of learners which shows how the diverse talents of its learners can all contribute to everyone's learning. For example, a distance learning programme in marketing can call upon its students from all over the world to provide examples of how they would market a product.
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There are a number of current models of learning dealing specifically with the use of learning technologies in learning and teaching. Many of these are based on the early work by Vygotsky (1962). In his theory of the Zone of Proximal Development (ZPD), Vygotsky observed that children learned skills more effectively when they were working in collaboration with an adult. This was not always due to the adult teaching them how to perform the task but the process of engagement with the adult which enabled children to refine their thinking or their performance to make it more effective. These observations formed the basis for constructivist theory in which these ideas have been expanded and can inform adult learning.

In his essay on constructivism, Doolittle (1999) maintains that constructivist learning can lead to a set of pedagogical principles:

- Learning should take place in authentic and real–world environments;
- Learning should involve social negotiation and mediation;
- Content and skills should be made relevant to the learner;
- Content and skills should be understood within the framework of the learner's prior knowledge;
- Students should be assessed formatively, serving to inform future learning experiences;
- Students should be encouraged to become self–regulatory, self–mediated, and self–aware;
- Tutors serve primarily as guides and facilitators of learning, not instructors;
- Tutors should provide for and encourage multiple perspectives and representations of content.

These principles are reflected in the models of learning and teaching with technology in the next section.

Linked to constructivism, is the idea of 'scaffolding'; this is a term used to describe the ways in which we help students build their understanding of a concept (hence use of the term 'scaffold'). A common example is when the tutor helps a student to work his or her way through a problem by asking questions. The tutor is, in effect, building a scaffold to support the student's learning. Scaffolding can exist at different levels of cognition. These include:

- Conceptual – at this level, we guide the learner in understanding concepts by providing explicit hints and examples. Examples include helping the student think through a problem by asking him/her questions.
- Metacognition – at this level, we may guide the learner in how to approach a problem. Examples include supporting the student in constructing a strategy for tackling a problem (eg the student is asked to plan a scientific experiment that will address a particular problem).
- Procedural – at this level, we guide the learner on how to use information. Examples include guidelines and tutoring (eg the student is guided in how to use a map).
- Strategic – these guide the learner in analysing and approaching the problem with a strategy.

Models of learning and teaching

Two models of learning that have been developed specifically for learning and teaching with technology are Mayes Conceptualisation Cycle and Laurillard's Conversational Model. A third model proposed by Salmon focusses on computer–mediated communication. Finally we consider

the work of Biggs.

Mayes: The Conceptualisation Cycle

Mayes states that learning with technology involves a cycle of conceptualisation, construction and dialogue. In an article written by [Mayes & Fowler](#), Mayes examines how different learning activities support students' understanding of new concepts and the revision of erroneous concepts. This is achieved in three stages, known as the Conceptualisation Cycle.

- At the conceptualisation stage, students are exposed to other people's ideas or concepts (for example in traditional face-to-face sessions or accessing content on the WWW).
- At the construction stage students apply these new concepts in the performance of meaningful tasks.
- However, it is only at the dialogue stage, in the performance of tasks in which these new concepts are tested during conversation with tutors and peers, that learning takes place. The feedback provided enables students' erroneous conceptions to be resolved.

Mayes suggests that each of the three levels of learning activity can be supported by three different classifications of courseware, or online material intended to promote students learning, into three categories:

Primary courseware is used to support, for example, online lecture notes, reading lists etc, which are a good way of giving students information. For example, look in the classroom or library sections of the [Health Education Cyberschool](#). Also, if you have access, take a look at the SFEU module on copyright.

Secondary courseware supports students in performing a task. For example, computer assisted assessments in which the student is asked to answer questions. Examples of this include computer-aided assessments or online tests. For example, look at the quiz from the [SFEU](#) on copyright.

It is only at the level of Tertiary Courseware where there is two-way dialogue that learning can occur. Examples include online discussions, videoconferencing and shared workspaces where feedback is extrinsic and online simulations. For example look at [the Virtual Microscope at the Open University](#)

It is useful to begin developing online materials at the primary level. However, Mayes stresses that focusing too much on primary courseware will not provide sufficient support for learning. In order to ensure that learners are supported at all three levels of the conceptualisation cycle, a variety of teaching methods need to be within the course design. High level learning will not take place until there is two-way dialogue (either tutor to students, peer student dialogue, or the sort of internal dialogue which may go on within a student's head). This can only take place at the tertiary level – either using courseware or face-to-face methods of learning which are integrated with technology enhanced teaching.

Although it is useful to begin by developing primary courseware, it is important for tutors not to stop at this stage but to continue development to the level at which student learning can occur.

Laurillard's Conversational Model

Professor Diana Laurillard, Chair of Learning with Digital Technologies at The Institute of Education, University of London, and formally of the Open University in the UK, is one of the leading researchers in the application of technology to learning and teaching. Laurillard developed a conversational model, based on earlier theories of Vygotsky, in which dialogue between tutor and student is seen as central to learning. Laurillard stresses that, for higher level learning, dialogue

must take place at both a theoretical and practical level. This not only enables students to link theory with practice (which is sometimes difficult to achieve in many subjects), but also allows the tutor to evaluate whether or not he or she has set appropriate tasks for the student.

One of the major characteristics of this model is the way in which the student and tutor interacts. In face-to-face teaching, many of these interactions are so spontaneous and intuitive that they can be overlooked in the design of technology supported teaching. Therefore Laurillard made these interactions explicit. Technology can support these interactions in the following ways. It can be:

- narrative – this involves the telling or imparting of knowledge to the learner;
- interactive – this is based on the outcome of the learning. The tutor provides feedback to students based on the outcomes of tasks students undertake in order to help consolidate learning and improve performance;
- In addition, the tutor uses this information to revise what learning has occurred and, if necessary, change the focus of dialogue (adaptive);
- Communicative/discursive – the tutor supports processes where students discuss and reflect upon their learning.
- The tutor and student agree learning goals and task goals, which can be achieved using 'productive' media, such as online presentations.

A full account of this theory, Laurillards' Conversational Framework, is in her book, 'Rethinking University Teaching'. These ideas were reflected on in a keynote presentation at the Association for Learning Technology conference in September 2000.

Gilly Salmon: 5-stage model and e-Moderating

For computer-mediated communication (CMC), Salmon has proposed a highly practical five-stage model based on her own research (see table below). The first two stages of Salmon's model focus on acclimatising the learner to the online environment and developing a supportive social environment. The third stage 'information exchange' is characterised by learners interacting with course materials and activities online and providing each other with further resources. In the fourth stage, 'knowledge construction', we see learners working collaboratively sharing ideas, posing problems and challenging each other in a spirit of enquiry. The final stage leads participants to take responsibility for and reflect on their own learning. The role of the tutor – the moderator – is essential to the design and implementation – supporting, encouraging, focusing to ensure all learners meet the intended outcomes.

<p>Stage One: Access and Motivation</p>	<p>For this first stage, it is critical that the tutor ensures that the learner can easily and quickly access the online conference, often in a VLE. Usually this will be to ensure there are no technical problems, for example, with passwords. Technical support is critical at this stage as the learner can easily become frustrated. Simultaneously the tutor needs to ensure that the learners understand the need to put time and effort into the online activity. All the learners will need to know why they are accessing the online conference and what they can receive from it.</p>
<p>Stage Two: Online Socialisation</p>	<p>During this stage, learners need to become comfortable in the online environment and to socialise with each other. There are a number of barriers which may inhibit this:</p> <ul style="list-style-type: none"> • the embarrassment of making a mistake in front of other participants; • the text-based nature of CMC can be daunting; • it is a new and strange environment for many;

	<ul style="list-style-type: none"> • lack of non-verbal and visual cues. <p>Salmon in 'e-tivities' provides a number of online activities that can help new learners in the online environment become comfortable and ready to talk and collaborate online. It is essential to create an environment where learners feel respected and show respect to each other. Salmon states that this stage is over when learners have started to share a little about themselves online.</p>
Stage 3: Information Exchange	Usually this stage of the conference is characterised by the fast and furious exchange of messages. The learner will interact with the resources in the VLE such as weblinks, databases, case studies and fellow learners. One of the issues at this stage is information overload and some learners complain about the messiness of the conference. The role of the tutor is to give some structure and to keep things organised. It is critical that the tutor does not respond to all messages at this stage but summarises and focuses the online discussions. Some learners at this stage may move away from the 'social' stage but it is essential that it remains for some, for example, through an online student cafe area where students can discuss without the tutor.
Stage 4: Knowledge Construction	The main focus is building an online community focusing on learning, at this juncture. The tutor will be relating messages back to concepts and theories and encouraging other learners to respond. The tutor will be summarising but also moving the group along to new subjects and topics when appropriate. At this stage, the tutor may also be sharing the leadership with learners.
Stage 5: Development	It is at this stage where we clearly see Salmon's link to constructivism. The online learners are taking responsibility for their own learning and becoming more confident and critical thinkers. The focus is on high-level learning with the tutor encouraging the learners to discuss concepts and ideas at a deeper level.

Further information about [Salmon](#) and her '[Five stage model](#)' can be found on her website.

What can we gain from these models?

The educational models described in the previous section provide a framework to help guide your thinking while designing courses using a VLE. Each of these models provides just one way of viewing how you could design a course using a VLE – so your design will be based around a single model.

Example 1 – using Mayes' model

For example, if you were to design a course based around Mayes' Conceptualisation Cycle you may start off by considering how your course fits with his view of primary, secondary and tertiary courseware. It may be useful to outline this in a table. For example, a short course in which students are asked to read articles on Mayes' theory and discuss their ideas could be outlined as follows:

	Activities for students	Feedback/dialogue	Resources
Primary	Students can access course readings	No explicit feedback	Article1.doc and Article2.doc Can be downloaded from the VLE
Secondary			

	Students asked to read articles 1 and 2 and discuss (in groups) the importance of vicarious learning	Feedback from peers through the online discussion and from the tutor who is moderating the discussion	Discussion forum (within the VLE)
Tertiary	Students asked to create a short course which will allow for vicarious learning. They present their ideas on how vicarious learning will occur in class by creating a PowerPoint slide show within the VLE. The students then discuss ideas online with peers and the tutor using audio-conferencing or a discussion board.	Feedback from peers and the tutor during discussions	Slide shows uploaded to coursework area within the VLE Discussion forum (within the VLE) or audioconferencing

Example 2 – using Salmon's model

The same course could be planned using Salmon's model. In this case, you would focus on each of the five steps and may map out your course as follows:

	Activities for students	Feedback/dialogue	Resources
Stage 1 Access and motivation	Students asked to logon to the VLE	Tutor ensures students can logon and access all areas of the VLE	
Stage 2 Online socialisation	Students asked to introduce themselves and respond to at least two others	Welcome message from tutor and from other students	Discussion forum within VLE
Stage 3 Information exchange	Students asked to post the URL of their favourite course website and say why they have singled it out. They then respond to at least two others.	Responses from tutor and from other students	Discussion forum within VLE
Stage 4 Knowledge construction	Students asked to read articles 1 and 2 and discuss (in groups) the importance of vicarious learning	Feedback from peers through the online discussion and from the tutor who is moderating the discussion	Article1.doc and Article2.doc Discussion forum (within the VLE)
Stage 5 Development	Students asked to create a short course which will allow for vicarious learning. They present their ideas on how vicarious learning will occur in class by creating a PowerPoint slide show within the VLE. Students discuss ideas online with peers and the tutor using audioconferencing or a discussion board.	Feedback from peers and the tutor during discussions.	Slide shows uploaded to coursework area within the VLE Discussion forum (within the VLE) or audioconferencing

Note that the Salmon model focuses on ensuring your students build the skills necessary to interact online, whereas the Mayes' model focuses on interaction and dialogue. It is important that you as the tutor consider which model is the most appropriate for your course and for your students.

Constructive alignment: John Biggs

John Biggs' idea of constructive alignment (Biggs, 1999) has been one of the most significant in learning and teaching in tertiary education. This approach asks:

'What do we (as the tutor/s) want students to be able to do as result of learning?'

The basis of this concept is that learners construct their own learning through appropriate activities. Therefore the role of the tutor is to develop a learning environment which can support the activities that assist the learners to meet the desired outcomes. In other words:

'How can we as the tutor/s align the planned learning activities with the learning outcomes?'

Success is dependent on the alignment of:

- the curriculum;
- intended learning outcomes;
- teaching methods used;
- assessment tasks.

The alignment process involves:

- defining the intended outcomes
- selecting teaching/learning activities likely to help and encourage students to attain these outcomes
- Engaging students in these learning activities through the teaching process
- Assessing students' learning outcomes using appropriate assessment methods

(The Higher Education Academy, 2002)

There are a number of resources on Biggs' work on the website of the Higher Education Academy. These can be found by searching the resource database. The Higher Education Academy's subject centre for Engineering also has a very pragmatic introduction at: http://www.engsc.ac.uk/er/theory/constructive_alignment.asp.

It is therefore essential when you are developing your course in a VLE to focus not only on developing materials but on the learning activities that will help assist your students' learning and meeting the learning outcomes of the course.

The impact of VLEs on the roles of tutor and students

When applying these theories to the design of your course in a VLE, it will certainly have an impact on you, the tutor, and the style of your teaching. Using a VLE will provide you with an opportunity to think about how you teach and how you facilitate your students to learn. You will probably find that you will become more of a guide for students as they become more independent learners. Since you are providing activities and materials for students to use online, the students will usually take more charge of their learning at a time and place convenient for them but simultaneously will look to you for advice and guidance especially in the early stages of the course. You will also find yourself working more in a team with support staff from the Library, IT and other tutors. This can be very exciting but it can also be rather challenging to let go of the comfortable and the familiar.

Goodyear (2002) has developed a number of indicators that show how the tutor and student roles might be expected to change when moving into an online environment, for example, a VLE. These roles include:

Changing tutor roles

- From oracle and lecturer [tutor] to consultant, guide and resource provider;
- Teachers become expert questioners rather than providers of answers;
- Teachers become designers of learning student experiences rather than just providers of content;
- Teachers provide only the initial structure to student work, encouraging increasing self-direction;
- Teacher presents multiple perspectives on topics, emphasising the salient points;
- From a solitary teacher to a member of a learning team (reduces isolation sometimes experienced by teachers);
- From total control of the teaching environment to sharing with the student as fellow learner;
- More emphasis on sensitivity to learning styles;
- Teacher-learner power structures erode.

Changing student roles

- From passive receptacles for hand-me-down knowledge to constructors of their own knowledge;
- Students move from memorising facts towards solving problems;
- Students view topics from multiple perspectives;
- Students devise their own questions and search for their own answers;
- Students work as group members on more collaborative/co-operative assignments: group interaction significantly increased;
- Increased multi-cultural awareness;
- Students work towards fluency with the same tools as professionals in their field;
- Increased emphasis on students as autonomous, independent, self-motivated managers of their own learning;
- Discussion of students' work in the classroom;
- There is a change in emphasis from receiving information from the teacher and learning to 'pass the test' towards using knowledge;
- Emphasis on developing effective learning strategies (both individually and collaboratively);
- Students have greater access to resources.

The University of Glamorgan found that the success of their collaborative e-learning project rested upon an integrated team involving all the University's support departments working alongside the Business School from the beginning. For many staff this way of working can be strange exposing them to new and different concepts, new ways of working and challenging traditional boundaries (Jones & O'Shea, 2004).

For some tutors these changes are challenging and exciting but for others they are more threatening. It is worthwhile talking to colleagues who have used a VLE and discussing the impact that it has had on their role as a tutor and the student response.

This case study from Fermanagh College shows how in using a VLE you can engage with your students more effectively (available as a video in [Windows Media Player](#) and [QuickTime](#) formats, as a [transcript of the video](#) and a [case study pdf document](#)).

Summary of Approaches to Course design with Technology

In this section, we have drawn upon the key thinkers in using technology in learning and teaching. All the models are based on constructivism and emphasise dialogue between the tutor and the students. It is essential for you, the tutor or member of a teaching team, to be comfortable with your preferred model before proceeding to course design using a VLE. Further advice about preparing to develop a course in a VLE is available within this infoKit and also in an HE Academy Resource

The Student Perspective

Students think very differently now from the ways students thought ten or twenty years ago; their attitudes to and expectations of learning and teaching especially with technology are also very different (Oblinger, 2003; Haywood et al). This section discusses:

- Changes in student attitudes to IT and IT in learning and teaching;
- Student use of Virtual Learning Environments;
- Changing student roles in a VLE;
- Introducing a course with a VLE to students.

A New Generation of Students

Student attitudes to and skills in IT have changed considerably over the last 10 years. The Edinburgh University Survey (Haywood et al, 2004) indicates that in 1990 educational use of IT was predominantly male and limited to word-processing. Their work suggests that by 2003 most students are skilled in IT, own their own computer and that gender differences are small and declining. Most use IT in their social and recreational lives; this is mainly based on email but also includes shopping and banking online. These findings are mirrored in student usage of IT in Edinburgh's European partner universities (SEUSS, Report 2002) and supported by recent surveys that indicate that younger students now expect to be in 'constant connectivity' with friends and family. Almost all of them use email and instant messaging to contact friends (DfES, 2002).

Increasingly students expect technology to have a significant role in their learning (DfES, 2002, Becta, 2002, Haywood et al, 2004). For example, most teenagers currently use the Internet to help them with their homework. However, students often see IT as a supplement to traditional teaching and do not wish to lose face-to-face tutor input which is considered the preferred mode of learning.

Frand provides us with 10 attributes of today's students who he refers to as having an 'information age mindset' compared to those who were born over 40 years ago who have an 'industrial age mindset'. These attributes significantly impact on learning and teaching, for example:

- students prefer a 'trial and error' approach to learning (strongly influenced by their use of computer programs and games) rather than the linear approach (learn the theory, review examples and then apply the theory) which is the mainstay of much teaching in institutions;
- students expect education to emphasise the process of learning rather than the content since the shelf-life of information is so limited;
- students want to be part of a community for learning and social support and expect to have access to that community on almost a 24/7 basis.

Diana Oblinger develops this theme further in Learners, Learning and Technology, Educause Review Sept/Oct 2005.

It is important to remember that not all students will be confident with IT and will need support to work effectively using a VLE. This is discussed more fully in a later section 'Preparing students to use a VLE'.

Students' Use of a VLE

Edinburgh University's study indicates that over 50% of their current students use their VLE at least 2 – 3 times per week.

Most students use a VLE to access resources, for example, tutor notes from their face-to-face sessions, PowerPoint presentations online, handouts, course information, additional links and high-quality digital readings (Crook and Barrowcliff (2001), Haywood et al (2004), Conrad (2002)). Students see this as a way of organising their study hours more effectively (Moore & Aspden, 2004). Easy access to these resources did not discourage them from seeking other resources but inspired them to search for others. In comparison, there is limited use of online discussions and interactive features, for example, simulations, online movies and quizzes. Research shows that students want VLEs to provide more information, for example, PowerPoint presentations and digital readings (Haywood et al, 2004).

There are two problems with this approach. Firstly, by placing emphasis on content delivery, many tutors spend a great deal of time designing and producing new learning materials and uploading these within the VLE. This is an expensive and unsustainable strategy. A second problem is that this approach does not make use of the most powerful aspects of VLE systems: their ability to support collaborative student learning and providing an environment for students to complete the necessary learning activities to meet the learning outcomes. VLEs can be more effectively used to support students in sharing materials, and reflecting upon and integrating new ideas into their existing knowledge. Further discussion on this area is available in the [Communication Tools](#) within this infoKit.

Changing student roles

As indicated in a previous section (The impact of VLEs on the roles of tutor and students), VLEs can have an impact on student and teacher roles.

The SOLE (Students' Online Learning Expectations) project investigated the changes that occur. SOLE looked at students' usage of VLEs in higher and further education and explored the effectiveness of VLEs in supporting different subject areas and student learning in general. The research was carried out at several UK universities and FE colleges, covering a broad range of subjects with diverse online learning requirements. The project showed that there was only a limited change in student roles but now although the tutor is still seen as central, students are adapting to VLEs and using it to support and guide their learning. This is clearly linked to the ability of the tutor to move to a more egalitarian role with shared responsibility and control (Timmis & O'Leary, 2004). The final report is available from the [SOLE Project Website](#).

A study by Frederickson et al (Frederickson 2005) at University College London found that web-supported learners become more independent, taking responsibility for their learning – 'Participants in the web-supported sessions seemed motivated to take responsibility for directing and assessing their own learning while participants in the lecture sessions appeared, without question and despite the lecturer's best endeavours, to vest these roles and responsibilities in the lecturer'.

You need to consider this changing role and the associated expectations when designing your learning activities and resources.

Preparing Students to Use a VLE

When you are designing your course using a VLE it is important to think about how you are going to introduce this way of learning to your students. Research suggests that students can struggle in this environment and drop-out rate can increase unless there is a thoughtful induction (Lynch, 2002). Moore & Aspden (2004) indicate that students will use a VLE when they know why it is being used and how it will benefit them. Students are not negative or particularly positive about using a VLE but need it to have an explicit role and that needs to be explained and reinforced by the tutor, [for example](#) in the student's attitude towards the tutor's use of Blackboard.

Some of the issues that you may consider when introducing the use of a VLE to your students include:

Access to a reliable computer

Although the majority of students are likely to have access to a computer and the Internet, it cannot be assumed that all students will. It is important to liaise with your IT department regarding the facilities for students to access computers within your institution. Make sure your students know about these facilities since lack of or restricted access will have a significant impact on the use of the VLE by your students (Williams, 2002).

IT skills

Although many students will have adequate or more than adequate IT skills to access your course on the VLE, there may be some who will feel ill-prepared to be learning online. This may include older or international students. Studies indicate that pre-conceived ideas about information technology skills being a barrier were not substantiated; students found VLEs easy to use and a way of developing their confidence with information technology (Moore & Aspden, 2004). Nevertheless, some students will need help. You may need to offer signposting for areas within your institution which provide help in improving information literacy skills, for example, study skills centres or learning centres. In addition, you will probably want to circulate guides about how to access and use the tools within your VLE.

If you are using tools within a VLE that require specific IT skills, for example, synchronous chat, it is important to check that everyone in the group has similar ability in typing (neither too fast nor too slow) since this can lead to students dominating the discussion or feeling disenfranchised.

Learning with a Virtual Learning Environment

Many students, especially those physically attending a course delivered at an institution, have a very traditional perspective of education. Therefore, the introduction of a VLE and the associated changes in their role as a learner, may not fit comfortably with their expectations. For example, they may perceive the requirement to function as an independent learner a type of abandonment and feel isolated (Howland & Moore, 2002). Also, they may have previous or current experience of using a VLE which focusses on a more content-based approach to learning and teaching and this may cause complications. Students may find it difficult to combine a new approach to learning in your course with other courses which use a VLE for a more traditional role.

At the beginning of the course, you may wish to give students advice about being an independent learner, changes in their role and using a VLE. You will need to explain about how using a VLE will change their face-to-face sessions and what you expect from them in the VLE. In some cases you may decide to provide further guidance on independent learning and study skills which may be in collaboration with your study skills centre at your institution.

Benefits for students

It is worthwhile providing the students with an overview of the benefits that using the VLE will have for them. For example, there may be organisational benefits: you can help students plan their time for studying during a course if a timetable, activities and related materials are available on a VLE from the first week of study. This will help them organise work, family commitments and plan time for studying. Also, by using a VLE, a tutor can plan for distance or blended learning, reducing face-to-face sessions and students' travel time to classes.

From the learning perspective, a VLE can accommodate different student learning styles, for example, some students will find learning online easier by engaging in an online discussion as

opposed to face-to-face discussion. In addition, a VLE can provide opportunities for practice and recall when convenient for students, especially without others seeing the mistakes they have made. They can find the appropriate materials they need in the format they like since VLEs can accommodate a wide range of learning materials especially through their use of multimedia (graphics, audio, video) and their ability to allow the user to create their own learning journeys (for more information, look at the SFEU materials; writing for online learning, section 1, learning styles). Finally, they can receive immediate feedback, for example, in simulations and quizzes rather than waiting for the tutor to respond in the face-to-face session.

A VLE can allow learners to learn more and faster, by fully utilising the administrative tools of the VLE, streamlining communications and refining tutor feedback to learners. This enables learners to focus upon learning-related tasks (Kvavik and Carvso, 2005).

You may also want to emphasise that VLEs can also improve the face-to-face learning environment. If students know that materials are on the VLE, it means they can listen and think more in the class than worry about catching every single word in a face-to-face session as seen in [LTSN LEAP Case Study 4](#).

It also means they will have more time to ask questions and work on materials with you in a more active learning environment in the face-to-face sessions.

Introductory activities

Research indicates that introductory activities especially involving online discussions can have a positive impact on active participation (Ellis & Llewellyn, 2004). In your introductory session, it is essential that you provide a rationale for your use of the VLE including the benefits it will have for your students, ensure that they can access the VLE but also provide an introductory activity. This may be using some of the online quizzes or the online discussions.

Summary for The Student Perspective

Many younger students have an information age mindset; they are 'digital natives' rather than 'immigrants' and use ICT in their studies and for recreation and social activities (Haywood et al, 2004). This means that they expect 'total connectivity' – when they want and need it – through email, internet relay chat and mobile phones. In their learning they have a preference for doing rather than knowing and can readily multitask. Most of them are extremely comfortable with IT and the Internet and do not perceive computers as technology.

Research indicates that students are mainly positive about VLEs but they need to know its purpose. There is a tendency for students to focus on content and materials hosted in the VLE; in the Edinburgh survey when asked about other uses (besides providing content) for a VLE, the answer was often 'don't know.' Students have a limited knowledge about what a VLE can do for them. As Haywood et al (2004) state there is a need to increase student awareness of the full potential of online learning if it is to be fully accepted. Therefore, students will need guidance, especially in the early part of a course, into how to use the VLE for active learning.

Not all students will have a positive attitude to VLEs and may feel that using a VLE is taking them out of their 'comfort zone' – it may not meet with their expectations and previous experience of how they learn and how they want to learn. In addition, they may not welcome the changes to the face-to-face sessions which move away from a more didactic approach. A clear introductory session explaining the rationale for the use of the VLE and signposting for support is essential.

Resources

British Education and Communications and Technology Agency (Becta) (2002) – [ImpaCT2](#)

Department for Education and Skills (2002) – [Young People and ICT](#)

[Effective networked learning in higher education: notes and guidelines](#)

JISC, as part of their e-learning programme, are conducting a [learner consultation](#) on effective pedagogies for e-learning.

[SEUSISS Project](#) (2002)

[Students Online Learning Expectations Project](#)

Special Educational Needs

One of the advantages of using a VLE is that it can provide 24-hour access for students who are unable to physically attend a course or unable to work during the allotted hours the course is delivered in. It can also help to accommodate, with a small degree of planning and forethought, those with special needs. Used without planning and forethought on the part of the administrators and the tutors who populate it, however, it can be an impenetrable barrier to many students.

The Disability Discrimination Act (1995), in particular Part 4 as amended by the Special Educational Needs and Disability Act (2001) – ([SENDA](#)), has affected all aspects of life in tertiary education (for further information see Willder, B. (2002) 'Disability legislation: implications for learning technologists in the UK' in Phipps, L., Sutherland, A. and Seale, J. '[Access All Areas](#)'). This imperative has been heightened by the [Disability Equality Duty](#). Not only do you need to ensure that your [physical spaces and buildings](#) are accessible to those with mobility and vision impairments, but also that your teaching and online material (including that within a VLE) is also as inclusive as possible. By inclusive, we mean something designed so as to be accessible to all users, regardless of impairment.

The couching of the DDA in general phrases such as 'less favourably', 'reasonable adjustments', 'substantial disadvantage' and 'anticipatory' created a sense of anxiety in some while others recognised an opportunity to take a more learner-centred approach and evolve good practice. There has been a distinct shift in recent times away from a rigid standards-based approach to electronic materials and towards a more holistic approach that discriminates between delivery mechanisms, content and context, focusing more on the learner's experience than meeting any checkboxes and guidelines.

If we make the distinction between the vehicle of delivery and the context of use it becomes possible to distinguish quite separate issues requiring quite separate guidance.

Vehicle of Delivery

The VLE is the mechanism by which all resources will be stored, shared or otherwise delivered – i.e. the actual VLE package (for example: BlackBoard or Moodle).

In January 2003, TechDis undertook a survey to consider the position and documentation of VLEs with regard to accessibility. The [full report](#) is available on the TechDis website and is reprised in Cann, C., Ball, S. and Sutherland, A. (2002) 'Towards Accessible Virtual Learning Environments' in Phipps, L., Sutherland, A. and Seale, J. '[Access All Areas](#)'

The survey covered seven off-the-shelf VLEs and asked the suppliers of each for details of the product's accessibility and the work being done by the developers to enhance this. It indicated that most VLEs still need further development before they are completely accessible for a majority of disabled students. WebCT and BlackBoard were at the time leading the field in terms of accessibility features within their products and assistance offered via their websites. The position is consistently improving, but even now the responsibility still lies with the person creating the learning materials and putting them into the VLE to make them as accessible as possible within the confines of what the VLE will allow.

Following on from the research outlined above, TechDis undertook a user testing trial in conjunction with the Royal National College at Hereford, using WebCT and BlackBoard. Students who were hard of hearing, dyslexic or with motor or vision impairments tried carrying out simple learning tasks within the VLEs, such as uploading assignments, accessing a discussion facility, creating a home page and accessing a multiple choice quiz. If they used screen reading software (a package that converts what is displayed visually on-screen in words into 'spoken' words) such as JAWs or SuperNova, this was incorporated into the trial.

The results of the trial

The results of the trials showed that students using screen readers initially needed a great deal more support to overcome problems with navigation and actually accessing content. Most students spent three quarters of their task time actually undertaking the task in hand, and one quarter accessing the necessary information. In comparison, for students using screen readers the figures were almost reversed, with only a third of the time being spent on actually undertaking the given task. This emphasises therefore that the mere availability of assistive technology does not immediately mean that your students using that technology will be able to access a VLE without problems. However, students with other needs (such as using a screen magnifier for example) were able to operate within the VLE relatively successfully. The trial also showed that, however many difficulties the students had encountered, they still enjoyed the experience of interacting with the VLE. The message to tutors is to use the VLE to its fullest and try a range of methods to ensure access for all.

Context of Use

Materials within the VLE will have a wide range of uses and contexts. Some will be specifically designed to be delivered in an online environment, others will be materials from lectures or classrooms that have been put up for students to refer to later. Some audiences are highly specialised and their needs known (such as password-protected modules) and others are publicly available. There are essentially four scenarios with relation to how the accessibility of materials within a VLE needs to be viewed.

Scenario 1. Materials created specially for online purposes, audience unfamiliar (e.g. a basic 'introduction to maths' course utilised by several faculties for first year students, or an online key skills support course). Because you have no idea of the needs of your students and will not be able to interact with them face to face, the highest technical standards need to apply in this arena. It may well be worth procuring specialist assistance to ensure the materials are as inclusively designed as possible. In this instance the guidelines for web content accessibility will be a useful aide and benchmark.

Scenario 2. Materials created specifically for online purposes, audience familiar (e.g. resources created specifically to encourage online discussion between a known set of students, or resources delivered to support the write-up of fieldwork). Because of the online nature of the materials high technical standards need to be applied, but where you know your audience it is possible to utilise resources that are inaccessible to some groups if they add value for some users without detracting from the experience of others.

Scenario 3. Materials created for a face to face environment, audience unfamiliar (e.g. a visiting speaker's supporting resources). Basic accessibility concerns should be addressed but potentially more important is the presenter's skill in engaging with a broad audience with a variety of needs, for example in describing the content of a slide where visually impaired learners may be present.

Scenario 4. Materials created for a face to face environment, audience familiar (e.g. supporting resources for lab or seminar activities, resources for use in a lesson with an interactive whiteboard). Basic good inclusive practice should be employed in conjunction with experimentation with new types of media and resources that will make the material more accessible to all learners. Resources that work well for some but not others should still be used if more appropriate alternatives are available for those who need them.

When you are thinking about creating materials for your course that will be placed within a VLE, it is worthwhile considering:

- the extent of the accessibility features within the VLE;
- the assistive facilities for students at your institution.

For example, if your students have network access to a screen reader such as JAWS, then it would be an obvious adjustment for you to make your materials as compatible with JAWS as possible, and to offer alternatives when this is not possible. Similarly it may be possible for students at your institution to apply their own 'roving profile' to whichever PC they are using at the time; this means they can apply their chosen colour scheme, font size and type and so on, to whatever material they are viewing (providing the materials has been created in a way that allows them to do this). Contact your IT or student support departments to determine what facilities are offered to students. You could ask support staff at your institution to give you a demonstration of a screen reader. You can experience what it is like to have a screen reading actually reading some material from your VLE; this will give you some idea of the difficulties that can occur if materials are not created with accessibility in mind. It is also possible for you to download an evaluation copy of JAWS onto your PC so that you can check your materials yourself before they go live.

When you have discovered what technologies are available for students at your institution, the TechDis Technology Database) can be used to discover more about the technologies.

Making VLEs Accessible

There are many things you can do to make your VLE-based materials accessible for a wider range of users. Some of the checks you can employ are outlined below:

Area	Checks
Navigation	<ul style="list-style-type: none"> • Remember not to use confusing terms – if the VLE has 'forward' and 'back' features, don't also use 'forward' and 'back' to move between pages of your material – use 'next page' or 'next module' instead. • Remember sometimes users cannot 'see' where they currently are within the VLE, so remind them by putting an explanatory title or heading at regular intervals. • Some users cannot use a mouse, so try moving around your materials just by using the Tab and arrow keys – can you do it? Can you check option boxes and access drop-down menus using just the keyboard? It should be possible within most VLEs to enable features like these.
Keyboard Dexterity	

	<ul style="list-style-type: none"> • Some users can only hit one key at a time – are there places in your materials where two keys have to be pressed simultaneously? • If a student accidentally gets to the wrong page or enters the wrong information is it obvious how to backtrack? • Drag and drop questions may be difficult for some vision impaired users, but can be preferred by users with limited keyboard dexterity – try to keep a variety of material types within each class or module.
Audio content	<ul style="list-style-type: none"> • Audio content can be of great benefit in providing a varied experience for students. Ensure that it is captioned or that a transcript is provided for students who are deaf or hard of hearing. • Many institutions do not allow sound cards to be fitted into machines for student use (or for staff use in some cases) – check the situation in your institution before placing sound files into the VLE.
Language	<ul style="list-style-type: none"> • Many students do not have English as their first language (including those whose first language is British Sign Language) so ensure language is clear and instructions are unambiguous. • Dyslexic students may have additional difficulty in comprehending long and complex sentences. Break sentences down into shorter chunks by the use of punctuation where possible.
Screen Magnifiers	<ul style="list-style-type: none"> • Ensure graphics and charts make sense at increased magnification (where only a portion of the whole may be visible at any one time) • Do not use images of text (they tend to pixelate at increased magnification) • Consider your choice of colour – imagine lime green text magnified sixteen times!
Screen Readers	<ul style="list-style-type: none"> • These read in linear fashion, so try to ensure the items on your pages run in a logical order – this can be seen using the TAB key to jump between items. • Tables can be a feat of memory for someone listening to them being read out, so try to design them so they are easy to comprehend when accessed aurally (for example: 'Chelsea 56 Liverpool 47 Wigan 45 Bolton 42...' is far easier to comprehend than 'Chelsea Liverpool Wigan Bolton....56 47 45 42'). • Links, action buttons, and diagrams often have names that make no sense when taken out of context. Some screen readers can pull all of the links from a page into a separate window for the user. If all of these are 'click here' they are meaningless – try to label each link and button with something contextual. • Provide a text description of images and diagrams so blind students can access the information contained within the images. This will also aid those accessing materials using PDAs or phones.
Colour	<ul style="list-style-type: none"> • Be aware of red/green combinations – a large proportion of students cannot distinguish between them. • Do not use colour alone to convey meaning. How does a blind student know which are the important points written in red? Use heading tags as well, which will then be picked up by screen reading software.

- | | |
|--|--|
| | <ul style="list-style-type: none"> • Try to keep a mild background colour, such as cream, pale green or pale yellow, rather than white, primary colours, or distracting background images. • Hopefully your institution will allow students to choose their own preferred font size and style, but if not, use one which will be as accessible to as wide a range of students as possible – a sans serif font such as Arial or Comic Sans, and minimum of 12 point – in navy, purple or dark green rather than black. Use a minimum of 1.5 line spacing. |
|--|--|

Other sites showing handy hints and tricks for increasing the accessibility of online materials are available from [Aberdeen University](#) and the [University of Essex](#).

These are just a few suggestions for making the materials you put into a VLE more accessible to a wide range of students. There are many more techniques you can use. Above all, though, there are two key things to remember:

- decide how accessible you can realistically hope to make each item within your VLE, and then how you can create alternatives for those students who still can't access it;
- if you aren't sure how your material will work with certain pieces of assistive technology or with certain students, contact the student support office and ask them to find you volunteers who would test out the materials (these are students remember, a small fee will usually get you volunteers!). Try to avoid approaching 'obviously disabled' students directly as they can find this troubling (personally, or in terms of increased workload) or even offensive.

Nationally, work on making VLE materials accessible has so far been isolated, as highlighted in an extremely useful [report](#) by Sara Dunn. However, this should simply be an added driver for you to try to get it right with your own materials and more widely across your own institution. Most institutions have an accessibility policy, but many do not tie this in with learning and teaching policy. It may be worthwhile finding your institution's accessibility policy, and perhaps using your intranet to identify colleagues who have already produced accessible VLE content who may be able to share their experience with you.

Resources

National organisations and initiatives have provided staff with a wealth of information on making their learning and teaching more accessible to disabled students:

- Kelly, B., Phipps, L. and Swift, E. (2004) Developing A Holistic Approach For E-Learning Accessibility, Canadian Journal of Learning and Technology Vol. 30, Issue 3, <http://www.ukoln.ac.uk/web-focus/papers/cjtl-2004/>
- Kelly, B. Phipps, L. and Howell, C. (2005) Implementing A Holistic Approach To E-Learning Accessibility, ALT-C 2005 Conference, <http://www.ukoln.ac.uk/web-focus/papers/alt-c-2005/>
- Kelly, B., Sloan, D., Phipps, L., Petrie, H. and Hamilton, F. (2005) Forcing Standardization or Accommodating Diversity? A Framework for Applying the WCAG in the Real World, Proceedings of the 2005 International Cross-Disciplinary Workshop on Web Accessibility (W4A). ISBN: 1-59593-036-1 [href="http://www.ukoln.ac.uk/web-focus/papers/w4a-2005/](http://www.ukoln.ac.uk/web-focus/papers/w4a-2005/)
- Ferl's [Students With Disabilities Focus Area](#)
- The ALERT project aimed to improve the accessibility of online learning in specific subject areas. In particular, to identify methods of supporting disabled students to enable them to achieve the pedagogical objectives of their modules through a Virtual Learning Environment (VLE) (<http://www.bournemouth.ac.uk/alert/>)

- If you are using BlackBoard you will find Carol Doyle's article very useful. Entitled '[Making Your Module Accessible in BlackBoard](#)', it gives a slightly outdated but nevertheless excellent overview.
- For more information regarding the legal responsibilities to provide accessible materials, visit the [JISC Legal website](#).
- Accessibility information from specific VLE suppliers can be found from [WebCT](#) and [Blackboard](#).
- Rob Woodford and Sally Bradley provide an example of how VLEs can be used with dyslexic students. [ALT News Issue No. 45 April 2004](#).
- [UK Government Disability website](#)

Moving forward

'A VLE is not a panacea – it will improve flexibility and access to a wide range of content and support. It won't, of itself, automatically improve teaching and learning, unless it is implemented with a clear understanding on the part of the staff of the role the VLE will play within a given course or programme of study' – [FERL](#)

This final section considers the support that is available to you, the tutor or member of the teaching team, within and outwith your institution when designing a course using a VLE. We also consider issues that you may encounter when using a VLE and possible solutions. Finally we provide a number of pointers to the other units within this infoKit.

Support Available to the Tutor

When starting to design a course using a VLE, the tutor or teaching team will find there is a range of support available, both within and outwith their institution. This support will be vital in helping you, especially in the design and deployment of the course using a VLE.

Support at your institution

Your primary source of support will usually be within your institution. It is worthwhile spending time finding out who can provide you with that just in time, day-to-day support at your institution, for example, a Centre for Learning and Teaching, an Information Services Department or maybe a colleague who is already proficient with your institution's VLE.

It is very easy in your planning to forget that one of the advantages of using a VLE is that you can use it to signpost resources for your students that are already available at your institution. For example, a course in a VLE can link to:

- Your library's online catalogue;
- Your institution's online electronic resources through an icon or a tab;
- Resources developed by your Library for subject areas and to improve general information literacy;
- Online articles with the negotiation of your Library.

The librarian or learning centre staff at your institution can provide you with a wealth of information and help about supporting your course in a VLE. For example, Gary Sparham of Tameside College, one of the [FERL case studies](#), discusses his development of a module in Blackboard to help study skills.

Jacqueline Chelin has written two articles outlining how librarians can help tutors developing courses in a VLE. In her article for ALT-N she provides [an overview of how librarians can help academic tutors developing courses in a VLE](#). This is further expanded on the [Sconul website](#).

Moore &Aspden, 2004, also show the importance of improving students' information handling skills when using a VLE.

Your institution may have developed some staff development materials, possibly using the VLE for delivery. This example has been produced by John Beaumont–Kerridge of The University of Luton Business School. Some are also produced by the vendors, for example BlackBoard Quick Tutorials.

Support outside of your institution

There are many organisations that can provide you with help about using a VLE environment. The Higher Education Academy has a number of guides about using VLEs especially in its e–learning section. In addition, the FERL website provides a guide to using a VLE with case studies.

The Joint Information Systems Committee (JISC) and its Regional Support Centres

The Association for Learning Technology

Netskills

The British Educational and Technology Agency (BECTA)

Online Centre of Excellence for Scottish Further Education

The National Grid for Learning

The National Information and Learning Technologies Association (NILTA)

The National Learning Network

The Resource Discovery Network

BbMatters

Available Resources

When you are designing your course, you may be concerned about the time required to create new materials. However, you will find that you can source many materials that have already been developed for use in an online environment and can quickly be incorporated into the VLE. For example, from the appropriate LTSN subject centre, the JISC or from the NLN.

Generally you will gather materials from:

- Subject specific gateways and websites such as those previously mentioned.
- Publisher's materials. Some of the textbooks that you recommend may provide a website or additional online materials. This may include quizzes, readings, additional notes, diagrams or links to further resources. It is also worth checking if publishers provide materials on a CD–ROM and if they would mind you transferring these materials into a VLE or if you can link to their website. You may also find that the publisher will be able to provide you with materials that can be downloaded into your VLE.
- Generic websites. There are a number of websites that you might like to point to for your students. For example, RDN Virtual Training Suite materials.

You may also have your own materials that you have already developed for the course. For example, you might have a PowerPoint for a face–to–face session. This could be narrated and

linked to your VLE course. Alternatively you may have some slides which can be incorporated into an image database (providing you have copyright permission). Your Word documents can be easily converted into html pages using software such as [CourseGenie](#) which allows you to add features such as a table of contents that can be used for navigation and self test questions. These web pages can then be loaded into your VLE. [BbMatters](#) published an article authored by the Learning Technical Support Service at The University of Bristol entitled [CourseGenie: Observations on the journey so far](#) . This article documents how the tool is being used and supported at the University of Bristol. Susie Beasley and colleagues at Queen Margaret University College have written a [guide to using CourseGenie](#). Although this tool is easy to use if your word document is straightforward, there are sometimes problems with such features as tables. The following provides a list of the materials that you might include in your VLE course:

Teaching materials	PowerPoint slides, lecture notes, additional materials for further study, extracts from case studies, guidance on how to use equipment, sample assessments and examples of previous student work (after agreement has been gained from the students)
Course information	Information about tutors, groups, timetable, reading lists, assessment information
Links to further materials	Links to the institution's library and online resources, perhaps links to the subject librarian and materials developed by the library for your students. Links to websites with brief explanations.

These resources will usually be a combination of text, images, sound and video files.

Your resources should support the design for the delivery of your course using the VLE. For more details on designing your course see the 'Designing Sustainable and Scalable Courses' section of this infoKit.

Copyright

It is essential that all materials that you use in your course on your VLE have copyright permission. For example, if you are using an image from a website or material from a publisher's CD-ROM, always ask for permission. It is also worthwhile keeping a copy of the letter/email that has granted you permission. You will also need to check that you can use materials to which you have individual access, for example, through membership to professional bodies. This will include electronic (through online websites) or paper-based materials.

You will probably find that there is support available at your institution regarding copyright. Further online information about copyright is available at:

- [The Copyright Licensing Agency](#)
- [JISC Briefing Paper Number 19](#)
- [The JISC Legal website](#) provides a thorough guide to copyright and intellectual property rights.

Intellectual Property Rights

This is a complex area especially in the development of materials that may be available through your VLE. JISC Legal has an [introductory guide](#) to IPR and e-learning that covers the basic aspects of IPR, especially copyright with an emphasis on reusing third party materials. It has hints and tips and provides an overview of the wider picture.

When designing your course, it is very easy to focus on resources especially since students perceive this as one of the key uses of e-learning. However, the crucial focus on your use of a VLE

should be on how you are going to help the students meet the learning outcomes of the course and what are they going to do with these resources to meet the learning outcomes. A good example of this is available through the FERL website, through a [case study](#) of using BlackBoard to complement and support A Level English Literature. Further guidance on designing and developing your course is available in this infoKit.

Issues when using a VLE

In this section, we describe some common problems that might occur when you are using a VLE for the first time. Many of these issues can be overcome through careful planning and course design.

Some of the technical issues that you may experience could be related to:

- Robustness of system;
- Lack of access to the Internet and computers for students;
- Lack of student IT skills.

Any technical system from time to time will have downtime; this may be planned due to updates and necessary maintenance or may occur due to unforeseen difficulties, for example, an electrical surge. In such circumstances it is better to be honest with students and explain that the systems should be available shortly. Despite Oblinger and Frand's ideas, students can be very accommodating of such issues, as long as they are not on a regular basis.

Williams (2002) highlights one of the major barriers to using technology is enabling student access. Students may have access on campus but may have problems in connecting to the VLE off-campus (for example, from home, in outreach centres or when on placements).

Lack of attendance at face-to-face sessions

Many staff are concerned that making learning resources available to students will discourage them from attending class. There is evidence that that this is not the case. Sometimes attendance may be increased at face-to-face meetings. This depends on the perceived 'added value' in attending class. Also, research indicates that if tutors do not make PowerPoints available that this is linked with tutor fears that the VLE will replace them (Urquhart et al, 2004).

Omitting key words and concepts on the PowerPoint Presentations held within a VLE has been demonstrated as a powerful way of ensuring students attendance in class. As outlined in the [LEAP Case Study 4](#), making slides available prior to class means that students can spend more time listening to the tutor and adding additional notes instead of copying down information. However, the key is careful planning around what you, as the tutor, will do in the face-to-face sessions and what you will ask the students to do.

Maintaining the momentum

Learners will need constant reminding to use your module in a VLE and will need a specific reason to visit. It is useful to keep reminding students about the VLE and its uses and role in the face-to-face sessions. Ensure that there are links from any documentation that you provide to the VLE module. You may wish to release materials from time to time to ensure that there are reasons for the students to return to the VLE. However, if you have carefully planned your module, with activities linked to content and your face-to-face sessions, students will return.

Lack of student involvement

Tutors often complain that students will not engage with a VLE. They will visit the VLE once or twice and print out all the materials and then not return again. This reflects the earlier simple use of a VLE as an information repository referred to by Sigala (2002). As we will see in another section it is important in the planning stage to think about how the student will use the resources. VLEs are about content and activities: as the tutor, your role is to guide the student through the content and the related activities. It is better in the design stage to focus on small sections which comprise a task and associated content. An example of this is [the LEAP Case Study 12](#).

Coping with the demands of online students

Once students are involved in online learning and using the VLE, they can become very demanding in their support requirements. Having moved from one setting with very set boundaries and defined times, they find that a VLE can provide them with instant and constant support. As Breen et al (2001) state students understand that they have to wait for a book, they do not have the same perception of waiting for a computer or waiting for a tutor to reply to a posting. Oblinger (2003) and Frand (2000) recognise that increasing expectations from students are resulting in a need to provide 24x7 IT student support. It is essential that the tutor or teaching team set clear guidelines at the beginning about their role, their frequency of access and particularly with online discussions, their input.

A new way of learning

Not all students find working online and using a VLE easy. Students, like tutors, are used to working in a face-to-face learning environment and will require support to help them adjust their study skills to the VLE environment. Comments from students using VLEs have included:

'I paid for lectures so why aren't you providing them?'

Students are familiar and comfortable with 'chalk and talk' face-to-face sessions. They are used to being passive receivers of 'content' from the tutor. Taking responsibility for their learning and becoming more independent learners may place them outside their comfort zone. Therefore it is important that you prepare them for this experience especially when launching your course in a VLE. Careful planning of your course with a VLE is essential.

Lack of spontaneity

Students may complain about the lack of spontaneity in a VLE especially using computer mediated communication; they may dislike the lack of immediacy, quick responses and turn taking which are common in seminars but not possible in online discussions. They could also be frustrated with the time required for asynchronous online feedback and the increased length of time for decisions to be made. Further information about how to overcome such issues is available in the [Communication Tools](#) section of this infoKit.

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