Unit 3 Designing blended and online modules

Current literature in online education cites seemingly ubiquitous advantages of blended and online modes of course delivery that include everything from increased flexibility, richness of communication and greater opportunities for lifelong learning. Nevertheless, many lecturers in higher and further education remain wary of online technology, sceptical about an unfamiliar format of teaching, fearful of lack of technical and pedagogic skills, and uncertain about workload implications.

These are in fact often valid concerns and if you find it hard to embrace online technology, then it is really not surprising at all. In fact it probably mirrors the feelings most of your teaching peers had before they 'went online'. This is sometimes a result of misconceptions about using technology in teaching, the most common of which are addressed in Hit and Myth! (Unit 1 section 3.0) of this guide. Even after reading that section you are likely to still have concerns. Possibly the following surprising experiences reported by your peers after going online can help put you more at ease?

Consider Rachel, for example, a health lecturer and staunch resistor of online teaching until it became evident that one of her failing students suddenly excelled in a newly launched fully online module. Rachel was stunned, but the student easily explained that the flexibility of studying, reading and interacting online finally gave her a realistic chance to fit work, family and study commitments into one day.

Ian, a lecturer in the business school, was pleasantly surprised by the improved level of preparedness his students showed during his lectures after making lecture note outlines available to them beforehand, online. Lecture attendance did not suffer and students remarked they had more time to reflect on the lesson.

Finally, part-time engineering lecturer, Barbara, couldn't have kept her lecturing position had she not had the flexibility to teach fully online from at home while her children were young. There she discovered that the chatroom for holding virtual office hours would lend itself to her face to face lectures as well.

These are only a few examples of the benefits to teaching staff and their students after going online. In addition, by using online technology you are at the cutting edge of emergent, innovative teaching and learning practice! This is by no means meant to downplay the challenges of using technology to support teaching, the anxiety felt at communicating online or the extra time required to redesign a course to a blended or fully online format. Often, however, these problems and the resulting feelings of disappointment are consequences of inadequate preparation, underestimation of online student support needs and grave

misconceptions about good design practice for blended and online modules. All reasons for which you are encouraged to continue reading this chapter.

Might there be something in it for you or your students? Let's explore the design and development issues around blended and online instruction in this unit first in order to

- Raise awareness for key issues around the delivery of online learning
- Provide a point of reference for the incorporation of online technologies to teaching including examples of redesigned classroom-based instruction
- Promote a consistent approach to the delivery of online learning, and
- Encourage you to give it a go!

1.0   What is blended and online teaching…really?

In fully online modules learning materials, student support, activities and assessment are delivered online such as in a virtual learning environment (VLE), for example. This chapter focuses on the design and development issues around fully online modules or blended modules in which ICT (Information and Communication Technology) has replaced substantial elements of traditional delivery. The degree of the blend can vary, of course, and for examples of 'little blends', you are referred to Unit 2.

So, really, what does a blended and online module look like? Let's take a closer look at one example of each, below.

Example

Blended module

Information Technology Management and Applications is a module in a School of Engineering that was redesigned from face-to-face to blended delivery in order to more fully meet the needs of the growing number of international students enrolled. The 30-40 students are typically in their second trimester. Two of the three hours lecture time have been replaced by tutorial sessions with the lecturer in the computer lab during which time students completed practical work (eg Making presentations using PowerPoint®, project management using Microsoft® Project 2003) and discussions are held. Lecture notes are published on WebCT after the lecture. Administrative info, relevant web links, online resources and support sites are posted in WebCT as well. One of originally two written assignments has been replaced by an online assessment. A peer assessment activity is carried out in groups supported by the group-work tool in WebCT. Assignments are submitted, graded and returned electronically.

The module is currently being migrated to WebCT in which group sign up sheets will reduce the workload for the module leader substantially. More online quizzes with automated feedback will be created in order to give students more opportunity to practice. Plans for the future include audio rather than written feedback to assignments and introducing the wiki as a collaborative working area for student group-work tasks.

Summary: International students in particular welcomed the availability of supporting course material online as a supplement to the lecture in addition to the online self-tests for practicing skills and monitoring their learning progress.

For a detailed account of this module's redesign from lecture-based to blended please see Appendix 2.

Example

Fully online module

This case study is an Environmental Studies module delivered fully online to 23 mature students living in 8 different countries. All students are expected to participate 2-3 times/ week in a variety of collaborative discussions and activities online. Readings are assigned from two hard copy core textbooks, e-book chapters, online journals and the daily press. The module leader has prepared weekly open-ended questions for students to engage with in the asynchronous discussion forum. The questions encourage problem-based learning in which students enact role plays, collect and compare environmental data (such as hourly carbon monoxide concentrations in major cities) or discuss current events issues that add relevance to weekly topics. The module leader is highly visible online to publish announcements, support discussion activity or grade assignments. Students complete written assignments independently in which they consolidate knowledge constructed in the discussion forums. In a group-work activity in weeks 6-8 groups of 4-5 students work collaboratively in a wiki in order to prepare the online presentation of a case study analysis to the whole class. An online midterm tests basic terminology and concepts. All work is submitted electronically. Help and support is available via the asynchronous Problems Discussion area. The module leader offers a synchronous office hours' chat session which has proven tricky due to time zone differences, however. In an informal 'Chatterbox' discussion area students have the opportunity for online socialising.

Summary: Thanks to the supportive learning environment of the module and despite never meeting face-to-face, students felt comfortable sharing ideas and learning with one another online. The geographically dispersed student body posed some additional challenges for the module leader which were outweighed, however, by the rewards such as discussions unfolding rich in thought, reason and global knowledge.

2.0   Getting started

In Unit 2 of this guide you are introduced to a number of simple ways in which to use technology to support your teaching as in 'little blends' that require a minimum of preparation. In this section you will find a step by step guideline to prepare for the more comprehensive incorporation of technology to support your teaching for the delivery of a blended or fully online module.

2.1   First: Get in touch with your ADA!

Once again, and certainly worth repeating, you are encouraged to consult the Professional Development team at Edinburgh Napier University where the faculty Academic Development Advisers (ADAs) reside and whose role it is to assist teaching staff make best use of technology in their teaching activities. ADA contact details can be found in Unit 1 section 6.5 and on the WebCT staff pages at **http://www2.napier.ac.uk/webct/staff/training.html**

2.2   Next: Ready already?

If you think you're ready to try online, then by all means: get started! As discussed in Unit 1, teaching online requires many of the same skills you use in the traditional classroom. Aside from contacting your ADA avoid the most common pitfalls by talking to peers already online and by visiting relevant Professional Development training sessions. Dip in and out of this guide and any of the readings listed at the end of this guide's chapters for ideas and examples of what your online endeavour might look like.

While you're still here, though, find the rest of Unit 3 devoted to tried and tested online design and development recommendations for blended or online learning.

2.3   Finally: Be prepared-not scared!

Before starting to design and develop your blended or online module, do check to see if system and administrative requirements are in place first and avoid disappointment later on:
- Availability of internet access, correct hardware/software, system specifications and browser settings work/home (see link to WebCT staff pages at **http://www.napier.ac.uk/webct/staff**), anti-virus software updates.
- Teaching team login ids and access to WebCT (C&IT)
- Module instance on WebCT (contact your school office)
- Introductory training on features and functionality of WebCT(see WebCT staff help pages above or Professional Development programme for WebCT and related training sessions)

► See **Unit 1 Section 6.5** for detailed list of contacts.

3.0   Issues to consider in developing online learning

Regardless of mode of delivery, the principles underpinning designing effective approaches to learning, teaching and assessment are the same. However, there are several key additional issues to consider when developing online materials and resources, and which apply whether your aim is to enhance aspects of what

you do in the classroom, or to enable a predominantly or fully online learning experience.

Therefore, let's take a first look at key issues around:

- Your students
- Activities and assessment online
- Content and file formats.

Each of these points will be expanded upon further in later chapters of this guide (Units 8, 6 and 7, respectively) as the focus here is predominantly on approaches to the design of each rather than on their implementation.

3.1   Your students

When preparing to develop online materials, consider who your students are. If they are new to HE, will they have the skills to work largely independently online? If they are distance students, what are they likely to want from an online course? Might there be language or cultural barriers to overcome? What IT skills might they have, and what equipment will they need access to? How can they prepare for learning with online technologies?

3.1.1   Technical orientation
Prior to undertaking any online learning, the student must know how to operate the technology. At Edinburgh Napier the first-year induction programme provides a basic to introduction to WebCT, and Schools have run their own events for direct entrants and other students who are new to Edinburgh Napier's VLE.

The WebCT student support site at **http://www2.napier.ac.uk/webct/students/** is available through the student portal.

Before the trimester begins, consider sending out a 'Technical Checklist', a complete list of hardware and software requirements including browser settings for the VLE (available online from the WebCT staff help page) to your students. Encourage them to login to the VLE before the first day of the term, list relevant contact details and links to student help pages such as for WebCT at **http://www2.napier.ac.uk/webct/students/**

3.1.2   Online learning orientation
Most students will not only be unfamiliar with the virtual learning environment (WebCT at Edinburgh Napier), but with the general nature of learning online. It is important that students understand the nature and demands of studying online. Before the term begins point out to your students (via post and e-mail) the Edinburgh Napier student online induction website (at **http://www.napier.ac.uk/napierlife/firstday/distancelearners/Pages/DistanceLearners.aspx**). Book a computer lab for face-to-face induction sessions. Allow the first week of the term for online orientation and community building tasks. Let

them know what being an online learner will mean, either in an introductory e-mail or included as part of a Module Overview document in WebCT.

► **See [Appendix 1](#) for an example of online learning orientation guidance for students. See [Appendix 3](#) for a sample text "The successful online learner".**

At Edinburgh Napier the first screen the student sees when entering a WebCT module is the so-called Course Content Home. When designing your module's Course Content Home, be sure to make your students feel welcome online by greeting them warmly. As demonstrated in Fig 1 below let them know exactly what you intend to use WebCT for, the online presence expectation you have of them, your role and important contact information.
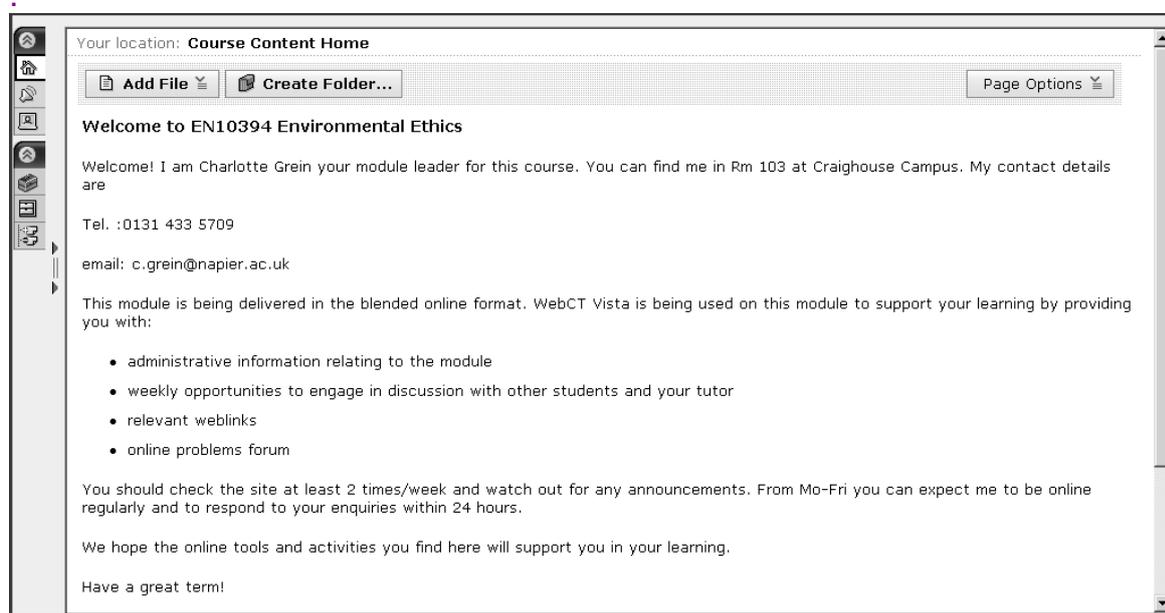
.

Figure 1: A WebCT module homepage with relevant module information for students

It is recommended to organise materials and activities in folders in order to avoid clutter on the homepage. For example consider creating two folders on the Course Content Home to begin with: the **Module Guide** and the **Module Materials** folder as shown in Fig 2.

Figure 2: Module Guide and Module Materials folders on WebCT Course Content Home

The **Module Guide** folder could hold all relevant administrative and support documentation. For example in the example in Figure 3, the students new to WebCT, were invited to a face-to-face induction workshop before the beginning of the term and asked to complete a set of induction activities in order to familiarise themselves with the tools they would be expected to use throughout the term. In addition they were given a handout
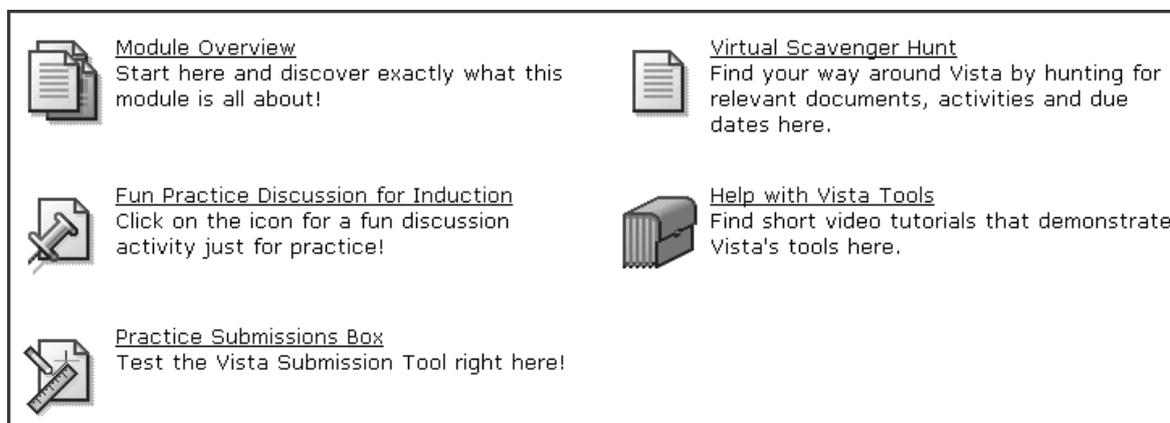

Figure 3: Module Guide folder content in WebCT

In addition to induction or orientation activities the **Module Guide** folder (see Figure 3) would include any or all of the following information, some of which will usually be part of the **Module Overview** file (see Figure 4 for a Module Overview excerpt and Appendix 4 for a sample text):

- Programme details
- Module descriptor
- Role of VLE including expected usage/purpose of online tools
- READMEFIRST file that includes technical help contact info/FAQ file/troubleshooting guide)
- Timeline with list of weekly activities (readings, research, discussions, etc) including exact assignment due dates/closure of discussion boards/on-site meetings and locations/test dates and locations
- Netiquette guidelines (see Appendix 8)
- Online study-skills guidance (see Appendices 1 and 3)
- Plagiarism policy (see Unit 10 section 3)
- Grading criteria
- Assignment specifications including preferred file type/submission mode/late policy etc
- Tutor contact details (more than one!)
- School administrative contact details
- E-mail guidance (see Appendix 11)
- Role of tutor (online response time, statement of intent)
- Role of student (online communication policy, time commitment to online study, discussion and other activities) (see Appendix 13)
- Module team biographies and photos.

Figure 4: Example Module Overview found in the Module Guide folder of a WebCT module

The second folder on the Course Content Home, the **Module Materials** folder could hold module materials such as Unit lessons, assignments, web links, discussion boards, group sign up sheets, and assessments (see Figure 5).

For predominantly online study consider adding to the **Course Content Home**:

- Problems Forum discussion area on which to ask module related questions
- Informal socialising space for students to stay in touch beyond module-related issues (eg Chatterbox, Teatime).
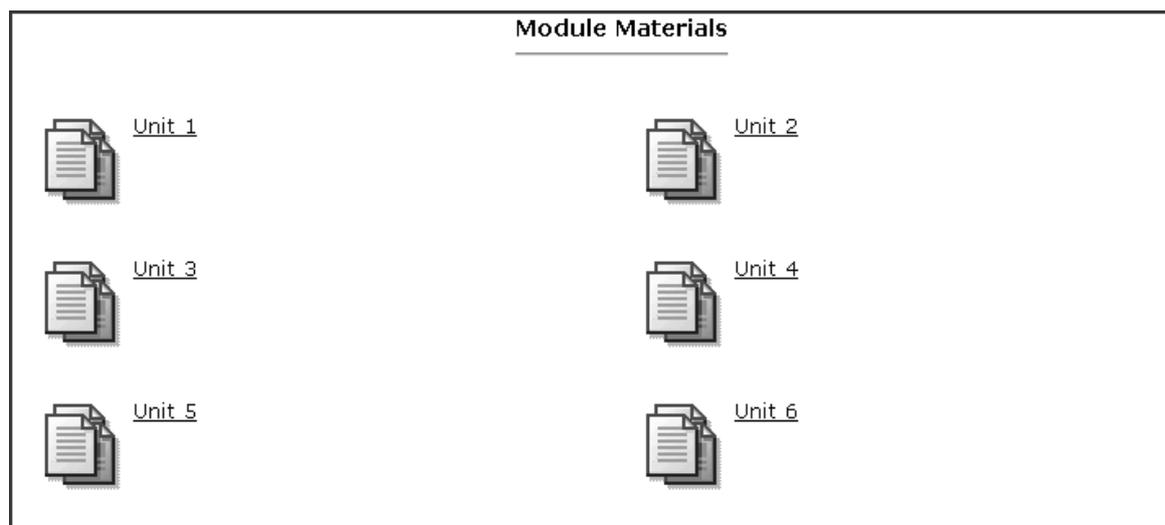

Figure 5: Example of Module Materials folder content in WebCT

► **See Unit 8 for further guidance on designing your online module.**

3.2   Activities and assessment online

How might online provision support your students' learning? First, carefully look at the subject matter and desired learning outcomes, and then explore the possibilities offered by online technology. Provide students with a need to use online resources and include continuous coursework that requires students to engage with online materials, and with each other online, over the duration of a module. Make it as purposeful as possible by carefully aligning learning outcomes to the online activities.

3.2.1 Activities online

Regardless of the subject matter in an online or predominantly online module it is recommended to include weekly activities that actively engage the students with the material and with one another. Online modules benefit from opportunities for online communication and collaboration between students to enhance learning, reduce isolation, and help improve retention. Table 1 lists types of activities that have been shown to work well online including teaching examples and tips for implementation.

► See Unit 5 for further guidance on online communication tools and collaborative working spaces.

Table 1: Real examples of activities that work well online (idea for table inspired by Virginia Tech Faculty development institute resources located at http://www.fdi.vt.edu/

Activity type	Supporting technology	Teaching example	Tips
Discussing and interacting	Discussion boards, chat, e-mail, list servs, blogs, video conferencing	Hands on vs. inquiry science lesson	Open-ended questions promote critical thinking skills. Might there be an expert guest you could invite for added value?
See example at: **http://www.wasdinet.org/sample-sl.htm**			
Debating: Students defend opposing side of a controversial issue	Discussion boards, chat, video conferencing	Students debate the question: Should everyone carry an identity card?	Think of a controversy related to your subject area for meaningful debate. Be sure students have the opportunity to collect evidence and become informed in order to participate properly in debate
See example at: **http://www.idebate.org/debatabase/topic_details.php?topicID=34** from debate database at **http://www.idebate.org/debatabase/**			
Role play: Students take on an assigned role in a group or individual activity	Discussion boards, chat, e-mail	Role play assignment "Murder on the internet" in which students learning French and Spanish are assigned a character to play in the story revealing secrets about themselves by communicating with other students.	Think about positions that lend themselves for role play in your subject area, and how you prepare students for taking on that role.
See example reviewed at: **https://www.calico.org/a-636-Murder%20on%20the%20Internet.html**		Role play software at **http://www.fablusi.com/**	
Collecting and analysing data students collect data locally and share it via the VLE	Spreadsheets, discussion boards, chat, wiki, desktop sharing applications	In a geophysics lesson on earthquakes students collect earthquake data from Edinburgh University's worldwide earthquake locator and analyse and make predictions for occurrences as a group.	Which data is relevant to your subject area and where can students find it?
See the worldwide earthquake locator at: **http://tsunami.geo.ed.ac.uk/local-bin/quakes/mapscript/home.pl**			

Activity type	Supporting technology	Teaching example	Tips
Exploring real cases and problems: students engage with real world problems and scenarios in order to practice decision making skills, apply methods studied	Discussion board, chat, wiki	Case study of a death row inmate in which students explore perceptions of mental illness.	Ask yourself which aspects of your course relate best to the real world.

See example at: **http://www.sciencecases.org/artificial_sanity/artificial_sanity.asp**

Travelling virtually: students take part in online expeditions collecting data, learning about different cultures and places	Video animation software, simulations, websites with relevant info and examples	Students virtually climb Mount Everest in order to collect expedition data	Be sure a virtual tour or travel experience really adds value to your lesson.

See example at: **http://dsc.discovery.com/everesttheexperience/interactive/interactive.html?clik=www_ifun_1**

Creating a product or presentation: students share resources and exchange documents with the common goal of producing an end product.	Web page editors, PowerPoint®, wikis, whiteboards, desktop application software	Visit the first link below for a set of tutorials designed, developed and created by history students. See the second link for 'Why is the Mona Lisa Smiling?, an international collaborative web project between an American and a Swedish high school class	Ask yourself whether your subject area lends itself to creating a collaborative product - this could simply be a power point presentation, for example.

See examples at: **http://www.ucalgary.ca/applied_history/tutor/** and **http://library.thinkquest.org/13681/data/davin2.shtml**

Tutorials, self-tests	Will vary depending on the application	Download a cashflow statement tutorial from the first link below.	There are hundreds of online tutorials available for every subject area-search for an appropriate one at the second link below.

See examples at: **http://www.athabascau.ca/html/staff/academic/ccas/davida.htm** and **http://www.thegateway.org/**

Activity type	Supporting technology	Teaching example	Tips
Supporting a global partner or peer	Discussion board, e-mail, chat with whiteboard, wiki, audio-video conferencing	Students learning English as a second language support one another and monitor the others' skills from around the world.	Be sure to remind students of language and cultural considerations of written communication

See example at: **http://schmooze.hunter.cuny.edu/**

3.2.2 Assessment online

Tutors delivering on fully online programmes, for example, do not have the face-to-face opportunities of campus-based lecturers to communicate with students on academic performance or formative feedback. Alternatively, creating a self-test tool online may not be accessible to all students of a face-to-face lecture. Both examples demonstrate just some of the circumstances to be aware of in the online assessment planning phase in order to ensure fair and consistent use.

The fully online mode of delivery in particular does not lend itself well to summative assessment, as opportunities for reinforcing learning or measuring performance are absent in an environment in which students need additional learner support. In addition to objective assessment, there are a wide range of assessed online activities that also lend themselves to the enhancement of face-to-face lectures and seminars. Examples include:

- Peer assessment of student publications
- Electronically submitted essays, reflective learning journals, blogs
- Collaborative projects
- Student created tests, tutorials, presentations (graphic/audio/video/text)
- Mandatory discussion participation
- Graded discussion moderation, summary or reflection

► See Unit 6 for further guidance on coursework and assessment for blended and online learning.

3.3   The content and file formats

If you expect to assign regular readings as a part of the coursework then you may want to consider picking a current, hard-copy core textbook for your students to refer to rather than putting effort into creating pages and pages of text online. Publishers today offer valuable online resources for both staff and students alongside the printed book (eg Houghton Mifflin Online Geology Study Center at **http://college.hmco.com/geology/resources/geologylink/fieldtrips.html**)

Anything from an online databank of quiz questions, crossword puzzles and lecture notes outlines are made available by many book publishers today and it pays to search for an appropriate book first before beginning to write content from scratch (see section 4.0 below).

Nevertheless, creating quality online learning materials gives learners added flexibility to study where and when they want and at their own pace. By no means, however, does online material need to be made available in print format as well. Your online content could complement printed hard-copy text by linking to relevant web resources (see section 3.3.1 below) or simply provide an audio overview of the weekly reading assignments. This is up to you and will depend on a range of factors.

3.3.1 Hyperlinking

A hyperlink is a reference in a written document to another resource such as a another document, web page or image. The following example from the School of Nursing, Midwifery and Social Care demonstrates how including a few hyperlinks enriches an online lesson where valuable web resources are made available to students literally at the click of a mouse.

Ethical Issues and Research Governance

Ethical issues are an important element in any research project. The topic of **ethics** has been burgeoning for now what seems a long time. After starting with the **Hippocratic Oath** for doctors, the other professions that are related to the care of people have also gone down the road of devising codes of behaviour (**RCN Code of Ethics, 1997**). These were drawn up to protect vulnerable people as well as staff members. Groups have from time immemorial agreed either tacitly or in a more overt way the rules by which they want to operate their lives.

| website | PDF file | glossary term |

3.3.2 General guidance

When preparing online material it is important to bear in mind that students will need more explicit guidance and information than for a traditionally delivered lecture or seminar. Without the visual and oral cues from the tutor students may struggle with the intent and meaning of an online text. It could be a lesson, instructions, coursework or merely a reference page for future use. Clearly distinguishing between different types of information from the outset benefits the non-native English speaker as much as the anxious online learner.

Consider the following key points when preparing online material:

- Add a descriptive heading (eg Unit 1 Introduction, Reading Assignment 3) to the written text which makes the nature of the content clear and be consistent in its repeated use (or of a descriptive icon) for subsequent units.

- Include due dates within the body of written assignments. Repeat this information in a timeline/planner, calendar and as an announcement.

- Write in a clear, succinct and lively manner. Remember, you are not writing a textbook. Finding your own, personal online voice is half the battle!

- Chunk your online texts into shorter, more easily read pieces of work (eg Introduction, Unit learning outcomes; Reading assignment; Lesson; Discussion activity are five separate online documents).

- Pitch your material at the appropriate level of study and be stylistically consistent throughout.

- Ensure just-in-time guidance**.** Explicit task-related pointers and instructions embedded within the written online text itself serve as additional guidance that is offered at the point in time it is most relevant (for example, discussion task requirements repeated in an introductory message from the tutor, a simple reminder to make sure the student 'has read and understood sections x or y' before using a specific self-test feature.)

The following example from an undergraduate online module being offered in the School of Nursing, Midwifery and Social Care highlights an online lesson that demonstrates all the above points nicely. Reading assignments are drawn from the core text book and relevant journal articles. Notice the explicit guidance at the beginning and the end of the lesson-the lecturer concludes all online lessons with the 'What do I do next' sections.

Example

6.1.3 Systematic Reviews

This section will prepare you for Activity 6.1.

There are numerous websites that provide invaluable information about systematic reviews. Within this page we are going to introduce you briefly to systematic reviews and then we are going to ask you to seek further information from these websites and participate in Activity 6.1.

As you will all acknowledge from undertaking this module and your brief exploration of the library databases in Unit 2 there is a wealth of research literature available to all health care professionals. Individual pieces of research are useful, but, alone they do not offer a great insight to their effectiveness, together they sometimes offer contradictory advice. Systematic Reviews are needed to assist practitioners make decisions about their evidence based practice. In response to a therapeutic question they collate all the evidence available, assess the evidence collated, combine the results and place the findings in context. A systematic review if undertaken adequately provides an unbiased answer to a therapeutic question.

What do I do next?
Participate in Discussion Activity 6.1. You can do this by pressing the Next icon in the action menu above and following the instruction under 6.1.4. Please remember the online activities are an important part of your learning too. If you do not participate in the activities then you will not gain the most from the unit.

► See **Unit 4 section 2** and **Unit 8 section 3.1** for additional guidance.

3.4   Formats for publishing in the VLE

When developing content for the VLE it is important to be aware of the issues concerning file format that will affect the accessibility and usability of the content for the student. Common file formats include: HTML (hypertext mark up language), Word, PDF (Portable Document Format), and PowerPoint® (also plain text (ASCII) and RTF (Rich Text Format) but less common due to formatting limitations.)

3.4.1   HTML
The most universally accessible file format across all types of machines and operating systems is HTML (or XHTML) and always the preferred format for publishing on the VLE. Here are the reasons why:

File size
HTML files are smaller than any of the other file formats. The bigger the file, the longer it will take the end-user to download. It's as simple as that! Students with slow connections will wait and possibly be paying on the basis of that time they must wait before they can read your file. An average user begins to get impatient after waiting 10 seconds.

Rule of thumb: 1 MB file size increases download time on a 28 kB modem by 5-10 minutes.

Comparison of file sizes:
- HTML: 2-5 kB/page
- Word and PDF (without graphics): 40kB-600kB/page
- PowerPoint®: 60 kB/slide
- Images: GIF or JPEG: 60kB/image
- Scanned texts: can reach file sizes of 5-6 MB!

MB = megabyte
kB = kilobyte

Software Requirements
HTML files do not require specialist software to be viewed-most web browsers can be downloaded for free (Internet Explorer, FireFox, Netscape) and every browser can read HTML. While the suite of Microsoft® products is the standard on most UK university operating systems this may not be the case for international partner institutions or their students. In order to read a Word or PowerPoint® document users may have to download a viewer plugin.

Certain document types, such as PDF, require additional software or plugins which the end-user either may not be authorised to install (eg at place of work), or may simply not be capable of installing. Furthermore, the user's operating system may or may not support the required plugin or software.

Accessibility

HTML code files are plain text files, so they can be composed and edited on any type of computer (Windows®, Mac, UNIX). HTML is coded to enable users to easily change the look and feel of a document to best suite their individual needs. In HTML, headings can be explicitly marked up with a particular heading level which screen readers (used by the visually impaired student) can easily navigate through. HTML provides the ability to add alternate text to images, which is read aloud by screen readers. HTML also provides extensive mark-up that allows users to easily understand relationships in tables.

For all its advantages, creating an HTML file, however, isn't as straightforward as creating any of the other file formats. But, learning HTML really isn't that hard and there are tutorials available on the web (eg **http://www.davesite.com/webstation/html**. Commercial web authoring tools such as Microsoft® FrontPage® and Macromedia Dreamweaver, for example, allow you to create accessible HTML pages or you can use the Seamonkey suite at **http://www.seamonkey-project.org/** for free.

WebCT has a built-in HTML creator which makes creating simple HTML files for the VLE as easy as writing a Word document (see Appendix 6 for guidance).

3.4.2 File formats other than HTML

Nevertheless, more likely than not you already have material in non-HTML formats and may be struggling for time to convert to HTML. Word, PDF and PowerPoint® files are easily uploaded into WebCT , and here are a few quick things you can do to improve accessibility and usability for the end-user also bearing in mind the tips provided in Appendix 5.

Microsoft® Word

Plain text document without images or tables are nearly as accessible as HTML, but

- Use the Word styles and formatting functions rather than highlighting to change Font size or style. This gives the text true structure which screen readers will recognise.
- Add alternative text when embedding an image by right clicking on the image, then select 'Format Picture', choose the Web tag and then type in the description.
- You can export any word document you create to an HTML file (click 'save as web page, filtered'), but often much of the web content ('junk' HTML) created is inaccessible to users with disabilities. Office 2000 users can install the added HTML filter at **http://www.microsoft.com/downloads/details.aspx?FamilyID=209ADB EE-3FBD-482C-83B0-96FB79B74DED&displaylang=EN** which removes the Office specific 'junk' HTML tags.
- In WebCT you can easily create HTML files from your existing Word document. See Appendix 6 for detailed instructions.

PDF

PDF preserves any document of any content (including fonts and graphics) exactly as the original, regardless of machine or operating system. PDF is a good choice particularly for files that include specialist symbols that are hard to convert to HTML. Converting a standard Word document (without graphics) to PDF can reduce file size by 75%. Please note that the belief that putting information online in PDF format protects your work from misuse is wrong-any content put online is at risk of being copied or manipulated.

To create PDF files:

- Download the Docudesk PDF Writer on a trial basis for free at **http://www.docudesk.com/support_files.shtml** Download the Adobe Acrobat 9.0 PDF Writer at **http://www.adobe.com/uk/products/acrobatpro/tryout.html** for a 30-trial

- There are three PDF document types: unstructured, structured, and tagged. When creating PDF files choose the tagged option as the one optimised best for accessibility.

Although PDF documents created with the Adobe Acrobat 5.0 and higher are generally accessible (provided Windows® users are equipped with the appropriate Adobe Acrobat Reader at **http://get.adobe.com/uk/reader/**) user groups recommend that PDF documents be accompanied by more universally accessible formats, such as HTML. To convert a PDF file to HTML or text go to **http://www.adobe.com/products/acrobat/access_onlinetools.html** and type in the URL of the PDF file.

PowerPoint®

Microsoft® PowerPoint® has become established as the most popular format for creating and presenting slideshows, but for complex applications file size and accessibility concerns may arise. In order to reduce the file size of your PowerPoint® slides consider the following before uploading your presentation into the VLE:

- Avoid animations or unnecessary images
- Disable 'Allow Fast Saves'. Choose Tools>Options (Tools, Preferences or PowerPoint®, Preferences on the Mac). On the Save tab, remove the checkmark next to 'Allow Fast Saves'.
- Change 'Maximum Number of Undos' to 10 or less. Choose Tools> Options (Tools, Preferences or PowerPoint®, Preferences on the Mac). On the Edit tab, change the number of undos to 10 or less.
- Don't drag and drop files into PowerPoint® (images are not compressed) Instead save your image as a JPG, PNG, or other file type, then use Insert>Picture>From>File.
- If you are only presenting text consider creating an HTML or Word file instead.
- Only content visible in the outline view can be read by screen readers-don't create additional text boxes
- Careful of colour contrast
- Be sure to describe graphics in the notes area

- If you have the Adobe PDF Maker plugin for Microsoft® Office you can export your PowerPoint® to a tagged (accessible) PDF file
- Star Office (download at **http://www.downloadstaroffice.com/impress.html**) is free and lets you create accessible narrated PowerPoint® slide shows
- Free software from the W3 Consortium for creating accessible PowerPoint® available at **http://www.w3.org/Talks/slidemaker/YYMMsub/**

You are also encouraged to read the TechDis Guiding Principles for the development of accessible e-content at **http://new.techdis.ac.uk/index.php?p=6_6** and guidelines for e-learning content at **http://new.techdis.ac.uk/index.php?p=6_6_1** for a list of the minimum requirements for creating accessible text, images, audio, video, and animated content.

Alternatively you may find that presentation software such as Slideshare (**http://www.slideshare.net/**) or prezi (**http://prezi.com/**) offer you more creative possibilities which students can then access via a dedicated hyperlink.

4.0   Rethinking content

> Every word and phrase should have to fight for its life. That means writing 'use' instead of 'utilize' which is identical in meaning, but has two more syllables.

> Crawford Kilian, 'Effective Web Writing', *Web Techniques*, Feb 2001

As it has become increasingly straightforward to make files of nearly any format available online, a common misconception about the role of the VLE persists as that of a content repository. This doesn't always make the best use of the online teaching and learning environment, however, and content-driven fully online modules are at risk of boring and de-motivating learners.

Reading lengthy lessons online is more strenuous and time-consuming than reading on paper. Ideally, when writing online content ask yourself, 'Is this text really something my students can't get from a lecture, journal article or textbook?' There are examples of content, of course, that you will find can't be presented in any other way: Instructions for the correct use of a fluid pump enriched with hypertext that links to a glossary of technical terms; an introduction to a topic that hasn't been discussed otherwise in its current currency; a case study that you have created especially for this cohort of students.

4.1   Alternatives to content

Nevertheless, the inherent strength of the online teaching and learning environment is the added opportunities for communication and collaboration using

asynchronous discussion boards, synchronous chats and whiteboards, e-mail, blogs and wikis.

Generally speaking higher levels of understanding are achieved when students are actively and collaboratively engaged in critical analysis, application, evaluation or synthesis rather than merely reading content. With this in mind, you might consider taking an activity-driven rather than a content-driven approach to your module design. To get it right (it won't be picture-perfect the first time, but that's ok!) think about the following before developing any content:

- Select the subject matter for the course.
- Translate content into learning outcomes.
- Explore activities and experiences to achieve the outcomes: How can the interactive and collaborative attributes of online technology assist?
- Finally, formulate unit introductions and online lessons (is there a book to support you?) that will prepare students to engage meaningfully with the activities.
- Carefully align learning outcomes and activities to assessment.

By focusing on the activities that support the student reach a learning outcome your students become active learners rather than passive readers, taking on more responsibility for their learning. Rather than *deliver* information, find here some teaching strategies that may help your students achieve higher level learning outcomes:

- Could your students seek out required information elsewhere, eg by consulting a journal, book, newspaper, website, online repository?
- Could your students construct new knowledge collaboratively in an asynchronous discussion area or blog?
- Rather than posting lecture notes, post questions to your lecture first and allow a few days before posting the answers.
- Consider omitting a further references list and let students create a collaborative subject related reference list in a wiki or social bookmarking site instead.
- Rather than upload unit summaries, assign different students each week to summarise content and reward them for it.
- Instead of uploading completed tables upload incomplete/jumbled up tables and tell students to complete/fix as an assignment.
- Rather than feed students statistics, prompt them to find the data and share with the class.
- Have your students formulate a quiz for the others which tests for understanding of the last unit.
- Send your students to audio/videotape interviews and upload the clip with others online.
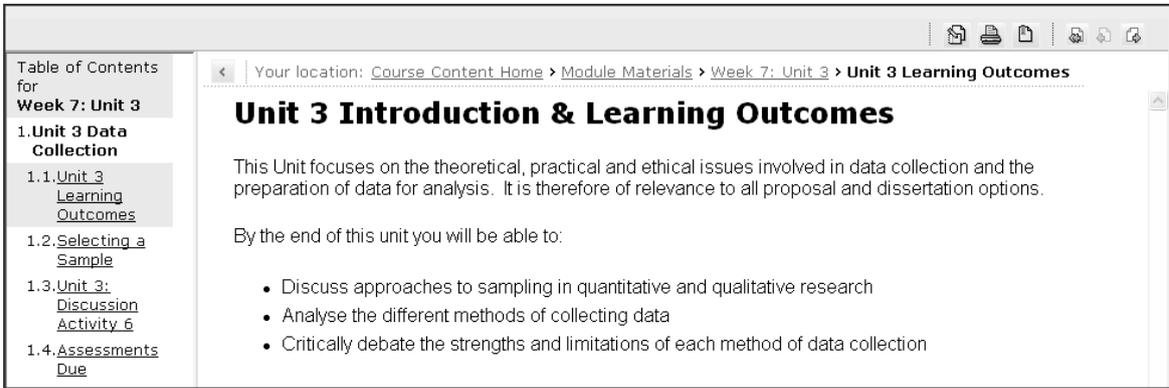- Have your students review video clips of statements by business experts and critically evaluate their opinions.

Example

Creating an activity driven lesson

In a fully online Research Methods module, students were previously expected to critically evaluate selected literature in their summative assessment. There was no opportunity to prepare for or practice critical evaluation skills beforehand and hence no online engagement evident during the term whatsoever. In an effort to engage students more online and improve the level of understanding a core textbook was chosen to replace the lengthy online lessons and to add regular opportunities for student-student and student-tutor interaction in a series of meaningful online activities. Close alignment between the LOs and TLAs assured that students understood the purpose of the TLA which made it relevant to their learning.

For one particular LO (eg 'Determine the structure and value of selected pieces of literature') students were paired up into online groups where they assessed each other's literature reviews. The peer assessments were then published alongside the reviews in the VLE and in a class discussion moderated by the tutor compared and commented on. The online content in preparation for this activity was a short introduction to qualitative and quantitative research methods, and a set of evaluation criteria and peer review guidelines. Further readings were assigned in the core text book. After the discussion activity students were given the opportunity to take the core textbook publisher's self-test quiz for reaffirmation of basic research methods and terminology.

The lively participation in the discussion demonstrated the effectiveness of this simple activity redesign. Tutors reported a higher level of understanding of research methods and literature reviews as demonstrated in the final assessments.

Table of Contents for Week 7: Unit 3
1. Unit 3 Data Collection
   1.1. Unit 3 Learning Outcomes
   1.2. Selecting a Sample
   1.3. Unit 3: Discussion Activity 6
   1.4. Assessments Due

Your location: Course Content Home › Module Materials › Week 7: Unit 3 › Unit 3 Learning Outcomes

Unit 3 Introduction & Learning Outcomes

This Unit focuses on the theoretical, practical and ethical issues involved in data collection and the preparation of data for analysis. It is therefore of relevance to all proposal and dissertation options.

By the end of this unit you will be able to:

- Discuss approaches to sampling in quantitative and qualitative research
- Analyse the different methods of collecting data
- Critically debate the strengths and limitations of each method of data collection

► **See Unit 6 for further guidance on online activities.**

5.0   Online course design timeline of events

The following timeline will give you a rough idea of the stages involved in the design and development of a predominantly online module *from scratch*, and approximate timescale of events over a period of six months. This is clearly an ideal scenario which doesn't take into account the likely potential constraints of your teaching situation.

Six months before module delivery
- Contact faculty ADA (**http://www2.napier.ac.uk/webct/staff/training.html**) and arrange for start-up meeting to discuss learning model (pedagogic design) and timetabling
- Begin module validation process (consult Quality Framework)
- Begin organising teaching team
- Research publishers for core text with online support material
- Consult library for relevant teaching and learning resources and licensing arrangements (see also Unit 11)
- Consult VLE staff support page at **http://www2.napier.ac.uk/webct/staff/**
-

Four to five months before module delivery
- Register for relevant online learning teaching seminars and workshops run by Professional Development at **http://www2.napier.ac.uk/ed/profdev/overviewTechnology.htm**
- Log in to WebCT at **http://www2.napier.ac.uk/webct/staff/** and explore your 'sandpit'
- Begin developing course and exploring ideas for activities and assessment around learning outcomes.

Three months before module delivery
- Consult module evaluation checklist (Appendix 7) for initial monitoring of online activities, assessment, content, multimedia
- Begin building fully online course (later if including online elements for blended approach), including homepage header, introduction, content, online activities, glossary for the first 1 or 2 units, contact information, digital photo.

Two months before module delivery
- Online module design review by tutor and peers
- Add assessment specifications, assignment guidelines, grading criteria, references, online learning guidance etc
- Consider contingency arrangements should VLE become unavailable
- If team-teaching consider induction, training needs of teaching team – it's never too early!!

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2-3 weeks before module delivery

- Begin writing timetable, module overview, uploading self-test quiz questions, discussion activities
- Tutor to proofread, evaluate module, check student view and access of online activities and assessments
- Ask a colleague and/or faculty ADA to peer review fully clarity, appropriateness, navigation and ease of use (see online module peer review checklist in Appendix 7)
- Hide module units, assessments etc from student view (students may be enrolled at this time).

One week before module delivery

- Enquire about student module enrolment
- Finalise module header, welcome message
- Hold face-to-face/online student induction
- Address outstanding system/settings requirements.

First day of module delivery

- Post welcome announcement
- Respond to student introductions in introduction discussion board
- Monitor activity in week 1 orientation and bonding activities
- Check student list and logins. Test availability of guest account login if necessary

► See Unit 4 and Unit 8 for further guidance on student support strategies during the term.

6.0 Further reading

Anderson, T. (2008) Athabasca University *Theory and Practice of Online Learning (2nd ed.)*Part III Design and development of online courses. E-book available for free download at **http://www.aupress.ca/index.php/books/120146**

Chickering A.W., & Ehrmann, C. (1996). Implementing the seven principles: Technology as a Lever. Available online at **http://www.tltgroup.org/programs/seven.html**

Garrison, D.R., & Anderson, T. (2003). *E-learning in the 21st century: a framework for research and practice.* Ch. 10 Organisational issues. New York: RoutledgeFalmer. Available at Edinburgh Napier library in print and as an e-book via Netlibrary.

La Trobe University's Inclusive teaching practices web pages, which includes the 'Developing an inclusive curriculum' guideline available at **http://www.latrobe.edu.au/equity/disas/inclusiv.htm**

Lockwood, F. and Gooley, A. (2003) *Innovation in open and distance learning: successful development of online and web-based learning.* London: Kogan Page.

Jochems, W., van Merrienboer, J., Koper, R. (Eds) (2004) *Integrated e-learning*: *Implications for pedagogy, technology and organization.* Ch 8 Usability evaluation of integrated e-learning by Paas, F, & Firssova, O. RoutledgeFalmer.

Porter, L.R. (2004) *Developing an online curriculum: Technologies and techniques.* Ch. 2 Adding a course to the curriculum; Ch. 8 Managing program and faculty concerns. Hershey, PA: Infosci Publishing. Available at Edinburgh Napier library in print and as an e-book (2004) via Netlibrary.

Seale, J., & Cooper, M. (2009), E-learning and accessibility: An exploration of the potential role of generic pedagogical tools. *Computers& Education.*1107-1116*.*

Smyth, K. (2007). TESEP in Practice: The 3E Approach. Transform website. Available online at
http://www2.napier.ac.uk/transform/TESEP_3E_Approach.pdf

Accessibility Issues

Edinburgh Napier WebCT Accessibility Matters website available at
http://www2.napier.ac.uk/ed/accessibility-matters/creators/index.htm

Freedom Scientific's screen reader JAWS 40 minute demo at
http://www.freedomscientific.com/jaws-hq.asp

Regional support centre (RSC) NE Scotland AccessApps resource available at
http://www.rsc-ne-scotland.ac.uk/eduapps/accessapps.php

Regional support centre (RSC) NE Scotland e-inclusivity blog available at
http://www.rsc-ne-scotland.org.uk/e-inclusion/

TechDis (UK's accessibility advisory service) homepage at
http://www.techdis.ac.uk/

TechDis list of free assistive software list at
http://www.techdis.ac.uk/getfreesoftware

TechDis 'Creation of learning materials' resource at
http://www.techdis.ac.uk/index.php?p=9_7

Vischeck: to check and correct a web page for colour-blind vision
http://www.vischeck.com/