

IT SKILLS

Introduction

As the amount of information available electronically grows and the means of accessing that information expands, it becomes increasingly important to develop the skills to work quickly and reliably in digital environments.

Information and Communications Technology (ICT) now plays a pivotal role in effective study and contemporary clinical practice. A very high number of UK Higher Education Institutions (HEIs) use a Virtual Learning Environment (VLE), such as Blackboard or Moodle, with all 74 HEIs responding to the Universities and Colleges Information Systems Association's annual survey in 2008 declaring they used a VLE (UCISA, 2008). VLEs are products which institutions use to create websites to support student learning. For example, you may find that a lecturer will ask you to use a VLE to:

- access lecture notes or a reading list
- watch a video clip demonstrating a clinical procedure
- listen to a podcast they've recorded to introduce you to a new topic
- participate in an online discussion
- create a blog or wiki
- access past exam papers.

Information Technology also plays a very important part in the modern NHS. A dedicated agency of the UK's Department of Health, NHS Connecting for Health (NHS CFH) co-ordinates the National Programme for Information Technology (NPfIT). NHS CFH provide an excellent summary of their work, and illustrations of how IT systems are being used within the NHS to improve patient care at <http://www.connectingforhealth.nhs.uk/factsandfiction/corporatefaqs/general>

In terms of qualified health professionals, job roles within the NHS are mapped against the [Knowledge and Skills Framework \(KSF\)](#), one of the three core elements of [Agenda for Change](#). This means that roles are described in terms of 5 'dimensions', of which 'Information and Knowledge' is one. This dimension is broken down into 3 areas:

- IK1 Information Processing
- IK2 Information Collection and Analysis
- IK3 Knowledge and Information Resources

More details are available at

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4090843?IdcService=GET_FILE&dID=14564&Rendition=Web

The skills described range from the ability to 'input, store and provide data and information' (IK1, Level 1), to 'develop[ing] the acquisition, organisation, provision and use of knowledge and information.' (IK3, Level 4).

Therefore, it is important to hone your information and knowledge management skills as a student and 'lifelong learner', but your career prospects are also likely to be enhanced by an ability to demonstrate how you are able to meet the specifications of the 'Information and Knowledge' dimension of any post you choose to apply for.

2) Learning Outcomes

By the end of this chapter the student will:

1. Understand the importance of developing information management skills to provide the basis for successful study and future career prospects
2. Understand what is understood by Web 2.0 technologies and how these can assist learning
3. Be able to make informed choice about how they can meet their ICT training needs.
4. Be able to create means to manage the information flows around them
5. Be able to describe how sources of evidence can be evaluated
6. Be aware of the legal framework within which they handle data and steps they can take to ensure they are compliant

3) Key Concepts covered in this chapter include:

1. **Information Management.** It is highly likely that your main challenge will not be where to look for information and having a shortage of information to work with as sources of information available via University and NHS libraries, to say nothing of the internet, are plentiful. Managing access to these sources of information is likely to be more challenging and Web 2.0 tools can assist.
2. **Information Security.** Ensuring that only you have access to your personal information and that your data is stored securely, protected from digital threats.
3. **Social Networking.** Making the most appropriate use of available technologies to support you in keeping in contact with old and new friends, taking University policies into account.
4. **Accessibility.** Ensuring that you are able to access the materials you need and produce the work required by your course, using technologies adapted for your needs.
5. **Selecting appropriate technologies to your needs.** Gaining all the benefits you need from technology to support you in your studies, without overspending.
6. **Finding Online Study Resources** which can be used to increase your ICT skills and also facilitate the background research for evidence to underpin your work
7. **Being aware of terms and conditions of services** to ensure that your online activities are not in breach of local or national policies and laws.

4) Case Study Part 1: Preparing for University Life

Malika is about to start her first year as a student nurse at a University in the south of England. She is quite confident in using computers to assist her in studying as many of her teachers had used a VLE at her school to provide links to additional materials. Whilst preparing to go to University, she is trying to work out whether she should buy a new laptop for her studies or whether she can save money by using the computers provided by the University.

At this stage, Malika should read carefully the Welcome Pack which the University will send her before she arrives and check the IT Services section of their website as many have dedicated sections advising new students. Things to find out include:

- **What computers does the University provide for student use?** How many are there, where are they and when can they be accessed?

- As she is considering using a laptop on campus, **is it possible to connect to the internet wirelessly?** Are there study desks available where you can plug your laptop into the University's network and access the internet? If so, there may be steps she needs to take to ensure the network card she is using is compatible with the University's network, and will need to check the details of how to make a connection.
- **Whether she will still be able to keep in touch with friends and family** using Skype and Facebook from her room in Halls. Such social networking tools can help to offset the disorientation she may feel as she settles into her new environment (Piper and MacDonald, 2008). Does the University have any policies in place about using such software?
- **What kinds of services she will have access to from her room in student Halls.** Are internet connections available within each room as standard or will she have to pay a supplement? Is internet access provided directly by the University or by a third party company? This will affect whether she'll pay directly for internet access and the policies she must adhere to when using the internet. For example, Universities differ in their policies on the use of desktop conferencing services which students can use to help stay in contact with family and friends, such as Skype (www.skype.com) as well as other services such as online gaming.

Individual Learning Activity 1: Improve your IT Skills

The amount of time Universities are able to spend supporting you in using ICT varies considerably and it is advisable that you take responsibility early on for your own skills development.

Whether you prefer to improve your computer skills by getting help from family and friends, in a face-to-face training session, from textbooks or using online guides incorporating audiovisual demonstrations, there is no shortage of options for you to explore. If you are new to computers and the Internet, a 'learning by doing' approach may be best and the BBC's Webwise (<http://www.bbc.co.uk/webwise/>) is an excellent place to start. If you would like guidance on how to use specific programs, for example one of the Microsoft Office Suite programs, then free comprehensive online training is available (<http://office.microsoft.com/en-us/training/default.aspx>)

You may already be fairly confident in using the internet and email but you may have heard friends talking about 'blogs,' 'RSS feeds,' 'Twitter' and 'Wikis' which they've been using to assist in their group projects. These are examples of 'Web 2.0' technologies which are characterised by the high level of personalised services they offer, enabling you to specify which kinds of information you'd like to keep regularly updated upon in easily accessible forms. To help her find out more about some key concepts, visit <http://www.commoncraft.com/> for some user-friendly audio-visual guides.

- **Whether to upgrade her laptop.** Malika's laptop has Windows Vista and Office 2003 installed but she's not sure if this will be good enough to support her in her studies. She needs to find out from the University's website whether there a minimum specification which the University recommends. She should also find out the University's standard document format (e.g. Office 2003 or 2007) from her academic tutor. This will become important if she is asked to submit copies of her work for lecturing staff to review or mark. Will she be expected to submit work electronically or will she need to print it out to hand in? If so, what are the arrangements for printing? If she does decide to buy some new software,

it's worth checking to see if the University is linked to a supplier who is able to provide hardware and software at special student rates, for example <http://www.studentstore.co.uk/>.

- **Whether to upgrade her mobile phone.** Along with her laptop, Malika has also been wondering whether to upgrade her mobile phone as she has heard that more and more online content can be accessed and uploaded from her phone. Before subscribing to expensive phone deals, it is worth her thinking carefully about what she is going to use her mobile phone for. The occasional call home to family and friends? Keeping in touch with new friends at University? Looking up information on the internet? Given that her University stated that wireless internet access is available across campus and that her laptop meets the criteria the University's IT department has set out on its website, Malika decides to use her laptop as the main tool to access the internet and to go for a relatively inexpensive phone for the time being. Depending on how you think you will use your mobile phone and computer is worth thinking about the right phone and deal for you, as you may be able to buy a reasonably priced laptop as part of a subscription deal for your phone.
- **Whether she can 'replay' lectures.** Malika is worried about how she is going to cope with all the lectures she'll need to attend. Some Universities routinely record lectures and make them available to you online to review. However, if this is not the case in your School, or you would prefer to make your own voice recordings of lectures, you might want to think about checking that your mobile phone is capable of creating good quality recordings and that it is easy to transfer these recordings back to your computer. Please note that it is considered good practice to ask for the lecturer's permission before you record their lecture.
- **How to back up her data reliably and securely.** Malika learnt the hard way about the need to back up data when she lost a memory stick with an important piece of A Level coursework stored on it. She is now determined to reduce the risks of this happening again by having a stock of blank CDs and DVDs to save files to as well as setting up a secure online storage space, using Microsoft's SkyDrive (<http://www.windowslive.co.uk/skydrive.aspx>). Please see <http://www.microsoft.com/protect/data/backup/about.aspx> for more information and tips about backing up your files.
- **How to steer clear of computer viruses.** Again, past experience of losing work on her computer due to an infected memory stick has taught Malika that running and regularly updating anti-virus software is time and money well spent. This software often checks the general health of your computer at the same time, for instance checking the state of your disk drives, thus manage it run as efficiently as possible and reducing the risk of unexpected technical problems when you least need them! In some instances, having such software installed may be a condition of you being granted access to the University network. Moreover, avoid problems by making sure that your computer is running the most up to date version of your current operating system. For example, if you are using Windows, use the Windows Update facility (or schedule it to run automatically) and ensure that you at least install all the 'critical updates' found. Use the 'Help and Support' facility within your version of Windows to check how to do this.
- And finally, having invested in these technologies, Malika needs to make sure that she has **adequate insurance** to cover her phone, laptop and mp3 player.

Having gained some knowledge about the services available to her in advance will help Malika to select the most appropriate technologies to buy and subscribe to before arriving at University.

5) Case Study part 2: Settling into University Life

Having completed her enrolment at the University (some of which was done a home by filling in details online!), Malika has begun to settle into Halls and met up with some of the people on her course. This was made easier as she'd set up a group on Facebook (www.facebook.com) named after her University, course and start date and some of her fellow students had found it, joined and started to interact.

The initial period at University can be particularly fraught, with many people competing for Malika's time inviting her to join clubs, pub crawls, or just chat but it is still very important to also ensure that you gain as much information about your new environment from the outset.

This includes:

- **Ensuring you can access materials in way which suits you.** If you have any kind of learning difference (e.g. dyslexia) your University will have experts on hand who can advise you on the resources available (e.g. specialist software) and whether you may be entitled to any grants.
- **Ensuring you attend induction sessions at your University / NHS library.** Not only will you be introduced to the layout of the building and where your subject resources are held, you will also have the opportunity to find out if librarians are available who specialise in your subject area and will be able to provide you with specialist guidance when searching for resources.
- **Familiarising yourself with your library's electronic resources.** Catalogues containing details of all library resources are often searchable via the internet. Moreover, libraries are increasingly subscribing to e-books and e-journals which means these resources will be available to you online, without you needing to travel to the library itself. Students at UK Higher Education institutions will be invited to create Athens accounts (<http://www.athensams.net/individuals.aspx>) which will enable you to access a wide range of online bibliographic databases and online articles. Your subject librarians will be able to advise you on the most suitable resources, which for Nursing would include the British Nursing Index (BNI) and Internurse (www.internurse.com)
- **Finding out if you will have bibliographic software,** such as EndNote, available to you. This will greatly assist you to maintain accurate reference lists and insert relevant details into your written work

Having received her University username and password, Malika is now free to explore the electronic resources the University has to offer. Having found her email account, she was delighted to see a welcome message, but dismayed to see how quickly her Inbox was filling up! Having identified her core sources of information (her email account, the University VLE and the student 'Portal' – a website maintained by the Student Union gathering together key resources) Malika started to wonder how she could ever manage the incoming flow of emails, announcements and updates!

Steps you can take:

- **Manage your email account.** Make sure that you are aware of and understand your email account limit, as most providers of email services only allow you to hold a certain amount of data in your account. If you do not regularly delete and remove unwanted messages containing attachments then your quota will soon be exceeded and you may find that you suddenly stop receiving emails and being able to send them.
- **Take steps to combat spam.** Spam is the common term for 'unsolicited emails' which typically offer dubious services and products, and present a persistent threat to Inboxes. According to the [Google Official Enterprise Blog](#), 'the average unprotected user would have received 45,000 spam messages in 2008 (up from 36,000 in 2007).' Therefore, find out which anti-spam facilities are available to you from your email service provider and use them.
- **Using web-based tools to personalise and streamline the information coming to you.** Technologies are available which enable you to personalise your view of the internet. For example, if your University uses a VLE, you should only see information about the programmes and units you are studying. You can also make use of free services such as [iGoogle](#) which enables you to select 'gadgets' which provide updates from your favourite websites and collects them all in one place.
- **Make use of Really Simple Syndication (RSS) feeds.** These are another method of enabling your favourite web information to come to you, all within a single page or personalised site. An excellent short guide to RSS feeds is provided by the BBC - <http://www.bbc.co.uk/england/rss/>. To get started, you need to subscribe to an online news aggregator (or 'news reader') service. These are usually free, such as [Bloglines](#). Once you have setup your account you can then add RSS feeds so that as soon as your favourite sites are updated, you are instantly updated with a link to the new information within your news reader account. However, you should take time to regularly review the benefits you gain from your current use of technology. For example, news aggregators are powerful tools, but there is a temptation to over-subscribe to services, leading once again to the 'information overload' you had originally set out to avoid. Set your 'information goals' and allocate time accordingly!

Individual Learning Activity 2: The 'Internet Detective'

It is also extremely important to validate the quality of the online resources you are accessing, especially when researching for an essay or dissertation. The 'Internet Detective' is an excellent resource produced as part of the [Intute Virtual Training Suite](#). Go to <http://www.vts.intute.ac.uk/detective/> and complete the tutorial. Create your own checklist which you can use to help make judgements on the quality of internet resources you discover.

6) The Data Protection Act and the JANET Acceptable Use Policy

Finally, you will need to ensure that you protect yourself and others and that you use computing facilities legally. Under the terms of the Data Protection Act (1998), you must ensure that any data you hold on other individuals, where in paper or electronic format, is held legally. The questions you should be asking yourself [can be found here](#). Your academic tutor will be able to

advise you about observing client confidentiality and adhering to data protection guidelines as you prepare reports, essays and projects. You must also think very carefully before uploading materials directly relating to anyone is concerned, as uploading materials onto a website is another form of publishing and is subject to legal guidelines. You will also be bound by the conditions of use of any computing service you use. For example, computer users within UK Higher Education Institutions are bound by the [JANET Acceptable Use Policy](#). On a very practical level, you need to guard the security of your computing accounts, never allowing others to have access to your username and password. Passwords should always be changed regularly and be 'strong.' That is to say, including a mixture of upper and lower case characters, numbers and symbols which make the password harder for humans or computer programs to guess.

Making adequate preparations for University life will put you in an excellent position to make the best use of the wide range of online resources which you will have access to. By following the advice of your University's ICT Services department, you will be able to derive most benefit from systems designed to support your learning, whether you are spending time preparing for individual assignments or undertaking group projects. Taking time to perform basic 'housekeeping' tasks such as updating anti-virus software, regularly running virus scans and backing up your work will help ensure that your electronic tools do not let you down when you most need them.

References

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