LEEDS BECKETT UNIVERSITY

# EMBEDDING DIGITAL LITERACY AS A GRADUATE ATTRIBUTE AT LEEDS BECKETT UNIVERSITY

All our graduate attributes, including digital literacy, should be embedded into every course by including them in course, level and module learning outcomes.

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## Embedding digital literacy as a graduate attribute at Leeds Beckett University

### Key points:

- Digital literacy is defined as the confident and critical use of information and digital technologies to enhance academic, personal and professional development.

- Digital literacy can be viewed as a varied set of capabilities that include information literacy, media literacy, communication and collaboration, along with digital scholarship, professional development planning skills, all of which are underpinned by digital technologies and computer literacy.

- All our graduate attributes, including digital literacy, should be embedded into every course by including them in course, level and module learning outcomes. Not *all* modules need to include *all* the graduate attributes as learning outcomes. They should be mapped holistically across the whole refocused course.

- This guidance contains ideas for embedding digital literacy in the undergraduate curriculum. Think practices, not tools. What do students need to be able to do? What role can digital technology play in allowing them to do that? Don't limit your thinking to information handling. Students can become more digitally literate through challenging tasks involving communication, creative production, capturing and reflecting on their learning, using professional tools, solving real-world multidisciplinary problems, developing their online profile, collaborating with others or via project work.

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## Introduction

Our University's distinctive graduate attributes of enterprise, digital literacy and global outlook have been adopted to equip our students for employment in the 21st century. The Government's 'Networked Nation' manifesto (Warman, 2010) aims to get every working person in the UK online by 2015 and showed that more than 90% of all new jobs require internet skills. The changing nature of the workplace means that growing numbers of our graduates are employed in digital industries or professions that require them to be digitally literate. They need to be enterprising and able to compete in the global economy. They also need these skills to be effective global citizens and interact in the networked society. Digital literacy is an essential enabler for lifelong learning and also remote learning (work-based, on placement, etc.) and online/blended/distance learning that requires our students to be skilled in the use of digital technologies. Digital literacy is therefore a crucial graduate attribute and an ever more significant element of employability.

This document sets out to provide guidance to course teams on the embedding of digital literacy within the curriculum. It offers specific guidance on the framing of course and module learning outcomes in order to embed digital literacy *within the discipline* and the specific course. This is premised on the view that through the process of constructive alignment (Biggs, 2003), the learning outcomes will drive and shape appropriate approaches to learning, teaching and assessment that will ensure that digital literacy is acquired alongside the subject-specific knowledge and skills.

## What do we mean by digital literacy?

Paul Gilster (1997) coined the term 'digital literacy' nearly 15 years ago and proposed that it is about mastering "ideas, not keystrokes". Digital literacy has become an essential life skill, which – if absent or underdeveloped – becomes a barrier to social integration and personal development (Shapiro, 2009). The term 'digital literacy' is widely used and arguably has as many different working definitions. A well-established definition is that used by the European Commission:

> "*Digital Literacy is defined as the confident and critical use of ICT for work, leisure, learning and communication.*"

More recently, Stergioulas (2006) defined digital literacy as:

> "*… the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process.*"

It can be viewed as a varied set of capabilities underpinned by ICT skills (Figure 1).
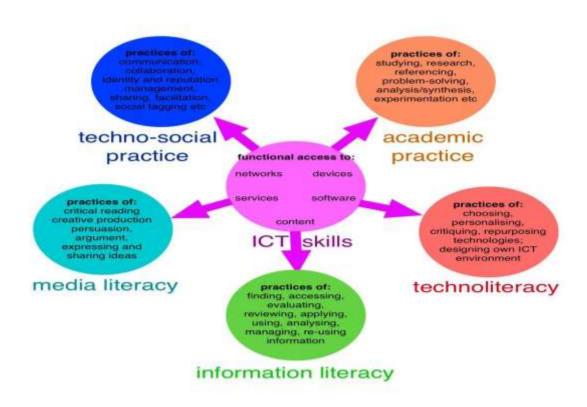


**Figure 1: Digital literacy as a range of capabilities (after Beetham, 2011)**
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## Leeds Beckett University - Digital literacy: definition

The confident and critical use of information and digital technologies to enhance academic, personal and professional development.

- **Computer literacy:** the ability to identify, adopt and use digital devices, applications and services in the fulfilment of activities and tasks whether study, employment or leisure related.
- **Information literacy**: the ability to find, access, evaluate, manipulate, re-use, synthesise and record information whilst understanding issues of authority, reliability, provenance, citation and relevance in digitised resources.
- **Media literacy**: including, for example, visual literacy, multimedia literacy: the ability to critically   read and creatively produce professional communications in the most appropriate media.
- **Communication and collaboration**: the ability to develop and engage in digital networks appropriate to the needs of the participants and context, using a range of digital communications tools and showing awareness of identity and reputation management.
- **Digital scholarship**: the ability to participate in academic and professional practices that depend on digital systems, including the use of virtual learning environments, open access repositories, resource discovery tools and emergent technologies whilst demonstrating an awareness of the issues around content discovery, authority, reliability, provenance, licence restrictions, adaption and re purposing of sources.
- **Academic practice**: the ability to study and learn effectively in formal and informal technology-rich environments, including: use of digital tools to support critical thinking, academic writing, note taking, reference management, time and task management; being assessed and attending to feedback in digital/digitised formats; independent study using digital resources and learning materials.
- **Professional development planning**: the ability to make informed decisions and achieve goals, through the effective use of digital tools and media, which may include e-portfolios, professional online communication & collaboration tools and networking facilities, demonstrating an awareness of identity and reputation management.

The above definitions have been developed with reference to:
Sterigoulas, L.K. (2006) The pursuit of digital literacy and e-inclusion in schools: curriculum development and teacher education. E-start presentation.

http://www.jisc.ac.uk/media/documents/funding/2011/04/Briefingpaper.pdf
http://jiscdesignstudio.pbworks.com/w/file/40474828/Digital%20literacies%20anatomy.pdf

There are many examples of competence frameworks that have been developed to define the skills, knowledge and attitudes that encompass the various digital literacy capabilities. These include the JISC digital literacies development framework and competence framework, and for information literacy the Society of College, National and University Libraries (SCONUL) Seven Pillars Model for Information Literacy, amongst others. Leeds Beckett Libraries and Learning Innovation staff have developed a useful information literacy matrix based on the SCONUL model.

These 7 areas allow course teams to consider which aspects of digital literacy they feel are appropriate to their course and with reference to sustainable literacy, particularly where we use technology to communicate or provide information.

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## Embedding digital literacy across the curriculum

Digital literacy for learning is not a loose collection of separate skills, but their integration into specific education contexts. Although there may be common elements, this varied set of capabilities described above needs to be tuned to the requirements of different roles and the practices of different subject areas. Digital literacy needs to be integrated across the curriculum, rather than regarded an add-on. It is best taught by embedding it into a subject, and working with real-life examples so that learners develop it through authentic tasks in meaningful situations over the whole of their programme of study.

Identify what digital literacy means in your subject area or professional context. Think practices, not tools. What do students need to be able to do? What role can digital technology play in allowing them to do that? Don't limit your thinking to information handling. Students can become more digitally literate through challenging tasks involving communication, creative production, capturing and reflecting on their learning, using professional tools, solving multidisciplinary problems, developing their online profile or collaborating with others, or via project work. Incorporate the use of electronic devices and connectivity within face-to-face teaching and classroom activities rather than just in off-campus learning tasks.

Some modified recommendations for support staff and curriculum teams for embedding digital literacy into the curriculum from the LLiDA (Learning Literacies for the Digital Age) project (Beetham et al, 2009) include:

- Design flexible learning opportunities. For example, make use of a variety of freely available digital content and learning objects to allow students a choice of support materials that suit their individual preferences and learning styles

- Situate those learning opportunities, where possible and appropriate, in authentic contexts (workplace, community, placement)

- Design learning opportunities for highly interconnected individuals, operating in distributed networks of expertise. For example, where appropriate encourage students to access scholarly and/or professional networks as part of your learning design

- Continually review how technologies are integrated into curriculum tasks

- Support learners to use their own technologies and to develop effective strategies for learning with technology

- Use assessment and feedback to encourage innovation in learners' approaches to study, rewarding exploration as a process: current assessment régimes often reward conservatism

- Support learners' developing self-efficacy and self-direction in learning, empowering them to navigate increasingly complex learning landscapes that may involve a range of digital tools such as blogs, wikis and social networking software

- Support learners' personal reflection, progression and planning, for example by engaging with e-portfolios and learning records.

Use the e-tools within X-stream effectively as an integral part of teaching and learning in the module rather than as a bolt-on repository. Use online assignment submission and make effective use of various communications tools including email, discussion boards, instant messaging, video conferencing, mobile phones and clickers. Use ubiquitous collaborative tools such as wikis, group project management tools, electronic document management, and document sharing and versioning tools. Digital literacy skills can also be developed through engagement with e-feedback, e-materials and online problem-solving tasks, as well as Personal Development Planning using an e-portfolio. Get students to use web authoring tools to design and

create online materials/resources as part of their learning activities and encourage them to use multimedia formats to present their ideas. Consider assessments based around the use of digital technologies and media, or requiring digital collaboration or production of a digital artefact such as a reflective digital story of their experiences.

As course teams start to work on the refocusing of their courses they should refer to the [course development principles](#) This document includes suggestions about how to integrate all graduate attributes seamlessly into courses. With respect to the identity of your course you need to consider the uniqueness and distinctiveness of the subject and what opportunities this offers for the development of digital literacy skills within the refocused content and delivery. Consult your academic librarian who can assist you with the embedding of information literacy into the curriculum.

At our University we expect each programme to add its mapping of digital literacies to its programme description and expect digital literacy to be embedded appropriately throughout programme specifications and module handbooks. Not *all* modules will need to include digital literacy as a learning outcome but it should be mapped holistically across the whole course to ensure that students are digitally literate on graduation. It will be helpful for course teams *to* review *current practice* of technology-enriched learning experiences. This mapping will have two outcomes: it will make explicit to students and staff the digital literacies their programmes currently develop and provide a baseline for programmes subsequently to review their offerings and consider redesigns that maintain or enhance their digital currency. It is especially important that the mappings are considered and updated in annual programme reviews; they should be critically appraised for currency and where necessary programmes should be redesigned at periodic review.

## Examples of learning outcomes for digital literacy

This section contains a few examples to illustrate how digital literacy might be incorporated into course documentation. Digital literacy should be embedded into every course by including it in course, level and module learning outcomes to ensure that the student entitlement to digital literacy is met on graduation.

It would be helpful to students and employers to articulate both the generic and the discipline-specific digital literacies that learners will develop in their programmes of study. A few examples of generic outcomes that incorporate digital literacy are given below *for illustration only*. It is *not* being suggested that these are comprehensive or prescriptive or should all be adopted, but they can offer useful pointers for phrases or concepts to use. Not all will be suitable for particular disciplines but you might find some of them could be adapted. We suggest that course teams are best placed to decide on the wordings and the final mapping of learning outcomes. Course teams will be able to define how digital literacy relates directly to their own students. Different aspects of digital literacy are likely to be achieved with different levels of proficiency depending upon their relevance to the discipline/professional context.

These are just some examples of possible generic outcomes you might want to modify for your own course:

Students will be able to [make appropriate subject-specific substitutions to the bracketed sections]:

- use appropriate e-tools to locate, access, evaluate, utilise and cite diverse information sources that facilitate learning and critical inquiry of [ the subject] and adhere to the standards of academic honesty in their use of that information

- access, store, organise and retrieve information and media relevant to [the subject] from multiple digital sources for practical application and integration into existing knowledge

- evaluate and select digital tools based on their appropriateness to specific tasks related to [specific areas of practice]

- effectively create and publish content in multimedia formats to communicate opinions and ideas of [the subject] through a range of channels

- demonstrate creative thinking, construct knowledge, and develop innovative products and processes relating to [the subject] using technology

- use models and simulations to explore complex systems and issues relating to [specific areas of practice]

- use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using appropriate digital tools and resources

- proficiently manage group interactions and engage in online communities and professional [subject] groups using multiple technologies

- contribute to project teams to produce original works or solve problems relating to [the subject]

- analyse the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, lifelong learning and career needs with respect to [the subject]

- confidently use digital technologies to reflect on, record and manage their lifelong learning of [the subject]

- recognise that digital literacy choices might impact on future access to data, resources and information.

## Thinking about digital literacy at the different academic levels

By the end of their course students will be expected to be able to demonstrate that they are competent with respect to digital literacy, but not all students will demonstrate this attribute to the same level or at the same time. This will depend on the subject being studied and the type and level of programme students are undertaking.

Some disciplines may place greater emphasis on particular learning outcomes at certain points. These outcomes would therefore receive greater weight than others at certain levels. Many aspects are likely to be performed recursively, in that the reflective and evaluative aspects will require returning to an earlier point in the process, revising this and repeating the steps. There is not therefore a 'one size fits all' standard linear approach to developing the attribute of digital literacy during the course of a programme of study.

These are just some examples of possible level outcomes you might want to modify for your own course:

At Level 4, students will be able to identify and discuss:

- their individual digital literacy skills and practice and how they impact on others
- the impact the development of digital literacy has on their discipline.

At Level 5, students will be able to evaluate and demonstrate:

- their individual attitudes, values and skill set for being digitally literate on their course, in the workplace and in the wider world
- the impact of diverse contexts where they have shown digital literacy skills and how this has influenced the outcome of the specific practice of their discipline and their career aspirations.

At Level 6, students will be able to apply a critically reflective approach to:

- how their subject, work-based and generic life skills have been influenced by developing specific digital literacy skills
- their own digital literacy skills and how they can help to shape and influence their future career and lifelong learning beyond the University
- the digital literacy skills they can bring as a graduate to the workplace
- the impact their use of new media literacy choices may have on sustainable development.

## Module Learning Outcomes

Galley (2011) has described how the Open University learning design approach can be used to support module teams to design a module to develop digital literacy.
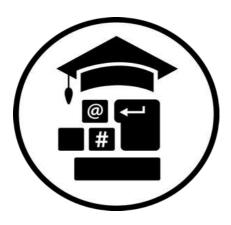
A few examples follow, to illustrate how more subject-specific learning outcomes might be modified to incorporate some digital literacy dimensions:

- Create and publish an online gallery with examples and commentary that demonstrate an understanding of [a specific aspect of practice]

- Select digital tools or resources to use for a [subject-specific task] and justify the selection based on their effectiveness/accuracy.

Below are a couple of examples of how existing module outcomes have been modified to make digital literacy more transparent and explicit for students.

| Original learning outcome | Modified learning outcome(s) |
|---|---|
| By the end of the module students will be able to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences (Level 6) | By the end of the module students will be able to use appropriate online communication tools to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences using multimedia formats |
| By the end of the module students will be able to critically evaluate their work experience placement (Level 6) | By the end of the module students will be able to use an e-portfolio tool to critically evaluate and reflect upon their personal development during the work experience and identify future learning needs to support their career aspirations *or* By the end of the module students will be able to use an e-portfolio tool to critically evaluate and reflect upon the practical application of their academic studies to the workplace |
| By the end of the module students will be able to evaluate the appropriateness of a wide range of approaches to solving problems related to Education Studies (Level 5) | By the end of the module students will be able to select appropriate digital technologies, applications and functions suitable for a specific task or to solve a problem, and apply them to support academic study of Educational Studies |

| By the end of the module students will be able to communicate the results of their study/work accurately and reliably, and with structured and coherent arguments<br>(Level 4) | By the end of the module students will be able to communicate the results of their study/work accurately and reliably, and with structured and coherent arguments using a range of media |
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