Towards an understanding of ‘Digital Literacy(ies)’

Pauline Hagel
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Abstract

This report is concerned with the conceptualisation and definition of digital literacy in the context of Australian higher education. It draws on a diverse literature in proposing a working definition of digital literacy to inform the Deakin University Library in its work with the University’s faculties.

This report forms the first of a two-stage review. The second stage of the review is focused on identifying good practice in digital literacy. The findings of the second stage of the review are encompassed in a companion report titled: What is good practice in the development, assessment and evaluation of digital literacy for graduate employability?

The literature reviewed for the current report was conducted in late 2012 and draws on internal university policy documents, various national and international documents and literacy frameworks, previous reviews of the topic, and journal articles that are concerned with conceptualising information on digital literacy for higher education.

The report concludes by identifying the various factors and stakeholders that influence how digital literacy is conceptualised at Deakin University and proposes a working definition of digital literacy as a graduate learning outcome.

Keywords: digital literacy, higher education, graduate outcomes, stakeholders, digital literacy competencies

Introduction

This report forms Stage 1 of a two-part literature review of digital literacy to inform the practice of the Deakin University Library. Stage 1 of this investigation is concerned with conceptualising and defining digital literacy. The purpose of the Stage 2 report is to establish what constitutes good practice within the higher education sector in the development, assessment and evaluation of digital literacy.

In the current report, ‘definition’ is interpreted in the broader sense of providing an explanation and interpretation of the concept(s) of digital literacy. In providing an explanation and interpretation, the report will also consider the origins and evolution of the term digital literacy, its relationship with related terms and alternative views of digital literacy. Additional, as indicated by the title of the report, it gives consideration to whether the term ‘digital literacy’ should be expanded to that of ‘digital literacies’.

The report is concerned also with what constitutes an appropriate understanding and definition of digital literacy in the context of Deakin University. The question of an appropriate understanding and definition for the Deakin context begs further ones such as: ‘appropriate for what?’ and/or ‘appropriate for whom?’ The answer to the ‘for what’ question is found in Deakin’s vision for ‘cloud and located learning’ and its LIVE initiative which involves the embedding of eight graduate learning outcomes in the curriculum. The answer to the ‘for whom’ question is more problematic. There are various stakeholders within Deakin whose perspectives about digital literacy are relevant including the University Executive, Faculties and their disciplines, academics/teachers, students, the Library, IT services and academic skills units. There are also external stakeholders for digital literacy including the broader higher education community and prospective employers of Deakin graduates. These different groups have varying stakes in the concept and/or practice of digital literacy. An appropriate understanding and definition will therefore be one which can encompass different perspectives – particular among discipline areas. It will also be one that provides boundaries around the concept of digital literacy to enable different support and service areas within the university to understand their stake in and responsibilities for developing digital literacy.
The report is structured into four sections. First, the method and scope of review is described. Second, the report describes the origin and evolution of concepts of digital literacy and seeks to identify the common elements of these conceptions and definitions. Third the report discusses the Deakin context and the implications of this context for a definition of digital literacy. In the final section, a definition of digital literacy for the use of the Deakin University Library is proposed, explained and justified in the light of the literature.

Method

The review was conducted in 2012. The method of review (covering both Stages 1 and 2) included:

- a review of key Deakin University documents including those related to graduate learning outcomes and ‘cloud and located learning’;
- a review of relevant documents or literacy frameworks from organisations including the European Union (EU), Organisation for Economic Cooperation and Development (OECD), Association of College and Research Libraries (ACRL), Society of College, National and University Libraries (SCONUL) and the Australian Qualifications Framework (AQF),
- a consideration of findings from previous reviews of the topic, most notably from Bawden (2001 and 2008) and Lankshear and Knobel (2008). Bawden (2001) provided the first broad review of the links between different literacies and particularly, between that of information literacy and the then emerging concept of digital literacy. Both sets of reviews are particularly relevant to the purposes of this report.
- a search of databases (namely, Ebsco, LISTA, Sage, Emerald, ABI Inform and Expanded Academic ASAP) using the search terms: ‘digital literacy’ and ‘higher education’. Retrieved from these searches were articles published in ERA ranked A* and A journals or, in the case of those identified from LISTA, A*, A and B ranked journals; and
- the inclusion of selected, frequently cited or influential reports or papers on digital literacy, regardless of journal ranking.

Conceptions of digital literacy

There is considerable agreement in educational and policies circles that digital literacy is important, but less agreement about how to conceptualise and define it (Anderson 2006; Bawden 2008; Kenton and Blummer 2010; Lankshear and Knobel 2008; Martin 2006).

The broad case for the importance of digital literacy is made on two bases: the importance of ‘foundational’ literacy for participating effectively in society; and, the impact that digital media is having on the way people access, use, read, create and communicate information. Combining both views, digital literacy can be conceived as a ‘survival skill’ (Roberts 1995), a ‘21st Century’ skill (PIAAC 2009; Ghaith 2010; Ilomaki, Kantosalo et al. 2011) or as the abilities necessary to function in society (Bawden 2008).

Paul Gilster first popularised the term in his book, *Digital Literacy*, published in 1997. He conceived of digital literacy as, simply, ‘literacy for a digital age’ (Bawden 2008: 18). Since the publication of his book there have been many attempts to develop the concept of digital literacy further. These efforts, reviewed elsewhere (namely, Lankshear and Knobel, 2008; Bawden, 2001 and 2008), reveal confusion and little consensus about the meaning of digital literacy. The factors that have contributed to this confusion are outlined in the following section.

A breadth of views and ‘literacies’

There are several key factors that contribute to the confusion over the concept of digital literacy. First, ‘digital literacy’ is not a new concept. It has been preceded by a succession of other ‘literacies’ most notably, information literacy, media literacy, and information and communication technologies (ICT) literacy. These literacies have
become ‘legacy’ perspectives which continue to influence conceptions of digital literacy. (As discussed later, there is some consensus that ‘digital literacy’ integrates these three literacies.)

A second and related factor is that the different literacies that contribute to digital literacy (e.g., information, media and ICT literacy), have developed within different traditions of practice leading to some ‘turf wars’ over the concept of digital literacy. The following discussion provides a brief overview of the contribution to digital literacy of these three literacies.

**Information literacy.** This literacy has been primarily the domain of the library community. The original approach to information literacy focused on information search skills but it widened to cover the evaluation of information and the appreciation of different types of information sources (Bawden 2008). This widening was also associated with name changes to capture this form of literacy: from library skills, to library literacy and, later, information literacy. As the information literacy field developed, different professional bodies began to draw up definitive lists of skills and standards that aimed to capture the essence of digital literacy (Johnston and Webber 2003).

One of the first societies to do so was the American Library Association in 1989 which identified a student learning process for the development of their information literacy (Bawden 2008). Other frameworks have been developed by the Council of Australian University Libraries (CAUL) and Australian and New Zealand Institute for Information Literacy (ANZILL), the Association for College and Research Libraries (ACRL). More recently, the UK-based Society of College, National and University Libraries (SCONUL) has proposed ‘7 Pillars of information literacy’ that include key information activities of the information literate: identify, scope, plan, gather, evaluate, manage, present. For each pillar, SCONUL suggests a set of skills/competencies and attitudes/understandings (SCONUL 2011).

Johnston and Webber (2003: 338) have been critical of what they see as a ‘recipe approach’ to information literacy represented in some of these frameworks. Such frameworks have also been criticised as linear processing models for information handling (Bawden 2008). Nonetheless, as discussed in the following section, frameworks of information literacy that have expanded to include the evaluation of information have close affinity with common definitions of digital literacy.

**Media literacy.** Media literacy, too, had developed from professional practice in a specific field, in this case, that of communication specialists. Media literacy is concerned with the creation, production, reading, communication and critical assessment of media and texts. It also encompasses both the technical and cultural forms of media and the way media – texts and visuals – communicate meaning (Littlejohn, Beetham and McGill 2012: 553). Critical assessment is one of the defining features of media literacy. Goodfellow (2011: 133) noted that the media literacy community developed a ‘uniquely critical perspective’ because it originally focused more on the interpretation of media practices than on the use of media. Notwithstanding this uniquely critical perspective, media literacy shares some common concerns of information literacy and is often seen as a subset of information literacy (Bawden 2001).

**ICT literacy.** The practice of information technology (IT) and computer specialists has driven a focus on ICT literacy. The ICT Literacy Panel (cited in Mackey and Jacobson 2011: 65) defined this literacy as: ‘...using digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society’.

Terms used by the IT community have changed over time. Some earlier terms used before the adoption of ‘ICT literacy’ were ‘computer literacy’ and ‘e-literacy’ (Goodfellow 2011). This changing terminology is not surprising given this literacy is concerned with users’ technical proficiencies in using technology tools (Mackay and Jacobson 2011: 65). Consequently, as tools and hardware have changed or evolved so too has the language used to describe the literacy demands of ICT.

Differences between the ‘parent’ fields of information sciences, media studies and IT have led to differences in how digital literacy is conceived. In discussing the situation in Norway, Sefton-Green et al. (2009: 114) argued that media and information technology have long been treated as different domains and continue to be distinguished...
within digital literacy due to:

...differences in teachers' backgrounds, where media education teachers mostly came from humanities backgrounds, and technology teachers came from the natural sciences, this split has been manifested in different conceptualizations of digital literacy in curriculum and educational practice across the learning areas.

These three areas of literacy have developed their own competence frameworks (Ilomaki, Kantosalo et al. 2011) which all purport to identify the key components of their respective literacy. However, the work of the librarians in information literacy and that of the e-learning specialists have been rarely 'joined up' (Littlejohn, Beetham and McGill 2012: 552).

A third factor that has led to confusion over digital literacy derives from the roles played by various international or national policy bodies and education institutions in promoting and championing digital literacy. These bodies and groups can vary in their history of engagement with literacy and their agendas for digital literacy. These factors, in turn, influence how each group conceives digital literacy. Several examples follow.

OECD/Programme for the International Assessment of Adult Competencies (PIAAC). The PIAAC has developed an assessment framework for what it sees are the broad literacy skills required for the 21st century including that of reading in digital environments (PIAAC 2009). In doing so it has extended its earlier conceptions of literacy as embodied in its International Adult Literacy Survey in the 1990s and its Adult Literacy and Life Skills Surveys of 2003 and 2006. That is, the starting point for the PIAAC’s conception of digital literacy remains the foundational literacy skills of reading and writing.

Primary schooling. Policy groups such as the OECD and institutions involved in primary-level schooling have long focused on developing the ‘foundational’ literacies in reading and writing of their respective clientele. However, schools themselves, have also developed expanded concepts of digital literacy as they seek to capture the (perceived) emancipatory and creative potential of digital media (Roberts 1995; Goodfellow 2011). Further, with the spread of ICT and ubiquitous access to digital media, issues have arisen in schools relating to cyber-bullying, identity protection and the digital divide. Responses to these issues have also been incorporated into digital literacy practices throughout the school sector.

The Higher Education sector. Universities in turn, have been influenced by approaches to and debates about digital literacy that have come from national or international policy bodies (Littlejohn, Beetham et al. 2012) and/or other parts of the education system (2011). However, universities have been less concerned with functional literacy and more concerned with what makes a literate (increasingly a digitally literate) person (Roberts 1995). Further, the institutional and disciplinary values of universities mean that they have been less concerned also with the creative opportunities of digital media and more concerned with critique and critical analysis of information (Goodfellow 2011; 138).

In addition to foundational literacies, and the separate practices of media, information and ICT literacies, the interdisciplinary nature of universities means that students also require ‘academic literacies’ to perform and succeed. Academic literacies research see literacies as ‘contextualised social and cultural practice’ (Lea and Jones 2011; 380). Accordingly, a literate student is one who can ‘read’ the discourse and pedagogical practices within each discipline they encounter in their studies (Lankshear and Knobel 2008). The implication of this socio-cultural perspective of literacy for the conception of ‘digital literacy’ is to emphasise the latter’s diverse forms. As Lankshear and Knobel, (2008: 5) suggest, digital literacy can be viewed as ‘shorthand for the myriad social practices and conceptions of engaging in meaning making mediated by texts that are produced, received, distributed, exchanged etc by digital codification’.

A further influence on universities has been the competence movement (Ala-Mutka, Punie and Redecker 2008; Goodfellow 2011; Ilomaki, Kantosalo et al. 2011) which is transforming higher education by shifting the focus from academic learning to the demonstration of individual competence and the acquisition of economic capital. Goodfellow (2011; 14) argues that:

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.. in this sense they [practices] are transformational, as they move pedagogy away from a conventional focus on disciplinary knowledge expressed as 'academic' writing (albeit shaped and differentiated by disciplinary discourse) and from the ethos of debate and principled scepticism, towards a more contingent culture of participation in digitally mediated professional, occupational and lifelong learning communities.

So far the argument of this report is that the concept of ‘digital literacy’ is still contested due to a number of factors. First, that digital literacy has a number of ‘parent’ literacies notably, information literacy, media literacy, and ICT literacy. Second, that these parent disciplines have different foci and priorities for literacy which means that theorists and practitioners from each tradition will bring different emphasises to the concept of digital literacy. Third, the concept of digital literacy has been influenced by the roles played by various international or national policy bodies and education institutions in promoting and championing digital literacy. While some are mainly concerned with foundational literacy skills in a digital environment, others are more concerned with higher order and/or transformational learning. Fourth, higher education brings its own concerns and agendas to the concept of digital literacy. Its values around synthesis, critical thinking and knowledge creation influence its ‘take’ on digital literacy. Additionally, the competence ‘push’ in higher education requires universities to assist students demonstrate their individual competence, including the competence of being literate in a digital environment.

The factors identified above have led to various conceptions of digital literacy, particularly in relation to the ‘literacy side’ of the concept. The diversity of views points to the plurality of digital literacy and has led to some to recast the term as ‘digital literacies’ (see, Lankshear and Knobel 2008). On the ‘digital side’ there is more agreement about the implications for reading and communication that derive from the changes occurring in the use of digital text and media. These implications of the use of digital technologies are discussed further in the following section.

Digital media – implications for literacy

Digital technologies provide a different medium for text (whether written, verbal or multimodal), and different ways to access, manipulate, store and communicate. While a literate person has always had to deal with texts of different genres (reports, essays, presentations), formats (continuous or non-continuous), physical layouts (lists, matrices etc.) and type (linguistic and rhetorical), digital text has some unique features and therefore, new literacy challenges (PIACC 2009; Lea and Jones 2011; Jones and Flannigan 2006).

The unique features of digital text include its hypertext structure, interactivity and navigational features (PIACC 2009). The hypertext nature of digital text means information may be ‘nonlinear, recursive and interactive’ (PIACC 2009; 5). In addition to these unique features of digital text, digital technologies place new literacy demands on users due to the volume of information available to them and, for much of it, its uncensored nature (Bawden and Robinson 2009). While users may draw on their foundational skills in reading and writing, they must also develop advanced skills in navigating, evaluating, and interpreting data (see also, Eshet-Alkali and Amichai-Hamburger 2004). Because of the wide range of hybrid texts, they also need to engage in a ‘sophisticated level of rhetorical complexity in bringing...different texts together’ (Lea and Jones, 2011: 385).

Further, users need to understand the provenance of information and the ethical and legal use of information, and learn to protect the security of and privacy of their own information (PIACC 2009; Nelson, Courier and Joseph 2011). (In higher education, the phrase, ‘digital scholarship’ has been coined to cover issues to do with privacy, security and ethical use of digital information [see, Leeds Metropolitan University 2011]. While acknowledging that the concept of digital scholarship is linked to that of digital literacy, the former is not discussed further in this report.)

Digital technologies also offer new opportunities for text creation and communication where new text is created from existing sources (Aviram and Eshet-Alkalai 2006). While this recreation from existing sources is also possible for non-digital text, digital technologies allow this creative, ‘reproductive’ process to occur more easily.

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In summary, digital technologies offer some unique literacy challenges in addition to offering creative opportunities. The literacy frameworks of information specialists have expanded, accordingly, so that the management, evaluation and authentication of information have been brought to the fore. Further, media literacy has long championed critical assessment and creative production. In turn, these concepts of literacy have influenced the breadth of concerns included in the concept of digital literacy.

Notwithstanding these features and affordances of digital text and technologies, Gilster’s (1997) original idea of digital literacy was that it was not primarily about technology or ‘mastering keystrokes’. Rather, it was about literacy in an age that, coincidently, is digital. As Bawden (2008; 19) asserts from his ‘reading’ of Gilster: ‘It is about the ideas and mindsets, within which particular skills and competencies operate, and about information and information resources, in whatever format.’ Nonetheless, Bawden (2008: 28) observed that:

> Digital literacy seems an appropriate and sensible name, in an age where information comes mainly in this form though with the caveat that an important part of digital literacy is knowing when to use a non-digital source.

From his review of the concept of digital literacy, Bawden (2008; 29-30) concluded that its agreed components can be defined within four dimensions: underpinnings; background knowledge, central competencies and attitudes and perspectives. These dimensions are useful for fleshing out the concept of digital literacy first proposed by Gilster (1997).

By ‘underpinnings’, Bawden (2008) was referring to what he saw as the basic foundational and ICT literacy that people need just to function in the first place. (Bawden [2008; 29] reserved his judgement about whether these foundational literacies can be assumed or considered part of digital literacy.)

The background knowledge to digital literacy includes an understanding of how knowledge ‘comes to be’. That is, about how information – in both digital and non-digital forms – is created/authored, legitimised and communicated.

The central competencies identified by Bawden (2008; 29-30) included those that feature in most information and media literacy frameworks. That is, competencies of finding, assembling, reading, evaluating, creating and communicating information.

Finally, Bawden (2008; 30) identified two attitudes and perspectives which capture what is ‘sensible and correct behaviour in the digital environment’: those of independent learning and ‘moral/social literacy’.

Bawden’s (2008) dimensions provide a more comprehensive perspective on digital literacy by indicating that digital literacy skills interact with attitudes and knowledge. This is a particularly relevant perspective in the context of Deakin University where digital literacy is seen as one of eight, interrelated, graduate learning outcomes. Accordingly, Bawden’s four dimensions are used in the final section of this report in proposing a definition of digital literacy for use by the Deakin University Library.

**Conceptions of digital literacy: A summary**

This section of the report has provided an overview of the evolution of the concept of digital literacy and the diverse viewpoints that have contributed to it. A number of conclusions are drawn from this review. (Some of these same conclusions have been drawn also from earlier reviews, namely from Lankshear and Knobel 2008; and Bawden 2001 and 2008.) The conclusions include the following:

- Digital literacy integrates information, media and ICT literacies. It is a pluralist concept that may be better conceived as, ‘digital literacies’ (Lankshear and Knobel 2008).
The concept of digital literacy is primarily about literacies rather than digital technologies. Some of the key information and media skills required to be literate apply regardless of the technologies in use or the format of the text.

What it means to be literate is socially-situated: within a university there are various disciplinary and professional practices that influence how people engage in making meaning of texts (Lankshear and Knobel 2008).

There are some unique aspects of digital media that should be encompassed in a concept of digital literacy, namely the issues of navigation and information management.

The sheer influence and ubiquity of digital media mean that digital literacy encompasses other concerns including the ethical and legal use of information and maintenance of the security and privacy of the user’s – and others’ – information.

Synthesis and critical assessment need to be at the core of digital literacy due to the amount and nature of information available through digital environments. This is particularly true for a university given its values and remit.

Digital literacy is not a stationary concept: as ICT changes, what it means to be digitally literate may need to evolve also.

Basic reading and writing literacy and basic ICT literacy are the foundations of digital literacy. In a university setting, these may be assumed rather than taught skills.

After Bawden (2008), digital literacy may be conceived as comprising several dimensions: underpinnings, background knowledge, central competencies, and attitudes and perspectives.

The Deakin context for digital literacy

As a university, Deakin’s approach to digital literacy will be different to those envisaged by the EU, OECD, and other levels of education where there is a greater emphasis on foundational aspects of literacy and digital competence. A Deakin University concept of digital literacy will need to reflect the central place of knowledge creation and the expectation that students will develop higher order cognitive skills such as those of synthesis, critical thinking and analysis. However, while undergraduates may be expected to come to university with basic foundational skills, this assumption may need to be tested in light of the increased participation in higher education of students from various equity groups.

This section considers three aspects of the Deakin University context: the AQF standards that apply to Bachelor programs in Australia; Deakin’s objectives for ‘cloud and located’ learning and, the graduate learning outcomes (GLOs) that are being used in the revisioning of Deakin University’s undergraduate curricula.

Australian Qualifications Framework (AQF)

The Australian Qualifications Framework (AQF 2011) defines the broad parameters of education in Australia by specifying the skills expected at different levels of education. For graduates of a Bachelor Degree, the AQF states that they will have:

- cognitive skills to review critically analyse, consolidate and synthesise knowledge
- cognitive and technical skills to demonstrate a broad understanding of knowledge with depth in some areas
- cognitive and creative skills to exercise critical thinking and judgement in identifying and solving problems with intellectual independence
- communication skills to present a clear, coherent and independent exposition of knowledge and ideas (AQF 2011; 46)
These skills for Bachelor degree graduates are largely higher order skills. They also fit with aspects of Bawden’s (2008) concept of digital literacy. That is, they require some of his ‘central competencies’ of synthesis and critical analysis; and the ‘attitudes and perspectives’ of judgement and independence. Similarly, the skills listed in the AQF for Bachelor level courses are also reflective of core media literacy skills of critical thinking and creativity.

Cloud and located learning at Deakin

Through the strategic plan LIVE the future, Deakin University is envisioning a new learning and teaching environment that combines ‘Cloud’ and ‘Located’ learning (Deakin University, 2012c). All units at Deakin will be required to demonstrate a balancing and integration of cloud and located learning.

Using the facility of ‘cloud’ services, ‘cloud learning’ at Deakin will involve: ‘reimagined suites of carefully designed and integrated short, accessible, highly visual, media-rich, interactive learning experiences rebuilt for the screen’ (Deakin University 2012a; 4). Additionally, ‘located learning’, as it is proposed, will ‘reimagine the use of lecture theatres, classrooms and other places where students have access to located learning experiences – on campus, in a learning centre, or in industry settings such as hospitals, schools and construction sites.... [providing students with] the opportunity to engage with educators and peers in new ways’ (Deakin University, 2012a; 5).

A further proposition made in this document is that these learning environments will require enhanced skills of learners and requirements for ‘digital competence’ (Deakin University, 2012a; 5).

In these proposed learning environments, if it is not true already in higher education, students will have access to extensive content, available from many sources and presented in many different formats. According to the CReaTe Program document (Deakin University, 2012a), finding content is not difficult. What is more problematic is learner competence in information handling and judgement:

What learners lack is the ability to navigate, bring together and develop meaning for this content. They want to hear what practitioners say about the content and how it is used and applied. Learners seek to understand how the content leads to new research and the development of new knowledge (Deakin University 2012a; 4).

Elsewhere the CReaTe document suggests that students will require various literacies including those identified by Ilomaki, Kantosalo and Lakkala (2011) of media and communication, technology and computing, literacy and information science. Students will need to employ these literacies to:

...understand the power of images and sounds, to recognize and use that power, to manipulate and transform digital media, to distribute them pervasively, and to easily adapt them to new forms (The New Media Consortium, 2005 cited in Deakin University 2012a).

This vision for learning at Deakin University emphasises some of the dimensions of digital literacy identified by Bawden (2008) including the importance of judgement, and the centrality of information competencies in navigating and handling information. Further, this vision acknowledges that learning is socially-situated within disciplinary and professional contexts – a core premise of a sociocultural perspective of digital literacy (Lankshear and Knobel 2008).

Considerations in understanding and defining digital literacy for the Deakin University Library

Based on both the literature review and discussion of the Deakin context, there are various factors and stakeholders that influence how digital literacy may be understood and defined at Deakin. In summarising these factors, it is proposed that a definition of digital literacy for the Deakin University library should be:

- consistent with conceptions and definitions in the literature;
appropriate for Bachelor degrees under the AQF;
reflective of Deakin University, its current mission, and its objectives around cloud and enhanced located learning and graduate learning outcomes (see following section);
responsive of the context of learning within different disciplines and faculties of the university;
meaningful for students and communicating to them the skills they require to be digitally literate;
meaningful for academics and services area staff and communicating to them what they need to do to assist students acquire the skills they need to be digitally literate; and,
meaningful to external stakeholders including prospective employers and the broader community so that it communicates to these stakeholders’ skills that graduates of Deakin University have attained.

Digital literacy as a ‘Graduate Learning Outcome’ (GLO) at Deakin University

Deakin University has adopted eight graduate learning outcomes (GLO) and is in the process of redeveloping courses to reflect these GLOs in addition to demonstrating cloud and located learning.

The eight GLOs are: discipline-specific knowledge and capabilities, communication, digital literacy, critical thinking, problem solving, self-management, teamwork and global citizenship (Deakin University 2012b, Deakin Learning Futures). These GLOs are conceived as minimum performance standards that prospective graduates need to be able to demonstrate.

Deakin University’s GLO of ‘digital literacy’ is defined as: ‘using technologies to find, use and disseminate information’ (Deakin University 2012b). While digital literacy as a GLO is only one of eight that, presumably are designed to form an integrated whole, by itself it has some limitations:

- it focuses on narrow, technical skills of information literacy;
- it is a linear conception of digital literacy;
- it does not reflect key findings from the literature about the centrality of synthesis, critical thinking and ethical use of information;
- it does not encompass some of the important skill requirements specified in the AQF for graduates at the Bachelor level (such as analysis, synthesis, creativity); and,
- it does not encompass the advanced information skills necessary for Cloud and Located learning nor the independence and self-management these environments require.

However, the Deakin University definition has the virtue of simplicity. Further, and importantly, it is acknowledged that some of these ‘missing’ skills and attitudes – are encompassed elsewhere among the other six GLOs, as follows:

- GLO 3 – critical thinking
- GLO 5 – independent working and self-management
- GLO 7 – ethical behaviour

Despite the inclusion of the above three competencies within other GLOs, there remain other competencies of digital literacy suggested in the literature that are not explicitly present in any of the GLOs. These include the competencies of synthesis and creative use of digital information.

Arguably, a more complete understanding and definition of digital literacy would encompass the skills of synthesising and creative use of digital information in addition to those of critical thinking from GLO 3 and ethical
behaviour in the use of information in GLO 7. These should apply even if the GLO is considered a minimum performance standard for graduation at a bachelor level.

Further, it is important that Deakin University’s understandings and definition of digital literacy meets the expectations of external stakeholders such as employers and other universities. Finally, a more comprehensive statement of digital literacy, and one that acknowledges its plurality, may be more successful in encompassing a wider range of practices within the university, in particular among disciplines where critical perspectives are central and prominent.

A proposed ‘working definition’ of digital literacy(ies)

The purpose in proposing the following definition of digital literacies is to enhance understandings of this concept within the Deakin University Library. While the definition specifically mentions digital technologies, it focuses on literacies, not technologies, and seeks to encompass information skills irrespective of the media format.

Definition of digital literacies:

using digital technologies to find, evaluate, synthesise, create and communicate information in an ethically and legally responsible manner.

Using Bawden’s (2008) dimensions, this definition is further described in terms of its underpinnings, background knowledge, central competencies and attitudes and perspectives.

Underpinnings:

(Arguably, these underpinnings may be assumed as foundational literacies for students entering university education. However, provision may need to be made to assess these foundational skills for commencing students.)

- Foundational literacy
- Basic ICT skills

Background knowledge:

- The nature of information – forms, sources/origins, understanding of the ‘publication chains’, authorship, provenance

Central competencies:

- Finding/searching
- Navigating
- Synthesising
- Critically analysing
- Creating
- Communicating

Perspectives:

- Independent learning
- Ethical use of information (respect for privacy)
- Ethical behaviour in digital communication
Conclusion

The purpose of this report was to provide a review of the literature that would inform the Deakin University Library in its understanding of the concept of digital literacy, provide it with a working definition of digital literacy, and underpin its practices in working with faculties and students.

Deakin’s current definition of digital literacy, as the graduate learning outcome GLO3, omits some key skills which the literature suggests are core to the concept of digital literacy. These include skills of synthesis and critical thinking. While ‘critical analysis’ is included in another GLO, it is difficult to demonstrate how students achieve minimum standards in digital literacy without including evaluation or critical analysis of information. Therefore, for the purposes of developing an understanding of this concept for the Deakin Library, the following extended definition of digital literacy is proposed:

*Using digital technologies to find, evaluate, synthesise, create and communicate information in an ethically and legally responsible manner.*
References


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