Surveying the digital literacy landscape for academic and professional staff in higher education

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In order to produce digitally literate graduates, it is necessary for institutions to have digitally literate staff. While this statement seems clear, the commitment and approach of Australian Higher Education institutions to professional learning focused on digital literacies is not. This paper describes initial steps towards clarifying the place of digital literacies in the context of professional learning for higher education staff. The researchers canvassed 31 higher education websites to identify institutional approaches, and conducted a targeted literature review to uncover models and practices that could have transposal value to institutions. This paper reports on which institutions are publicly committed, which units are typically responsible for digital literacy, the reasoning for institutional approaches and key themes in pedagogical designs. It is the beginning of a conversation, in an effort to distil the muddy waters that digital literacies occupies and generate greater transparency and understanding between educators in the Australian Higher Education context.

Keywords: digital literacy; higher education; staff; professional development

Introduction

The world of work is changing rapidly and in order to remain competitive in today's labour market, it is imperative for all workers to continue to learn throughout their career (Adams, Pasquini & Zentner, 2017; Bowles, 2013). This is sometimes referred to as lifelong learning and is an attribute (or a skill) often stated by universities as one they develop in their graduates. As we move into this new unknown and shift from a labour-economy to a knowledge-economy, we need to rethink the skills that are needed to succeed (Selwyn, 2016). One of these often cited 21st Century skills is the need to produce students who are digitally literate, ie able to navigate a digitally connected and information-heavy workplace. Current debates and discussion continue on as to what exactly these digital literacies consist of. For example "Digital literacy involves complex sets of skills and knowledge practices that are best developed as deeply integrated practice within the discipline" (Hagel, 2015, p. 12) and .....

> The term digital literacy is often understood and used differently depending on the context and discipline. In education we should be focusing on the literacies rather than the media, because the technology will change. We need to be wary of making assumptions about the skill levels of our students, because research is telling us that reading, teaching and learning using technology and the screen requires a different literacy paradigm. Lastly we need to engage everyone in a conversation about the deeper layers of meaning that sit behind the term digital literacy. In this instance, when we use the term literacy as a descriptor, it is because being literate is fundamental to how we communicate knowledge and meaning, and this includes the digital environment. (Combes, 2016, p.6)

It is all well and good producing digitally literate students who can keep on developing their skills once in the workplace, but what of the educators and other higher education staff who support and facilitate student learning? Who is supporting them to develop their own digital literacy skills so that they can, in turn, support their students? Some institutions fund roles named 'learning designers' or 'educational designers' or 'learning technologists' tasked with the job of providing one-on-one and group support to staff on learning technologies. Other staff within an institution will support staff with their use of general technologies - sections such as information technology departments and other areas of an institution such as the library offer support to staff with data literacy which often incorporates the use of digital literacy skills. So, with such a wide array of roles being 'partly' responsible for helping staff improve their digital capacities and capabilities it is easy to see how the term digital literacy soon becomes 'messy' in terms of who owns it, drives it and promotes it. There is further muddied water when we investigate the term digital literacy itself. Can it even be considered a singular

construct? In his popular opinion piece, Mark Brown (2017a) reminds us that there are multiple terms used to describe this topic not least including digital capabilities, digital skills, digital competencies, and the term digital dexterity which has entered our vocabulary in recent times (Norman, 2012). In part 2 of his series, Brown (2017b) summarises a number of better-known frameworks and models of digital literacies from the US, UK and Europe. The question now is whether these or others adequately suit the Australian higher education sector and whether we can simply apply them to our context or whether a more nuanced adaptation is required. This concise paper attempts to answer this question and uncover any gaps in the literature,

The aim of this review paper is to clarify the waters around digital literacies in the higher education sector in Australia, by determining the uptake of digital literacies at strategic level, and seeking case studies of how strategy has been realised. This was achieved by completing an audit of Australian universities to find out how many currently have a strategy or use a framework to support the digital literacies of staff in their organisations. Alongside this, a review of the literature on digital literacies was undertaken to add a further insight into the varying contexts. The methods, findings and analyses will be reported separately and the discussion section will bring both sets of data together.

Digital Literacies in Australian Universities

Method

An audit of 32 Australian university websites was undertaken during 2018. The audit process involved reviewing each of these websites to collect data on any strategic plans, approaches or frameworks they publish on digital literacies for staff and students. The search terms used for the website audits were digital literacy or digital literacies. If we could not complete our checklist (see criteria in table 1), we then searched the institutions' library website and also the website of their learning and teaching central unit (or office). In some cases, these two sites required a browse to uncover whether or not digital literacy frameworks, programs or other information could be found.

Search results

Table 1. Audit results from 32 Australian websites, investigating the mention of digital literacy frameworks, policies, approaches or strategies, who owns them and who the information is aimed at.

Australian Higher Education Institution	Mentions an institution policy/ approach/strategy	Digital information for or about staff/ students/both	Owner (LTC = central learning and teaching unit)
Group of Eight (Go8)			
The University of Adelaide	yes	both	LTC The Learning Enhancement and Innovation portfolio
The Australian National University	no^	students	Library
The University of Melbourne	yes	both	Library
Monash University	yes	students	Library
The University of New South Wales	no^	students	Faculty (course)
The University of Queensland	yes	both	Library
The University of Sydney	yes	students	Institution
The University of Western Australia	no^	students	Library
Australian Technology Network (ATN)			

Curtin University of Technology	no		
University of South Australia	yes	both	LTC and Faculty (course)
RMIT University	no		
University of Technology Sydney	no^	both	Library
Queensland University of Technology	yes	students	Library
Innovative Research Universities (IRU)			
Flinders University	no		
Griffith University	yes	both	Office of Digital Solutions
La Trobe University	yes	both	library
Murdoch University	no		
James Cook University	yes	both	Institution
Charles Darwin University	no		
Regional Universities Network			
Central Queensland University	no		
Southern Cross University	no		
University of Ballarat (Federation University)	yes	both	LTC
University of New England	no		
University of Southern Queensland	no		
University of the Sunshine Coast	no^	students	Faculty (program)
Others:			
Australian Catholic University	yes	students	Library
Edith Cowan University	yes*	both	LTC
Victoria University	yes	both	Library and LTC
University of Canberra	no		
University of Western Sydney	yes	students	Library
Deakin University	yes	students	Library
Wollongong University	no^	both	Library
^ information appeared relating to specific subjects, programs or initiatives but were not linked to clear strategic plan. *not their own but mentions the JISC framework and also the Australian Government's Core Skills for Work Developmental Framework,			

The audits reveal that only 16 Australian universities have public information on their websites regarding an approach, framework or strategy linked to developing digital literacies. Nine of the 32 universities do not have

any information pertaining to our search criteria on their public website. A further five surfaced information relating to digital literacies, but could not be linked to a strategic document or approach, for example one-off subjects at the faculty level or training resources tagged with digital literacy. This data is displayed in Table 1.

Of the websites that showed clearly evidence of a strategic approach to digital literacies, only eleven mentioned both students and staff. This may be because public information of institutions are oriented towards attracting prospective students. However, the number on a surface levels indicates that most institutions value digitally literate graduates, but paradoxically do not value digitally literate staff to develop this quality in students.

Analysis

Responsibility for digital literacy commonly falls onto the institution's library or central learning and teaching unit, with a total of thirteen and five institutions indicating total or shared responsibility respectively. It is telling that libraries are driving change in this area, after historically delivering information literacies which are arguably closely tied to digital literacies. The Council for Australian University Librarians has listed 'digital dexterity' as a key strategic priority for 2017-2019, perhaps in response to this trend. Interestingly, no publicly available information links digital literacy to the institutions Information Technology unit, despite the close ties to their core business.

A caveat is made here in that the information we were searching for may be behind a firewall, on an intranet, or in development at the time of this search. Further, the research was reliant on the search box present in each higher education website or the researcher's assumption on where to logically look, and therefore public information may have been missed.

Digital literacies in scholarly research

Method

A review of the literature on digital literacy for staff in the higher education sector was conducted. The following search was used: "digital" AND ("literacy" OR "literacies" OR "capacity" OR "skills") AND ("higher education" OR "tertiary" OR "university") AND ("staff" OR "teacher" OR "lecturer") in four databases - A+ Education, EBSCO (Education Research Complete), ProQuest Education, and Scopus.

The terms 'digital competency' and 'digital dexterity' were considered, however we felt that the first four terms would be comprehensive enough for our needs.. Determining a clear descriptor of higher education staff was challenging, due to the variance in terms for educators (i.e., teachers, lecturers, academics) and for other staff (i.e., professional staff, general staff). he results to peer reviewed journal articles and those from the past 10 years.

Search results

A high number of articles were returned during initial searches and we narrowed down the results by skimming through the abstracts and titles and excluding those that only referred to students. Articles that referred to both students and staff, as well as those with transposable value despite being written from a non-Higher Education context were included. Table 2 lists the details of the 18 articles that were considered for this paper. Only seven of these 18 articles hit the three main criteria for review: higher education context, professional learning and digital literacy-focused. However, the remaining 12 articles described concepts or had applications that could possibly be transposed our desired context.

Analysis

The abstracts were analysed and coded into seven themes. These are context (subdivided into HE, K-12, community, and not specified); framework discussion; owner (subdivided into library or learning and teaching); audience (student, teacher or both); future work skills; professional learning (formal, informal or neither); and collaboration. Some items within these themes will now be briefly discussed.

Discussion

Context

The range of contexts for the selected articles is presented in Table 2. One of the 18 articles selected for this review was from an unexpected source. It discusses the digital literacy skill acquisition for hearing and vision impaired members of the community (Tellefson, 2016). Whilst this is not our target audience or sector, the article presents a framework for developing lifelong learning skills in digital literacy and discusses the importance of enabling independence for this group.

Audience

As described earlier, it was difficult to find the correct search term to describe the target audience. We found thirteen articles specifically discussing student and staff needs in terms of developing digital literacies. Five of these covered both groups, one covered students only and the remaining eight articles discussed staff needs only. Of these 13 articles focussing on staff digital literacies, only three of them articulated a distinction between academic and professional staff with the latter being librarians (Hallam, Thomas & Beach, 2018; Hobbs & Coiro, 2016; Osborn, 2017). This connects back to our earlier discussion on the need for digital literacy capacity building across both professional as well as academic staff in the sector.

Owner

When we analysed the articles for details on who 'owned' the information we found there were three belonging to the library and eight to a learning and teaching unit. This finding is inconsistent with the results of the website audit, in which 12 institutions appeared to assign complete or some ownership to the Library while 5 assigned ownership to a central learning and teaching unit. This may be explained however, by the assumption that it is, more common for educators on an academic contract to publish their scholarly work as compared to library staff who are usually on a professional contract and more used to sharing in other contexts not necessarily in a journal article.

Table 2. Summary of articles reviewed for this paper.

Author	Year	Context	Audience	Owner	Future Work	Professional Learning	Collabor-ation	Frame-work
Bennet, L.	2014	HE	Staff	L&T	-	Yes	-	Yes
Combes, B.	2016	K-12	Staff	Library	-	-	-	-
Hall, et al.	2014	K-12	Staff	L&T	-	-	-	Yes
Hallam, et al.	2018	HE	S&S	Library	-	-	-	Yes
Hobbs, et al.	2016	K-12	Staff	L&T	-	Yes	Yes	-
McIntyre, S.	2014	HE	S&S	L&T	Yes	Yes	-	-
Mirriahi, et al.	2015	HE	Staff	L&T	-	Yes	-	-
Newland, et al.	2016	HE	Staff	L&T	-	Yes	Yes	Yes
O'hare, S.	2016	HE	S&S	Institution	Yes	Yes	Yes	-
Oakley, K.	2008	Generic	Other	-	Yes	Yes	-	-
Osborn, J.	2017	HE	Staff	Library	-	Yes	Yes	-
Owens, R.	2012	K-12	Staff	Institution	-	-	Yes	-
Poore, M.	2011	Generic	S&S	-	Yes	Yes	-	-
Sadaf, et al.	2017	K-12	Staff	-	Yes	-	-	-
Semingson,	2017	HE	Staff	-	-	-	Yes	-

et al.								
Tellefson, C.	2016	Community	Other	-	-	-	Yes	Yes
Tour, E.	2017	K-12	Staff	-	-	Yes	Yes	-
Wheeler, et al.	2012	HE	Staff	-	-	Yes	-	-

Table abbreviations:
HE= higher education
K-12 = pre-tertiary education
S&S = students and staff
L&T = learning and teaching

Framework

A number of recent articles have reviewed available digital literacies frameworks, the most recent being the NMC Horizon report which details and compares 11 contemporary frameworks (Alexander, Adams Becker, Cummins, & Hall, 2017). Only five of our selected articles discussed frameworks (see Table 2). One explanation for this small number of articles may be due to the fact that critiques and developments of such frameworks are now readily available in the literature though we found it interesting that other articles did not refer to them. Only one of the five discuss the use of an external framework ("Developing digital literacies", 2014), the others all developed their own contextualised structures.

Professional learning

As this theme was a main element of our search criteria it is not surprising that nine articles discussed this. In most cases this covered different approaches to professional learning with six of the nine articles discussing the value of informal learning to develop digital literacy skills. As we found only a few Australian institutions currently invested (publicly) in the development of digitally literate staff, directions could certainly be adopted from the literature.

There were two further themes present in the selected articles, one to be expected and one quite unforeseen. These will be discussed next.

Future work

The need for digital capabilities in order to be successful in the workplaces of the future. We expected to see more of this theme throughout the articles we reviewed though we found only six articles mentioned it. A recent graduate employability report (Davies, Fidler, & Gorbis, 2011) projected the skills that would be required for jobs in 2020 and rated a critical mindset at the top of the list. It may be pertinent therefore to start to consider how this skill can be developed rather than concentrating on the specific technology skill sets often encompassed within the term digital literacies.

Collaboration

The digital literacy debate is hard to resolve due to its complex nature not least involving the lack of consensus on its definition and yet further when we begin to consider the socio-political arguments regarding inequity of Internet access (Brown, 2017c). However, a final theme emerged in the reviewed literature, that of collaboration. This is encouraging since it is only through collaboration that institutions can stop working in silos on this 'wicked problem'. Development experts have argued that we may need to take smaller, more manageable steps to tackle these large-scale problems (Reinecke, & Manning, 2016). One example can be seen in the collaboration between Deakin University and Australia Post in the development of a MOOC for the general public to develop their capacity to engage in a digital world (https://www.mooc-list.com/course/digital-discovery-2-expand-your-world-online-futurelearn).

Conclusion and next steps

Our dive into the murky waters of digital literacies has led us to concur with other authors that the topic is somewhat confusing, chaotic and messy (Brown, 2017a; Martin & Grudziecki, 2006). We found that there is little research published on the development of digital capabilities for non-teaching staff (often called professional staff in the higher education sector) and this is an area for future investigation. Is work going on in this area but not published? One could theorise that professional staff do not tend to have workload allocation for scholarly research and therefore whilst this could be taking place in practice, it may be that publication is not a priority. Running a national benchmarking exercise across institutions could allow for further investigation into this area. Such an activity would also overcome the limitation of this current study in that much of the data of interest in the website audit was likely residing on intranets or behind firewalls and therefore not publically available. Another area for future research which came to light as lacking in the scholarly literature, is to investigate what theories have been used to underpin specific implementations of digital literacy frameworks, models or approaches.

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