Online 2015: "Just Dance" with digital literacy

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"*As long as the website is set out in a way that looks kinda modern, like they know what they're doing, or paid someone to do it for them, you kinda trust it"* (Communicating Science student, 2014)

Introduction

Librarians in the 21st century global digital world need to be as nimble and flexible as a player of the game 'Just Dance'. The role of librarians has changed dramatically – from gatekeepers of knowledge to navigators of the complex world of the web (Rao & Ranganadham, 2013 p.2). It is a challenging time. Our profession is responding to the changing rhythms of tertiary education and is choreographing the interaction with dynamic digital information by equipping students with digital literacy skills that will enable them to thrive as they live, learn and connect in the global digital world.

Gruszczynska observed that the technologies have "rapidly become an important theme in political debate, in policy development and in social science research (2013 p.193). Nelson adds that the

> "*top five challenges in teaching and learning with technology include the development of 21st century information, digital, and visual literacies to ensure that students are equipped with the skills needed to succeed in college and future careers"* (Nelson, Courier, & Joseph, 2011)

Reading the literature on preparing students to fully engage in a digital world, it is evident that there are many theories and practices that support student learning, skills and knowledge. However, enhancing student learning through cross organisational collaborations is not well documented. Even less clear is the positive outcomes of library and academic collaboration that generate mutual value for each party.

The following paper shares a new approach to digital literacy development and is divided into four dance elements: Getting Fit for the Dance (digital literacy concept, contexts and definition as used at Deakin University); First steps of the Dance (building liaison librarian capacity; the digitally literate student); Practicing the Dance (the Case Study and results); and the Dance Finale (Conclusion).

Getting Fit for the Dance

Worldwide, the concept of Digital Literacy has engaged educators, ICT professionals and librarians for several decades. Gilster first defined Digital Literacy in 1997 as '*the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers*' (1997, p.1). Even though it predates, Web 2.0 technologies, Gilster's definition provided an important foundation for practitioners and researchers.

Since 1997 the literature reveals a myriad interpretations of what it means to be digitally literate (Bawden, 2001; Huvila, 2012; Nelson et al., 2011; Robertson, 2013; Shopova, 2014; Warburton, 2013). Nelson observed that digital literacy is built on the following three principles:

> *"..skills and knowledge to use a variety of digital media software applications and hardware devices; the ability to critically understand digital media content and applications; and the knowledge and capacity to create with digital technology"*
> (Nelson et al., 2011 p. 97)

The importance of being digitally literate or being digitally competent in the 21st century is highlighted in the following statement issued by the European Union Parliament:

> *"With the 2006 European Recommendation on Key Competences, Digital Competence has been acknowledged as one of the 8 key competences for Lifelong Learning by the European Union. Digital Competence can be broadly defined as the confident, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society. Digital competence is a transversal key competence which, as such, enables us to acquire other key competences (e.g. language, mathematics, learning to learn, cultural awareness). It is related to many of the 21st Century skills which should be acquired by all citizens, to ensure their active participation in society and the economy."*
> (2006)

Deakin University Context

Deakin University has a strong strategic vision for learning which recognises that harnessing digital capabilities is essential for students' success, well into the future.

> *"We now live in a global, connected world with a digital economy influencing every aspect of our lives. Competition and accelerating expectations mean that students rightly expect a premium learning experience that will prepare them for life and careers in a rapidly changing world"*
>
> Jane den Hollander, Vice Chancellor, Deakin University
> (http://www.deakin.edu.au/about-deakin/strategic-direction/message-from-the-vice-chancellor)

Established in 1974 and celebrating forty years, Deakin University is now Australia's ninth largest university In the Australian higher education sector, the University has held the top position for four years in student satisfaction and

is ranked among the top ten Australian universities. Internationally, Deakin is ranked 59 in the world by the Times Higher Education's list of the world's top 100 universities under 50 years old.

The University has over 50,000 students. Fifteen per cent of the cohort are international students representing more than 127 countries. Twenty four percent of Deakin students choose to undertake their degree as a wholly cloud-based (online) experience. The diversity of student cultural and socioeconomic backgrounds and choice of mode of study creates challenges for delivering engaging learning experiences.

Catalysts for change at Deakin University: Agenda and Review of Course Structures

In 2012 Deakin University launched *LIVE the future: Agenda 2020. The Agenda set* targets for learning, teaching and research. The Library seized the opportunity to play an active role in the development and delivery of significant collaborative projects which focused on developing a shared University-wide understanding of Digital Literacy.

In tandem with *the Agenda*, the University undertook a major review of existing course structures. This was informed by the Australian Qualifications Framework (AQF) which required the Higher Education sector to align course program offerings with the Framework and articulate graduate learning outcomes. In late 2012 the University commenced a comprehensive program of course enhancement to ensure that all courses would develop eight mandatory Graduate Learning Outcomes and require students to evidence the successful attainment of these learning outcomes by graduation. The courses are also designed to develop highly employable graduates through unit and course experiences that were personal, relevant and engaging wherever learning takes place—on campus (located), in the cloud (online) and in industry settings.

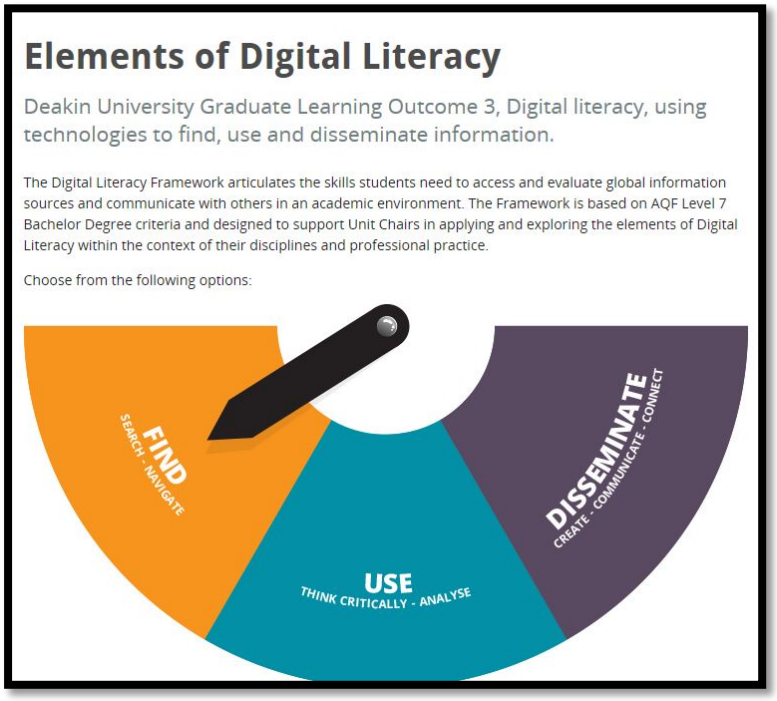
As an integral component of the University's Course Enhancement Process, the Library's expertise in Digital Literacy was recognised and responsibility for the development of this Graduate Learning Outcome was assigned to the Library. To meet this challenge the Library began and continues to collaborate and advise academics and educational designers in:

- Building a shared understanding of Digital Literacy and how it may be evidenced in learning outcomes through demonstration of searching competence, critical analysis and evaluation and sharing knowledge through a range of media;
- Developing exemplar Digital Literacy learning and assessment activities embedded in curricula;
- Using and integrating media rich information resources to support participative student learning.

Digital Literacy: the Understanding and Practice@ Deakin University

Deakin University defines Digital Literacy as "using technologies to find, use and disseminate information" (Deakin University, 2014). Digital Literacy is closely aligned with several other Deakin Graduate Learning Outcomes, including: Discipline–specific knowledge and capabilities; Communication; Critical thinking; Problem solving and Global citizenship. The Library's contribution, based on our professional understanding and observation of academics' confusion of the definition, was to clarify and develop a Digital Literacy Framework describing the capabilities underlying the definition.

Deakin University Library



Deakin University Digital Literacy Framework

The Framework is based on an extensive review of literature on Digital Literacy; environmental scanning of information literacy, digital literacy and research skill frameworks developed by the Library profession and work undertaken by Deakin University Library managers and staff in strategic workshops. The purpose of the Framework is to support Faculty Course teams and Unit Chairs who are developing course and unit learning outcomes for bachelor degree programs (AQF level 7) which evidence Digital Literacy as a graduate learning outcome. The Framework provides three levels of Digital Literacy attainment by undergraduate students: foundation, proficient and advanced. The Framework was endorsed in March 2014 by the Deputy Vice Chancellor (Education) and provided an essential platform to promote the concept of Digital Literacy to Faculty Boards and Teaching and Learning committees across the University.

Deakin University Digital Literacy Framework, Graduate Learning Outcome 3

This Framework articulates students' need to develop the ability to: access global information in many formats from diverse sources; critically analyse and evaluate sources; create new knowledge; and use appropriate technology to communicate information and connect with others in an academic environment. Digital literacy is socially situated so the Framework is designed for Unit Chairs to apply and explore the elements of Digital Literacy within the context of their disciplines and professional practice.

Elements of Digital Literacy	Foundation level	Proficient Level	Advanced Level
Find: search and navigate	• Identify a need for information to effectively accomplish a task; • Define the scope of the research required and determine key concepts and contexts; • Successfully locate sources from citation lists provided; • Research and accesses key sources of information in the subject area / context.	• Interpret a research question and develops an effective search plan to navigate to relevant information sources; • Demonstrate the ability to alter or refine searches to ensure results reflect the information need; • Demonstrate knowledge of information sources and employ judgement in selection.	• Demonstrate sophisticated use of search strategies required to retrieve comprehensive range of relevant resources; • Use advanced features of library databases to automatically generate regular search outputs e.g. alerting services, RSS feeds.
Use: think critically and analyse	• Recognise that the quality of information varies; • Aware of elementary evaluation criteria to avoid use of misleading knowledge resources.	• Apply appropriate criteria to evaluate reliability, relevance, accuracy and authority of information.	• Consistently demonstrate analytical skills in selecting accurate and relevant digital sources to support a contention or argument.
Disseminate: create, communicate and connect	• Recognise the importance of referencing and acknowledges the ideas of others in the work one creates; • Demonstrate an understanding of copyright requirements, information security and privacy and ethical use of information; • Select and use technologies to communicate in an academic environment.	• Consistently and correctly reference and acknowledge the work of others; • Keep systematic records of resources, using appropriate technologies to manage information; • Demonstrate an understanding of privacy, ethical and legal requirements and relate these concepts to the development of one's digital profile; • Understand the relevance of social media tools and use appropriately for enabling teamwork and collaboration; • Demonstrate the ability to produce subject-related knowledge artefacts using digital tools and resources; • Demonstrate collaborative production and sharing of digital content for study and research.	• Demonstrate advanced working knowledge of relevant bibliographic software tools; • Demonstrate capability to reflect and confidently create and share new knowledge; • Ethically curate and share knowledge in a variety of forms.

First Steps of the Dance

Adoption of the Framework and evidencing Digital Literacy in unit learning activities required liaison librarians to confidently engage in conversations about Digital Literacy. However, a Training Needs Analysis (TNA) of Liaison Librarians capabilities carried out in March 2014, revealed that there were perceived knowledge and skill gaps in them being able to:

- discuss knowledgably the Library's Digital Literacy Framework with academics and colleagues;
- use the Digital Literacy Framework to inform Unit program development in addressing graduate learning outcomes;
- deliver presentations and develop learning activities appropriate to different student cohorts, levels and abilities within classes and seminars,

The structured monthly training sessions scaffolded the Liaison Librarians' skill and knowledge development in the areas of: creating scripts and storyboards for videos; foundations of Digital Literacy; strategies for developing conversation with academics about Digital Literacy; online learning theories and pedagogy and use of apps for learning and teaching. One training session immersed the liaison librarians in undertaking a newly developed learning activity, "Assessing the reliability and accuracy of information". This active learning experience provided librarians with firsthand experience of student skill development and level of engagement in the tasks.

Evaluation of each of the Liaison Library staff training sessions provided opportunities to improve and better target training requirements. Comparing results from the TNA carried out in March with the November TNA, revealed a major improvement in skill level in the following areas:

- Ninety –five percent of liaison Librarians indicated that they were able to discuss knowledgably The Library's current Digital Literacy Framework with academic University colleagues

- Eighty nine percent indicated that they could use the Digital Literacy Framework to inform Unit program development in addressing graduate learning outcomes
- Eighty three percent indicated that they were able to deliver presentations and learning activities appropriate to different cohorts, levels and abilities within classes and seminars.

The digitally literate student

Given the volume and complexity of information that students can now access, the knowledge and skill to evaluate these sources of information is critical. In reviewing the literature, there is an increasing interest in user behaviour, and analysing the internet searching habits of students (Meola, 2004; Metzger, 2007).

Research confirms that students, particularly undergraduate students, employ 'cognitive economy and satisficing in information seeking' (Warwick, Rimmer, Blandford, Gow, & Buchanan, 2009) when faced with assessments. Their information seeking behaviours are affected by demands on work load and any new methods of searching or evaluation of information needs to be seen as 'immediately relevant to the task'. A 2012 study also found a disparity between academics expectations and students reported searching activity. College professors deemed Google to be an 'appropriate academic research tool for less than 20% of research material but that first year students reported using it to locate between 50% and 100% of their material' (Connaway, Lanclos, & Hood, 2013).

If we accept the exciting possibility of 'Shifting the burden of credibility assessment and quality control from professional gatekeepers onto individual information seekers' (Metzger 2007, p.2079) and acknowledge that evaluation of information sources is 'amenable to improvement through instruction' (Wiley et al., 2009, p.1060) how does that inform our teaching programs?

Traditionally libraries have often relied on the checklist approach of judging accuracy and reliability. Drilling criteria outlined in guides such as the CRAAP test (currency, relevance, accuracy, authority and purpose) has been a popular approach by librarians. The expectation is that provision of a list – such as CRAAP – will be rote-learned by students, and after several practices, students will internalise the five criteria and apply them whenever evaluating resources.

However Meola was sceptical about using the traditional checklist of evaluation even a decade ago in 2004 and stated:

> *"it can serve to promote a mechanical and algorithmic way of evaluation that is at odds with the higher level judgement and intuition that we presumably seek to cultivate as part of critical thinking" (Meola, 2004)*

Meola promoted the view that we should try to 'cultivate researchers who ultimately create new knowledge by learning how to decide for themselves what is accurate and trustworthy not encouraging them to simply re-present information from an 'authoritative' Web site'. Meola suggested a three step process of:

- promoting reviewed or licensed products
- exercising comparison of sources
- verifying by corroboration

Ostenson develops this contention further by suggesting that 'evaluative decision- making has settled around a framework based on a criteria originating from the world of print' (2014, p.35). He argues that 'not all issues are so black-and-white and that bias or subjectivity is often a legitimate part of the nature of controversial or unsettled topics'

(2014, p. 37). He suggests there should be an emphasis on 'teaching of strategies and behaviours rather than the progression through a step-by-step list'. However the check list still has a place in providing 'scaffolds' for students as they develop more sophisticated evaluation skills. As Ostenson says 'there is no such thing as an easy or fast answer' and observes that:

> *''Helping students recognize that some tasks require more careful, methodical research and thinking…initiates students into an authentic view of research "* (Ostenson, 2014)

The awareness of student information seeking behaviour, the richness in the amount and variety of information sources, and the need to create a meaningful and relevant learning activity gives the context to the collaborative learning activities developed at Deakin University in Trimester One, 2014.

Practicing the Dance

In 2014 the Library joined with the teaching team of a large first year unit in the School of Education entitled Communicating Science, to design and deliver a program to motivate and enable students to better assess science information which is freely available on the web.

The teaching program consisted of a lecture led by Library staff on assessing the credibility of sources as an integral skill of Digital Literacy, followed by three tutorials. During the tutorials groups of students examined a website with scientific content for information which could not be verified directly from the site and developed a decision making process or creative tool to assess resources for accuracy and reliability. Following peer review each group then applied this process or tool to assess a different website for accuracy and reliability and submit as a 'Media Watch' style video assessment task.

Critical student learning outcomes were developed by the unit chair to clearly identify the challenges to be addressed. These included:

- Be aware that information on the web comes with a **range of accuracy and reliability;**
- **Develop criteria** for assessing accuracy and reliability of information;
- Use these criteria to **critically assess** the accuracy and reliability of a range of web based information;
- **Communicate** judgements of accuracy and reliability.

Through collaboration with the academic team, the Library developed and led students in undertaking learning activities which addressed all these learning outcomes.

Results and Feedback

Our interpretation of the results was positive, based on feedback from students and academic teams, and from the strong engagement by students in the various learning activities.

In the 'judgement' or evaluation section of the assessment rubric 'groups received full credit if they performed a powerful, credible and persuasive review of the accuracy and reliability of claims made by the source'. This correlates to the more proficient, rather than foundation level standard of the Deakin University Digital Literacy Framework for the term 'Use: Think critically and analyse'. Eighty five per cent of groups, after completing this task in their first few weeks of university, achieved credit or above for this skill.

Both tutor and student feedback was extremely positive for the exercise:

> Tutor response: *"the students were really seeing that this had changed the way they were thinking about using the internet and their sources"*

Student response: *"We can go and do our research and know what's right, not because we're science students but because we know how to look at websites now'.*

Our experience of collaborating in the teaching program, observing and conducting focus groups allowed us to reflect on the factors influencing the success of the program. These included:

- the time spent on reinforcement through a lecture, tutorial activity and discussion, and assessment task
- the engaging and practical nature of the tutorial task
- the relevance of the exercise to the unit content
- the collaborative experience of working in a group providing peer support and review

A similar learning activity was also undertaken in two other units within the Faculty of Science, Engineering and Built Environment: Engineering Practice, also a first year unit, and a second year unit in Information Technology Professional Skills. Both reported success with the learning activity and will repeat it in 2015.

Our experience with the Communicating Science unit has been a springboard to begin to develop other active, experience first, and challenge based learning activities which engage students in developing the higher order skills of evaluation and critical thinking. We have shared our experience with academics in other faculties and in 2015 around 1,000 first year students will be enrolled in two compulsory communication units offered by School of Communication and Creative Arts. One of the units will include a learning activity for "finding and using information" and the other "Assessing the reliability and accuracy of information" allowing us to further build and extend on the initial learning activity and scaffold it across the first year undergraduate experience.

Dance Finale

The digital world is like a dynamic and fast paced dance. Librarians in the Higher Education sector need to seize the opportunities to partner with academics to prepare students for the complex and dazzling 21st Century digital world.

Our experience at Deakin University at a time of learning renewal, demonstrates that there are unparalleled opportunities for Liaison Librarians to fully engage with academics in designing authentic digital literacy learning activities and assessment tasks. The new collaborative relationships are not only changing academic perceptions of librarians' skills and knowledge that they bring to curriculum redesign but also students' perceptions of the Library and librarians. Liaison librarians have become better able to fully engage academics in Digital Literacy conversations through targeted training programs designed to build librarians' capacity and confidence in undertaking new ways of delivering authentic learning activities.

This case study reveals that engaging students in meaningful learning activities and assessment tasks has created dynamic and powerful learning experiences for first and second year students. In addition, the leadership that the liaison librarians demonstrated in activities that capitalised on problem based learning, peer assessment, and new ways of communicating is prompting open conversations and collaborations with academics about further opportunities.

Learning the new dance steps for Digital Literacy is encouraging liaison librarians to develop new routines for the ever changing fast paced Digital world.

References

Bawden, D. (2001). Information and digital literacies: A review of concepts. *Journal of Documentation, 57*(2), 218-259.

Connaway, L. S., Lanclos, D., & Hood, E. M. (2013). *I Find Google a lot Easier than Going to theLibrary Website." Imagine Ways to Innovate and Inspire Students to Use the Academic Library*. Paper presented at the ACRL

2013, "Imagine, Innovate, Inspire" April 10-13 Indianapolis. http://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconfs/2013/papers/Connaway_Google.pdf

Deakin University. (2014). Deakin Graduate Learning Outcomes. Retrieved November 28, 2014, from http://www.deakin.edu.au/students/university-handbook/2013/deakin-graduate-learning-outcomes

European Parliament. (2006). Recommendation of the European parliament and of the council of 18 December 2006 on key competences for lifelong learning *Official Journal of the European Union*: European Parliament.

Gilster, p. (1997). *Digital Literacy*. New York: John Wiley.

Gruszczynska, A., Merchant, G., & Pountney, R. (2013). Digital Futures in Teacher Education: Exploring Open Approaches towards Digital Literacy. *Electronic Journal of e-Learning, 11*(3), 193-206.

Huvila, I. (2012). Information services and digital literacy. *Information Services and Digital Literacy: In Search of the Boundaries of Knowing*, 25-34.

Meola, M. (2004). Chucking the Checklist: a contextual approach to teaching undergraduates web-site evaluation. *Libraries and the Academy, 4*(3), 331 - 344.

Metzger, M. (2007). Making sense of credibility on the Web: Models for evaluating online information and recommendations for future research. *Journal of the American Society for Information Science & Technology, 58*(13), 2078 - 2091.

Nelson, K., Courier, M., & Joseph, G. W. (2011). An Investigation of Digital Literacy Needs of Students. *Journal of Information Systems Education, 22*(2), 95-109.

Ostenson, J. (2014). Reconsidering the checklist in teaching internet source evaluation, portal. *Libraries and the Academy, 14*(1), 33 - 50.

Rao, Y. M. V. N. R., & Ranganadham, S. (2013). Library professionals - changing environment. *e-Library Science Research Journal, 1*(8), 1 -9.

Robertson, L. (2013). Current trends and future practices for digital literacy and competence. *Australian Library Journal, 62*(2), 171-171.

Shopova, T. (2014). Digital Literacy of students and it improvement at the university. *Journal on Effieciency and Responsibility in Education and Science, 7*(2), 26-32.

Warburton, B. (2013). Delivering Today's outreach fleets offer lean, deft solutions to libraries' most pressing needs, including digital literacy and access. *Library Journal, 138*(15), 22-25.

Warwick, C., Rimmer, J., Blandford, A., Gow, J., & Buchanan, G. (2009). Cognitive economy and satisficing in information seeking: A longitudinal study of undergraduate information behavior. *Journal of the American Society for Information Science and Technology, 60*, 2402 - 2415.

Wiley, J., Goldman, S., Graesser, A., Sanchez, C., Ash, I., & Hemmerich, J. (2009). Source evaluation, comprehension, and learning in internet science inquiry tasks. *American Educational Research Journal, 64*(4), 1060 - 1106.