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Mastering the art of digital scholarship: from mind to mind

Judy O'Connell presents a thought piece on digital scholarship and its implications for learners.



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We generally think of the mind as something different from the rest of the world. We talk about the child's mind, the adolescent's mind, the teacher's mind, and so on, and we plan our learning and teaching strategies, school library related development activities, and deploy relevant pedagogical or information frameworks accordingly with the intention of engaging the various 'minds' that cross our educational paths.

But do we plan with the mind as our focus? Rather, our focus is on curriculum, pedagogy and engagement with cohorts of students, engaged in learning across various year levels at school. But what if we were to focus instead, on learning as the empowerment of knowledge and development of digital capability within the learning process? What would or could we be doing differently?

Information ecology

For us, the 21st century is a bit of a cliché, even though we continue to struggle as well as enjoy the possibilities that it brings. It will eventually warrant its own mind museum simply because what we do and how we manage information, learning and knowledge creation is vastly different to what needs to happen in our current era.

To start a conversation on learning and teaching differently, consider this from MIAC: The mind is a collection (<http://www.mindisacollection.org>), a born-digital museum of early modern cognitive models.

Memory is a database; the mind is a central processing unit; the senses offer input. Or, the mind is a repository of memories, a library for ideas, a workshop for concepts. In other words, the mind is a collection – of facts, data, ideas, concepts, memories, images.

This museum mostly limits itself to 17th and 18th century England, where this set of habits got their modern-era start. It examines libraries, workshops, notebooks, and collections of all sorts.

John Seeley Brown (1999) used an 'ecology' metaphor to describe the emerging technology landscape as an open system, dynamic and interdependent drivers, partially self-organising, and adaptive. Thomas and Brown (2011), also explored what they described as a new 'culture of learning' where information technology has become a participatory medium, giving rise to an environment that is constantly being changed and reshaped by the participation within information spaces. They argued that traditional approaches to learning are no longer capable of coping with this constantly changing world. Our information environment is a technology environment that demands adaptation. As information is also a networked resource, 'information absorption is a cultural and social process of engaging with the constantly changing world around us' (Thomas and Brown, 2011, p. 47).

In this context of adaptive and responsive co-construction of knowledge, curriculum resources and learning can be reshaped and re-constructed in a dynamic manner in response to changing environmental conditions or to the personal needs of students in more dynamic ways, connecting learning experiences across the contexts of location, time, devices and platforms. This needs a new brand of professional competences to thrive within this changing environment.

Our work as educators must centre on helping to meet future learning needs in schools by fostering a culture of enquiry within a sustainable learning ecology. This ecology is shaped by the ubiquity of information for knowledge building which is inspired by digital scholarship practices. This inspiration, drawn from the concept of connected educators, developing skills in search strategies, open education resources and the development of our understanding of copyright forms the core of digital scholarship.

Connected educator

The information management model that created the internet (Berners-Lee, 2009) was intended to facilitate information sharing and communication. Internet connectivity is ubiquitous and now makes communication from multiple locations easy, and puts a vast range of online resources in the hands of individuals. Thanks to advances in technology, the powerful tools at our disposal to help students understand and learn in unique ways are enabling new ways of producing, searching and sharing information and knowledge (Conole, 2013). By leveraging technology, we have the opportunity to open new doors to scholarly inquiry for ourselves and our students.

A connected educator adopts digital literacy approaches with an understanding and active orientation to information seeking within 21st century socio-technical environments. In this context, it is important to understand the connection between information literacy models and processes in the context of digital literacy practices.

Bawden (2012, p. 294) identifies key facets of digital literacy as:

* knowledge assembly – building a reliable information hoard from diverse sources

- * retrieval skills, plus critical thinking for making informed judgements about retrieved information, with wariness about the validity and completeness of internet sources
- * reading and understanding non-sequential and dynamic material
- * awareness of the value of traditional tools in conjunction with networked media
- * awareness of people networks as sources of advice and help
- * use of filters and agents to manage incoming information
- * being comfortable with publishing and communicating information as well as accessing it.

This is the 'mind as a collection and organisation tool', making digital literacy much more than just the deployment of digital tools for learning in digital spaces and contexts. In fact, Eschet (2012) supports digital literacy as being a 'survival skill' which helps us work intuitively in completing complex digital tasks framed by 'real time thinking' within an information, visual, and socio-emotional environment.

How do we ensure that we adopt a holistic perspective which combines skills, mental models and practices into a strategic approach to future-focused education?

Digital scholarship

The proliferation of digital content is part of the change in the work of educators. Digital literacy can enable digital scholarship, but the nature of digital scholarship is dependent on emergent practices and professional orientation to learning and teaching.

Building knowledge environments involves establishing an ethos where the core work is the production of new knowledge, artefacts, and ideas of value - the same as in mature knowledge-creating organisations. Learning to collaborate with others and connect through technology are essential skills in a knowledge-based economy.

Knowledge building and the co-creation of knowledge are foundational aspects of learning, from information and by thinking, working and using appropriate tools and strategies. Such knowledge building environments provide special support for collaborative knowledge work. The creation of knowledge as a social product has become a major part of that skill set. Not only do we find clear examples of collective and collaborative responsibility for accomplishments, we are also seeing unique examples of advances in knowledge in both formal and informal settings.



Information literacy

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Digital literacy

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Digital scholarship

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Real world learning requires educators who not only appreciate how the digital environments result in the construction and distribution of information, but how they are affecting personal information practices. In addition, this requires that educators accept the critical responsibility for tutoring, supporting or educating students 'to the max' in digital environments.

It was in 2007 that Jane Hart compiled the first Top 100 Tools for Learning from the votes of learning professionals worldwide and has done so every year since then. To mark the 10th anniversary in 2016, Hart produced the Top 200 Tools for Learning 2016 from the votes of 1,238 learning professionals worldwide.

Take a look at the Best of Breed 2017 (v)_list where Hart categorised the different tools, or the three sub-lists Top 100 Tools for Personal Learning 2017, Top 100 Tools for Workplace Learning 2017 and the Top 100 Tools for Education 2017.

Then take a deep breath!

Digital scholarship is a big-ticket item and it requires a considerable investment in time and energy to first develop and then maintain information fluency within these diverse tools, apps and spaces.

Digital scholarship depends on personal knowledge and application of tools and strategies in order to:

- * justify technological choices in learning design based on theory, literature, pilot, outcomes
- * adopt technologies with reference to global collaborative education practices.

Search strategies

Digital scholarship also depends on astute use of search strategies as we continue to mine for information and work on curation of information collections. Being digitally literate means that you can search for information and navigate various platforms, think critically about texts online, and produce and communicate information using digital media. Digital scholarship requires competent digital literacy skills.

Across the world, technologies like Facebook, Padlet (<https://padlet.com>), Twitter, Instagram, Podio (<https://podio.com/site/tour>) (and many others) are informing new pedagogies, making classroom walls thinner, developing students' digital literacies, exploiting informal learning

opportunities and extending professional networks. The ill-considered use of such technologies also creates risks for students.

In 2017, we have seen the emergence of 'fake news' as a topic of discussion in the media. According to the title of an article by Sean Coughlin for BBC News, Schools should teach pupils how to spot 'fake news' (<http://www.bbc.com/news/education-39272841>). This title is a quote from Andreas Schleicher, Education Director, OECD, who continued by saying:

In the past, when you needed information, you went to an encyclopaedia... and you could trust that the information would be true ... But now ... young people go to Facebook or news websites and need to be able to evaluate what is reliable.

Schleicher realises the need for students to question and think critically, and will introduce written tests on global competency for the 2018 Pisa rankings, while universities and other education organisations have to put together fake news guides (<http://ecu.au.libguides.com/c.php?g=410543&p=4833160>)



Hot on the heels of the media coverage, the Pew Research Centre (Horrigan, 2017) Report on how people approach facts and information states that people deal in varying ways with tensions about what information to trust and how much they want to learn. One key takeaway from the findings is that there is not a typical, archetypal information consumer; another is the importance of helping people gain confidence in their digital, and information literacy skills.

Of course, educators have known all along that news (or information) is not always trustworthy, and that teaching our students information literacy skills underpins our digital engagement. There is no excuse for getting this wrong when even the New York Times is publishing excellent tips on teaching and learning about fake news (https://www.nytimes.com/2017/01/19/learning/lesson-plans/evaluating-sources-in-a-post-truth-world-ideas-for-teaching-and-learning-about-fake-news.html?_r=1). This online article covers every aspect worth considering in this context, and provides a huge collection of supporting resources and strategies to keep up-to date!

Another underutilised personal favourite is the SearchReSearch (SRS) blog (<http://searchresearch1.blogspot.com.au>). This wonderful resource covers everything about search, search skills, teaching search, learning how to search, learning how to use Google effectively, learning how to do research. It also covers a good deal of sensemaking and information foraging. With an email subscription, it is easy to pick up some interesting puzzles to challenge yourself or work teams to finding answers more efficiently and effectively. One of the secret missions with SRS is to help readers develop a working sense of curiosity and, more than that, to figure out ways to satisfy that curious twinge.

Open education

Digital scholarship is also valued for openness or open access within the boundaries of open data, open publishing, open education and open boundaries (Pearce et al., 2012; Weller, 2011), and for utilising participatory or collective ways of thinking (Bull et al., 2008; Jenkins et al., 2009). Open education has a lot going for it in the digitally remixed age. This is a global way to embrace the kind of workplace sharing that teachers the world over like to do. The difference is that sharing online and attaching open licensing makes open education valuable beyond local settings.

Open educational resources (OER) are freely accessible, openly licensed (https://en.wikipedia.org/wiki/Open_content) documents and media that are useful for teaching, learning, educational, assessment and research purposes. Although some people consider the use of an open format (https://en.wikipedia.org/wiki/Open_format) to be an essential characteristic of OER, this is not a universally acknowledged requirement.

The open educational resource (OER) movement emerged in 2002, promoted by organisations such as UNESCO and the William and Flora Hewlett Foundation. UNESCO argues that education is a fundamental human right and therefore educational resources should be freely available.

Open Educational Resources are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and repurposing by others. OER include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

William and Flora Hewlett Foundation (<https://www.hewlett.org/strategy/open-educational-resources>)

Education for all has taken on a new meaning in the digital age. A culture change is taking place with educators using the internet to share their research (open access) and teaching or learning resources (OER: open educational resources).

The Hewlett foundation define OER as:

Teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others.

The OER movement has been successful in promoting the idea that knowledge is a public good, expanding the aspirations of organisations and individuals to publish OER. By providing learning contents openly, OER can foster and manage the creation of a worldwide knowledge

society.

Clay Shirky talks about publishing as the new literacy (https://www.brainyquote.com/quotes/clay_shirky_550939) , and the opportunity for all internet users to put things out in public. Therefore, as we embrace new media and online technologies, and as we develop skills and habits of learning with new publishing modes, it is important to consider how to best represent and share these artefacts across the world. The primary purpose of copyright is to provide an incentive for people to produce new works for the benefit of society as a whole. The incentive is created by the opportunity to be paid when other people use and disseminate those works. Copyright can also reward people who create works without expecting payment, when their works end up being used by others. (Australian Copyright Council, 2017).

Thus, the Creative Commons movement has developed. Creative Commons provides copyright licences to facilitate sharing and reuse of creative content. Under creative commons, creators append a licence to their work that permits other people to use their work. For example, they permit others to use, distribute, remix, and build upon their work in return to credit or attribution. There are a number of different creative commons licences, some of which permit derivative works, and some of which forbid them, some of which allow commercial use, and some of which don't. Creative Commons Australia's website provides clear and easily understood information about understanding creative commons application, uses and licensing that is critical for the open educational resource movement.

All learners, educators and students, need to know about copyright laws, fair use guidelines, Creative Commons, intellectual property and citing sources. This is important because of legal requirements and also for ethical use of other people's creations for our own work. The fact that images, videos, text and other 'mashed up' artefacts appear online means they can usually be easily downloaded or shared – but ease of access does not mean 'free to use how and when you wish'.

This is an important concept which relates to certain ethical practices educators should be modelling as well as teaching their students.

CONNECTED EDUCATOR

Digital Scholar



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The art of digital scholarship

Digital scholarship is a big challenge that is rarely acknowledged for what it is – the prime driver of quality learning and teaching today. No longer can we consider the individual learner as the sole focus of our interest. We must also include the resources of the environment in our consideration of what we plan for and hope to achieve in our learning and teaching. The design of learning environments and learning experiences provide the opportunities to learn, which will lead to forms of engagement likely to be significant in digital environments.

Because learning is becoming globalised, educators are seeking to develop critical engagement, that is, a way of being in the world that involves intentionally engaging situations, dilemmas, and activities by leveraging disciplinary tools in order to resolve personally meaningful problems. To get a great understanding of what is possible, and the range of options open to educators, visit The Global Educator Case Studies (<http://www.julielindsay.net/p/the-g.html>)_being showcased by Julie Lindsay.

Evolving technologies and globalisation of information, communication and access to each other presents educators with the challenge of creating learning experiences to help students develop competencies to enable them to function successfully in a dynamic global society.

Connected learning (<https://www.macfound.org/networks/research-network-connected-learning/details>) as the art of digital scholarship helps bring minds closer to minds, and is a work in progress, building on existing models, ongoing experimentation, and dialogue with diverse stakeholders. Connected learning is not distinguished by a particular technology or platform, but is inspired by digital scholarship principles and design.

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