Digital literacy.
Human flourishing and education
in a knowledge society

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How is digital literacy important to human flourishing? With so many students today using online tools such as MySpace, blogs, iTunes and instant messaging, what are the implications for school leaders in exploiting these communication and collaboration instruments for their educative value? Using Pierre Lévy's work on collective intelligence to set the scene, this paper explores the types of digital literacies both staff and students will need to develop if we are to make the most of new technologies as humanity emerges into a new 'knowledge space'. At a time when many of us fear that the digital age is taking the whole human person out of the teaching and learning nexus, I argue that we have a responsibility to embrace these tools and to use them as confederates in helping us follow what Paulo Freire famously called our 'ontological vocation' to become more fully human.

The arrival of cyberspace is really putting the cat amongst the pigeons. As the world of atoms coalesces with the world of bytes, we are witnessing a measurable emergence of new patterns and forms of civilisation. The most obvious shifts are occurring in the sociological quarters of communication, regulation, economics, and politics. But other, more cultural, zones of human affairs are also affected: tradition, experience, art, science, language. This period of change is, like most periods of change, also one of opportunity; as we slowly shed industrial practices and mindsets in favour of digital ones, we are being given the chance to act ethically as a collective in a new knowledge space.[1]

This paper is about potential and opportunity and the role that educators must play in the emergence of humanity into an ethical domain where individuals contribute to a collective intelligence that leads to the mutual enrichment of human beings as a total course. Drawing on Pierre Lévy's work, which describes the role that computers have to play in developing intelligent communities, I argue that digital literacies will be essential in helping our young people attain their human potential. Put at its most basic, I believe that we will not be able to achieve a liberating, collective intelligence until we can achieve a collective digital literacy, and we have now, more than ever, perhaps, the opportunity and the technologies to assist us in the human project of shaping, creating, authoring and developing ourselves as the formers of our own culture.

In our current way of schooling, the role of the teacher thus becomes an essential one; but teachers, too, must become digitally literate if they are to succeed in raising students' critical consciousness to a point where those in our charge realise their right to 'name the world' and 'say their own word', as Paulo Freire puts it. Practically speaking, this means that school leaders must give support to teachers in the form of not just skilling up online but also in providing staff with philosophical and ethical frameworks for understanding online cultures and how the cyberworld is changing our intellectual capabilities.

One of the main points I'm going to end this paper with is that school leaders have to encourage their teachers to engage more frequently and deeply with 'the literature' (and to find ways of helping them to do that), if they are to improve the digital literacy of our children.[2] So, in practicing what I'm preaching, I'm going to start by presenting an outline of Pierre Lévy's four anthropological spaces, which I hope will give us an appreciation of why digital literacy is so

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important to the ethical development and human flourishing of our students.

How did we get here? Lévy's four anthropological spaces

In his work *Collective Intelligence: Mankind's emerging world in cyberspace* (1999 [1994]), Pierre Lévy describes the intellectual development of humanity in terms of four great anthropological spaces: the earth, territory, commodity and knowledge (Lévy 1999 [1994]: 5-8). These spaces are anthropological in that they are uniquely human and depend as such on "human technologies, significations, language, culture, conventions, representations, and emotions" (Lévy 1999 [1994]: 5). Taking each space in turn, we can therefore chart our unfolding humanity. The first great space, the *earth*, is characterised by language, technology and social organisation. Wealth in this space is gained through participation in the cosmos. The second space, *territory*, appears with agriculture, the city, the state and writing. Affiliation is the marker of identity in the territory space, and control of borders is the measure of wealth. The *Commodity* space is all about movement: flows of energy, materials, labour, capital and information. Control of such movement is the measure of prosperity and identity is determined by one's place in the cycle of production and exchange. The final space, the *knowledge* space, is still emerging, and it is all about collective imagination, the production of knowledge and the construction of intelligent communities.

It is obviously this last space, the knowledge space, that concerns us in the digital age. For Lévy, knowledge is necessarily shared and cannot be separated between human individuals. Lévy's knowledge is a knowledge of the other, a 'knowledge-of-living' which is "inseparable from the construction and habitation of a world" (Lévy 1999 [1994]: 12). We must seek to view others as a source of knowledge, says Lévy, not as an object or repository of it, and it is through this that we come to know ourselves. Thus, the computerisation of society, via the knowledge space, has the potential to "promote the construction of intelligent communities in which our social and cognitive potential can be mutually developed and enhanced" (Lévy 1999 [1994]: 17). In Freirean terms, then, it is only through true dialogical communication that we can be *with* the world, and not just *in* it.

It should be clear from the above that Lévy is presenting a Utopian thesis about the potential for people to recognise their ontological vocation to become more fully human (Freire, again) -- that is, about the potential for human flourishing -- through the cybersocial affordances of the technologies that inhabit the knowledge space. Our ability to navigate knowledge and to think collectively will come about, says Lévy, as the Cartesian *cogito* ('I think') emerges into a Utopian space of *cogitamus* ('we think'), and as the "cognitive prostheses" that we are embracing in cyberspace start to transform our intellectual capabilities (Lévy 1999 [1994]: xxiv). We are "moving from one humanity to another," says Lévy, into a new humanism of "mutual recognition and enrichment of individuals" (Lévy 1997 [1994]: xxiii; 13). But importantly this is not an incoherent operation:

> Far from merging individual intelligence into some indistinguishable magma, collective intelligence is a process of growth, differentiation, and the mutual revival of singularities. (Lévy 1997 [1994]:13)

Lévy's work, in other words, is entirely about human flourishing. It is about apprehending and responding to the human condition, and it is about our ability to succeed with others and to recognise their humanity as well as our own. As educators, we have a profound responsibility to help those in our care come to know themselves by helping them become aware of how they are socially constructed, how they socially construct themselves, and how they socially construct others. We must help them understand the social forces that act upon our humanity and how we ourselves contribute to those forces and can help shape them. From this, we must ask, 'How can we affect the human condition?' 'How can we make ourselves?' 'Where can we intervene?'

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So far, so philosophical. Quite how this might happen in a practical sense is not Lévy's concern at this stage, but it is certainly ours: it is one thing to philosophise about the world, and another to operationalise it. But before we can get to that point, we must first make a sociological rendezvous, for doing so will help us bridge the gap between philosophy and practice into a useful praxis when we consider questions of literacy.

Literacy and human flourishing

The very first claim that Lévy makes in *Collective Intelligence* is that wealth depends on the "ability to navigate the knowledge space" (Lévy 1999 [1994]: 1). For our purposes, then, literacy is key to wealth -- and not just an economic wealth, either, but a wealth of the mind. In the context of Lévy's work, this means giving people the tools to become digitally literate so that they can successfully journey through cyberspace.

Here, I am talking about the type of literacy that Richard Hoggart campaigned for when he insisted that people must be released from "the hypnosis of immature satisfactions" that can come from mass entertainments and that people in such a life position need to be taught how to help themselves (Hoggart 2008 [1957]: 250). Indeed, Hoggart's work amongst the English working class in the 1950s suggests that literacy should not be about cultural elites choosing what material is and is not appropriate for intellectual nourishment. Hoggart reminds us that

> [t]here are other ways of being in the truth. The strongest objection to the more trivial popular entertainments is not that they prevent their readers from becoming highbrow, but that they make it harder for people without an intellectual bent to become wise in their own way. (Hoggart 2008 [1957]: 250)

This point is instrumental in keeping us focused on the issue at hand because it helps us think about how we should develop amongst young people a digital literacy that will play such an important role in helping them navigate the unfolding knowledge spaces of collective intelligence. Instead of advocating a literacy that shows us how to defensively find fault with what some see as the pap that the media so unscrupulously and artfully feed The People and then expect them to consume uncritically, we should, in fact, aim much higher: we need a literacy that teaches us how to participate in, and to produce (as well as consume), digital culture. Because it is this type of literacy that will be essential to intellectual wealth and human flourishing in new cyber-realms.

Having established that a knowledge space is opening up as a result of humanity's emergence into the cyberworld and that digital literacy holds the key to our successful ethical navigation of that space, it is now time to move from the philosophical and the sociological into the practical. At base, we need to know, What constitutes digital literacy? and, How digitally literate are our students? These are the issues I will be next exploring before I present what I hope to be a sensible and realistic strategy for ethical praxis in the knowledge space.

Digital literacy: processes and proficiencies

Type 'digital literacy' into Google and you'll come up with hundreds of useful sites that all present similar understandings of what digital literacy is and what constitutes its main processes. Wikipedia, as one might expect, provides the first-ranked Google search result, and also provides the most streamlined definition:

> Digital literacy is the ability to locate, organize, understand, evaluate, and create information using digital technology. (Wikipedia 2009: online)

All of which seems fair enough to me. Continuing on the Google trail to the Northwest Learning Grid (NWLG 2009: online) in the UK and you might find a rather marvellous educational resource that quizzes and advises young people on their internet behaviour, and that pilots teachers through digital media literacy issues as those issues relate to their students (NWLG 2009: online).

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NWLG's definition of digital literacy (or digital *media* literacy, as they refer to it) aligns almost perfectly with Wikipedia's, but adds two important elements into the mix: the ability to define the task and the ability to communicate. Closer to home, the Ministerial Council on Education, Employment, Training and Youth Affairs' (MCEETYA) 2007 report on ICT (Information and Communication Technology) literacy for years 6 and 10 identified three broad elements of digital (ICT) proficiency (MCEETYA 2007):

1. Working with information
2. Creating and sharing information
3. Using ICT responsibly

In addition to these elements of proficiency, MCEETYA also identified six main processes involved in digital (ICT) literacy (MCEETYA 2007):

1. Accessing information (i.e., identifying and retrieving it)
2. Managing information (i.e., organising and storing it)
3. Evaluating information (i.e., for its integrity, relevance, usefulness)
4. Creating new understandings (i.e., creating knowledge and authoring)
5. Communicating with others (i.e., creating and sharing products)
6. Using ICT appropriately (i.e., being critical, reflective, strategic; accounting for ethical and legal usage)

When the National Assessment Program, through MCEETYA, evaluated Australian school students' ICT proficiencies based on the above measures, the findings were surprising, given all the fuss and bother that surrounds the poorly thought-out arguments on both sides of the 'digital natives' debate. Only 49% of year 6 students and only 61% of year 10 students met 'challenging but reasonable' expectations in the above six measures. Compare those figures with traditional literacy measures for reading and maths, and they might seem a bit low.

A bit low, perhaps, but not really surprising when we run these data past the research into what's going on with slightly older students who are asked to use online technologies to support their university studies. A review of first year students' experiences with technology at the University of Melbourne (2006) found that most students used technologies for their courses mainly for convenience and control. The Joint Information Systems Committee (JUSC) in the UK also discovered that students are uncertain about how to map their current learning experiences with technology onto their studies, and cannot see how ICT and learning can work together outside of school, and saw ICT either as a platform for administration or content delivery, and not as a platform for learning (JISC 2007). And in terms of competencies, a recent ECAR (EDUCAUSE Center for Applied Research) study shows that students think they are more ICT proficient than they actually are (Salaway and Caruso 2008). Just about any recent study you care to read on ICT proficiency and young people will tell a similar story.

But there are other things that the research can advise us about students' digital literacy and their related online information behaviour. Firstly, there has been an increase in full-phrase -- as opposed to more targetted -- searching, and students are satisfied with basic forms of search (CIBER 2008). But this is not to say that students' information and digital literacy is worse than before (in fact, there is no evidence to support that proposition). Instead, it has to be remembered that youngsters do not come online fully formed as expert searchers, that they have always had trouble evaluating information, and this, in turn, means that they continue to spend little time evaluating material for accuracy, relevance and authority (CIBER 2008). The fact that they have difficulty in prioritising and evaluating search results (Green and Hannon 2007) is nothing new; it's just that now students' intellectual practices are more visible because we can track and measure

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them via the public character of the internet. Secondly, young people themselves are concerned about what they see as the 'unmanageable scale' of the web (Green and Hannon 2007) and are themselves seeking guidance not necessarily on how to use the technology itself, but on how to think about and with information (JISC 2008: 24; 28). This is where the role of the teacher becomes crucial, as we bridge a digital divide that is actually less about access to PCs, and more about access to knowledge, relationships and networks (Green and Hannon 2007: 59-60) in order to shepherd those in our care through the emerging knowledge space.

At this point, we have to be careful not to forget our Utopian vision. It's now time to pull back from the focus that we've just placed on processes and measures and studies, and to think about how we can blend philosophy with research to design a plan for humane and humanising engagement with the knowledge space. Because education is about more than just processes of literacy; it is about human flourishing and, as Freire says, it's about raising people's critical consciousness to a point where they become aware of their own historicity so that they can intervene in and change the world. And, yes, that's Utopian -- but that's also education.

Return to Utopia -- but with a strategy for classroom praxis

How might this look at an operational level? I suggest two main foci for our school-level strategic plan for the blending of theory and research into practice-led digital literacy development: 1) teacher professional learning, and 2) in-class use of digital technologies.

In thinking about professional learning, I'm sure most school leaders would agree with me when I say that many of their teachers sorely lack the technical skills to navigate the digital world effectively. Even amongst some recently graduated younger teachers we hear comments such as, 'I can hardly turn my computer on, let alone figure out what MySpace is.' Their own lack of digital literacy is tendered as a point of pride. It should not be. So here is where we need to identify for our teachers two key elements to digital literacy: firstly, a technical digital literacy that involves skilling up in how the digital world works in a technological sense, and, secondly, an intellectual digital literacy that interrogates how the digital world works in an anthropological or cultural sense. Technical digital literacy can be addressed by providing not just workshops and training but also more creative ways of building teachers' skills base in 'pushing buttons'. This always seems an easy enough task because we approach it as if all we need to do is to get people to do enough practice drills and they'll be right, mate. But in fact it's rather more complex than that, because it more importantly involves changing mindsets and adjusting attitudes and overcoming fear and building self-esteem ... and any number of other very human activities that help get a person to the point where they feel confident in embracing a new way of thinking. Intellectual digital literacy, on the other hand, can be built through a critical engagement with the literature: that is, with humanist philosophy, educational theory, cultural studies, and popular non-fiction works on digital culture. It is the role of school leaders to encourage teachers to engage more frequently and deeply with the literature and to find ways of helping them do that. Too often we focus on the technical proficiencies of our staff without nurturing the life of the mind or considering how to link the two in the interests of a more strategic and enriching educational praxis.

Once we've gotten the staff professional learning part of our plan in place, we must then turn to how we use these digital technologies to occupy students in the digital world so that they themselves acquire both technical and intellectual digital literacy for worthy encounter in the emerging knowledge space. This is where imagination and artistry and inventiveness take hold as teachers use their own ever-evolving digital literacy to create meaningful and intellectually and ethically proper learning experiences for students. There is no formula for this, other than to provide staff with the opportunities to develop their own philosophical and ethical frameworks for understanding digital cultures and to use those frameworks to guide their practice. But no matter how this praxis is presented in the classroom, there nevertheless needs to be instruction for

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students on how to engage meaningfully online: they need to be taught how to distinguish active, deep, ethical intellectual pursuit from simple, frivolous, merely cosmetic obsessions. They need to be taught how to produce as well as consume digital culture, and they need to be taught how to use digital tools for communication and collaboration purposes, and to contribute in ethical ways -- through a greater knowledge of themselves and a shared knowledge of others -- to the collective intelligence of the knowledge space. Schools should be spearheading ways of showing young people how to make the most of electronic and digital media, not how to make the least of them (Hartley 2009: 20). In doing this, we are on the way to students' 'being in their own truth'.

Conclusion

Lévy says that "Humanity has become its own climate" (Lévy 1999 [1994]: xxvi). As we move into cyberspace we have to contemplate how we want to live and how we want to be human. This means both willed effort on our part to apprehend the changes that we are embroiled in by default of being human, as well as devising an informed strategy that helps us on our way to human flourishing. We need our teachers to be involved in lucid and enlightened debates about digital cultures, and we need them to be digitally literate themselves -- in both the senses I have described -- if they are to take on the responsibility of guiding our young people through the knowledge space. If we ignore our responsibilities we run the risk of getting stuck on the mechanics of life and of never finding a way to become literate in life itself. Now, more than ever, we must create the conditions for people to become wise in their own way.

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Notes

[1] It should be acknowledged that this paper is based upon the privileged perspective of an Anglo working within a philosophically Utopian framework, and all that that implies for the sidelining of questions of global politics, poverty, and injustice.

[2] By 'literature,' I mean works of philosophy, ethics and social theory, not manuals or guides on how to teach better -- valuable in-class survival texts they may be.

[3] Of course, that figure is now out of date and the number of broadband connections continues to rise.

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