

Modified, multiplied and (re-)mixed: Social media and digital literacies

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Introduction

The way educators talk about ‘literacy’ has changed. More and more often, we pluralise it or preface it with adjectives – or both. Actually, this is not entirely new. Literacy started to multiply decades ago, giving rise, for example, to visual literacy, media literacy and, more latterly, information literacy. Paul Gilster, who popularised the term ‘digital literacy’, called it into service as a book title as far back as 1997. It is a process that led logically to the New London Group’s promotion of ‘multiliteracies’. And it is a process that has recently gained speed and urgency, thanks to the proliferation of digital tools and platforms like blogs, wikis, social sharing and social networking sites – in short, social media built ‘on the ideological and technological foundations of Web 2.0’ and promoting ‘the creation and exchange of User Generated Content’ (Kaplan & Haenlein, 2010, p. 61).

Although debates continue over the advantages and disadvantages of pluralisation and prefacing (Bawden, 2008; Martin, 2008), there is no denying the upsurge of interest in new – especially digital – literacies, as borne out by recent books (e.g., Burke & Hammett, 2009; Burniske, 2008; Carrington & Robinson, 2009; Coiro, Knobel, Lankshear & Leu, 2008; Lankshear & Knobel, 2006, 2008), reports and guides (e.g., Becta, 2010; Beetham, McGill & Littlejohn, 2009; Common Sense Media, 2009; Hague & Williamson, 2009), conferences (e.g., *3rd European Symposium on Digital Literacy and e-Inclusion in Schools*, Brussels, 2008; *Pursuing Digital Literacy in the 21st Century: Reconstructing the School to Provide Digital Literacy for All*, London, 2008; *The New Digital Literacy: How ICT Modifies the European Knowledge Society*, Stuttgart, 2008; *Digital Literacy: The Role of New Media in the HE Curriculum*, Oxford, 2009; *Digital Literacy Conference: Preparing All Students for Tomorrow*, Charleston, 2010), and the formation of professional development groups (e.g., the TESOL Electronic Village Online *Multiliteracies for Social Networking and Collaborative Learning Environments*). All of the above signal a growing recognition that literacy has changed and needs to be approached differently in schools, colleges and universities.

Yet it is no easy matter to deal with the explosion of contemporary modes of literacy driven by social media. In the new millennium, literacy is simultaneously more important and more complex than ever before. Long gone are the days when basic functional literacy was sufficient for everyday life. In networked, post-industrial societies, holding down a job, staying connected with friends and keeping up with the latest information demands competence in a wide swathe of literacies, active as well as passive. And participation is not optional: those who lack appropriate literacies barely exist in digital culture and are doomed to hover on the fringes of digital societies and digital economies.

But surely there is little danger of that happening to today’s students? Surely the younger generation is dragging the rest of us, kicking and screaming, into the technological millennium? So the myth that has grown up around ‘digital generation’ – also known as the ‘digital natives’ (Prensky, 2001a, 2001b) or ‘net generation’ (Tapscott, 1998, 2009) – would have us believe. Like many myths, it is built around a kernel of truth: young people have a strong impetus to connect

and socialise with their peers online as adults increasingly bar them from traditional play spaces and hangouts like parks and malls (boyd, 2008; Byron, 2008; Watkins, 2009); they have plenty of time to develop expertise through tinkering with technology; and they do not have a pre-digital mindset about how technology can or should be used. Unsurprisingly, researchers find that youth are heavy users of participatory digital technologies and that some young people have built up considerable know-how in this area (Ito et al., 2010). Early indications from an ongoing CIBER project suggest that young net users are increasingly ‘crowdsourcing’ their knowledge (Krotoski, 2010), while new research by Accenture (2010) demonstrates that many young people are making extensive use of digital technologies, or expect to do so, in the workplace.

For all that, in the public imagination the ‘digital generation’ has been unhelpfully mythologised in at least three ways. Firstly, a growing body of research shows that factors like gender, race, language, geographic location, socioeconomic status and education level complicate easy assumptions about young people’s access to and use of technology (Australian Communications and Media Authority, 2008; Hesper, 2008; Selwyn & Facer, 2007). Anecdotally, personal (dis-)inclination also leads many young people to avoid extensive use of technology. Either way, the ‘digital generation’ is far less homogenous than this or similar terms imply (Hague & Williamson, 2009; Kennedy et al., 2009; Livingstone, 2009). Secondly, just because kids are using technology for social and entertainment purposes, it does not mean they are acquiring the critical literacies necessary to use it for educational or professional purposes, or that they fully understand its affordances and pitfalls (The Committee of Inquiry into the Changing Learner Experience, 2009; Hague & Williamson, 2009). In short, many kids are ‘tech-comfy’ but, with limited exceptions – notably a substantial minority who ‘geek out’ (Ito et al., 2010) in remix culture, and whom we will come to later – they are not ‘tech-savvy’ (Dudeney, 2009a, 2009b; Pegrum, 2009). Thirdly, many adults are far more technologically accomplished than many kids and, indeed, remix culture, which is often seen as the hallmark of the younger generation, may be better viewed as a loose partnership between older and younger digerati (cf. Ito et al., 2010), with less digitally able youth acting mainly as a receptive audience and/or viral agents for its spread.

So we should not be taken in by the sight of fingers flying across keypads or keyboards. If we fall for the ‘myth of the cyberkid’ (Facer & Furlong cited in Livingstone, 2009, p. 70), we will fail to realise how patchy many young people’s technological knowledge is. And, as a result, we will fail kids in their need to acquire digital literacies. Guaranteeing access to the internet – even enshrining it as a legal or human right, as in Finland or France – is an important step. But if we want to ensure that the old digital divide does not simply reconfigure itself around literacy issues (cf. Haythornthwaite, 2007; Warschauer, 2003), we have to start addressing new literacies more systematically and more extensively in the classroom. While certainly not intended as a checklist of discrete literacies, this chapter maps out some of the key, often overlapping, areas we must consider in preparing our students to make the most of their potential in a web 2.0 world.

Focus on language

The web is not (just) writing. The web is not (just) a book. The web is not (just) a library. Yet the web is largely about writing, is partly a book, and is, amongst many other things, a library. *Print literacy* remains a core literacy, not just offline but also online, where a high level of competence in traditional skills – the ability to write eloquently, communicate clearly and argue persuasively – is essential to hold your readers’ attention in a web article, present yourself authentically on a blog, or carry a point in a controversial Wikipedia entry. Although such skills are grounded in the print era, they can also be trained digitally. Students at lower levels can begin to develop a public identity on individual or class blogs, with those at higher levels maintaining interactive diaries, debating controversial topics in discussion forums or building collaborative projects on a class wiki. Advanced students could post to public blogs, discussion boards or wikis, with their work

being assessed not only on its accuracy or coherence but on its appropriateness, persuasiveness and overall contribution to the interactive digital context.

Although traditional print literacy skills remain important, language use online is changing in some ways. Netspeak, or textspeak – or indeed ‘txtspk’ – is emerging as a new linguistic register, one which is perfectly suited to its context of rapid textual communication on the net or mobile phones. Rather than repressing its use, a codeswitching approach to *texting literacy* in the classroom would show students when and how to switch into and out of txtspk. In the case of language learners, this would help them access everyday usage, a little like studying idioms in the target language. In the case of native speakers, it would allow them to make use of pre-existing txtspk skills as appropriate, while raising their awareness of contextual issues like those flagged up by the English teacher in the following email exchange which took place with a final year secondary school student in Australia in mid-2009 (names have been changed). It is a classic example of an educator seizing a ‘teachable moment’ to deliver contextualised input:

hey Ms S, im not at school 2da. cn u mark my essay and ill fix it 4 thur. cheers Fred

Fred,
We have discussed this in class before. Consider your audience and the task. Try again.
Miss S.

Hi Ms. Smith,

I am not at school today because I have dental and medical appointments,

Please find attached a draft of my essay; I know you don’t have much time but if you could please just take a quick look over it to see if my structure and links are good that would be really helpful!

Thanks a lot,
Fred

Punctuation is changing, too. Hyperlinks, suggests David Weinberger (2009a), can be seen as a new form of punctuation, one which, unlike most punctuation, tells us how to continue rather than where to stop. But the effects of hyperlinks go well beyond this. They often serve to indicate the main points of emphasis of a text and can shift, subtly or strongly, the weight of its arguments. They signal how open a text is, how interwoven it is with other texts around it and, depending on which sources have been linked to, they tell us something about its credibility and balance. Of course, hyperlinks can impact negatively on the narrative coherence of a reader’s experience online – with each link giving the reader an opportunity to depart and, perhaps, not return – at the same time as they impact positively on a reader’s autonomy. Students need to acquire *hypertext literacy* to analyse and evaluate such text, and increasingly they will need to learn how to punctuate their own digital writing with hyperlinks that amplify and bolster their messages.

Multiple literacies, or *multiliteracies*, as promoted by the New London Group and others (The New London Group, 2000; cf. Barton & Hamilton, 2000), have a dual focus. On the one hand, ‘multiliteracies’ can refer to the multiple languages and cultures with which we come into contact through new communication channels and media; literacy, after all, is not just about one’s native language. On the other hand, ‘multiliteracies’ can refer to the newly prominent literacies which occasionally supersede, but in most contexts complement, print literacy’s modern(-ist) emphasis on letters and words: visual literacy, audio literacy, video literacy. Although these are unlikely to ever entirely eclipse print literacy, they will continue to gain in relative importance as the age of

print recedes. Visual literacy, broadly defined, merits special consideration. With research showing that young net users are easily impressed by slick web design (Livingstone, 2009, pp. 74 & 133), they are in need of guidance on how to interrogate visual elements. Visual literacy is also fundamental to reading the web's proliferating tag clouds, not to mention its visual search displays, and it will be at the core of the ensemble of literacies all net users will need if – as in some predictions of the 'geospatial web' or '3D internet' – the future web grows to resemble a virtual world navigated by avatars. Multiliteracies can be usefully complemented by *media literacy* to promote a critical understanding of traditional media and advertising, which often work in multimodal formats with the accent on the visual. It is worth noting that multiliteracies will be crucial, too, at the point where the web meets the world (O'Reilly & Battelle, 2009), giving us both the 'internet of things' (where physical objects are integrated into the net) and augmented reality (where web-based information is overlaid on the 'real' reality around us). It has even been suggested that the skills necessary to navigate this new informational universe powered by embedded, embodied devices will include *physical literacies* (Sandford, 2009, pp. 12-13). Certainly, we will all need multiple, enmeshed skills of perception and analysis.

But multiliteracies are not just passive skills. A person who can consume but not produce media, suggests Henry Jenkins, should not be considered literate (Lacasa, 2010). Students can actively sharpen their multiliteracy skills by using web 2.0 tools like blogs or wikis to create multimedia documents; by not just listening to or watching but actively producing podcasts and vodcasts; by building multimedia narratives in digital storytelling formats; and, perhaps most productively of all, engaging in a simplified version of what Jenkins (2008) calls 'transmedia storytelling', where they would learn to express their developing ideas across multiple media. Thus, at different stages of a project, they might individually or collaboratively produce written (hyper-)texts, slideshows, audio or video files. Language learners could introduce the target language(s) into the mix, learning to codeswitch between tongues at the same time as they learn to codeswitch between semiotic modes (Hampel & Hauck, 2006).

Naturally, multiliteracies must be underpinned by a certain level of *technological literacy*, that is, the ability to use common web 2.0 and other software, and the ability to adapt to new software as it becomes available. Ideally, technological literacy should be complemented by a deeper level of *code literacy*, that is, the ability to read and write computer code. Code literacy may play a significant role in a digital divide reconstituted around literacy issues, with those competent in this area most easily able to escape the template-style strictures of commercial software; circumvent the censorware of meddlesome governments (Newton, 2009; N. Funnell, 2009); and tailor digital channels to their own expressive and communicative needs (Prensky, 2008). This raises teacher training issues, but perhaps none is so pressing as the need for a shift of mindset: teachers must be ready to work in partnership with their students, combining their own pedagogical expertise with whatever levels of technological expertise their students bring to the classroom, especially those students who are already code literate.

Focus on information

It is not only language that is changing online. So, too, are the ways we access and assess information. Most people's online experiences begin with a search engine or portal. However, few possess the *search literacy* to make the most of search engines, for example by using finely differentiated search terms, opting for visual displays, or seeking multimodal results. Few are aware of the limitations of search engines, like their frequent commercial bias or their reliance on ruthless popularity contests that may disenfranchise minority perspectives. The hit or miss nature of many young net users' information searches (Livingstone 2009, pp. 50-52; Weigel, James & Gardner, 2009, p. 10) is compounded by an overreliance on the triumvirate of the web (typically their first and only source of information), Google (typically the only search engine used, in its

basic rather than its advanced formats) and Wikipedia (typically the first result in a Google search) (Carr, 2009). That does not mean the web, Google and Wikipedia are not useful tools; but like all tools, they are well-tailored to some contexts and not so well-tailored to others. We need to help students move outside their comfort zones to explore and critique a wide set of search engines – visual search engines like Quintura or Tag Galaxy; metasearch engines like Gnosh or WebCrawler; or a searchroll creator like Rollyo – and their results. Even if students ultimately opt to return to Google for their own searches, they will have a better sense of what Google (and all search engines) can and cannot offer them, and what they themselves must bring to the search process.

Of course, it is only possible to search for information that has been indexed, and the way we index information is shifting rapidly as we move away from the top-down, hierarchical taxonomies typical of web 1.0 towards the bottom-up, organic folksonomies associated with web 2.0. The latter depend on the principle of tagging. Students need a degree of *tagging literacy* to help them grasp the nature of ‘feral data’ (Education.au, 2009) – that is, uncontrolled tags – and to appreciate the pluses and minuses of tag clouds, which may be flexible and extensible but simultaneously vague and inconsistent. Ultimately, students must learn to read taxonomies and folksonomies with and against each other (Pegrum, 2009, p. 37), juxtaposing the orderliness of the former with the openness of the latter: one major benefit of folksonomies is that, while popular tags represent ‘a kind of rough consensus on the subject of the resource’, tagging can ‘also allow minority viewpoints to emerge’ (Smith, 2008, p. 19). It is important, too, that students have the visual literacy not only to read tag clouds, as noted earlier, but to parse the many new applications, from Wordle to WordSift, which work with a tag cloud metaphor. At the same time, students must become effective taggers themselves, recording metadata that will enable them to manage their own online journeys as well as contributing to managing the connections among disparate parts of the digital global storehouse. Students can begin making these contributions from within classroom walls, by publishing class folksonomies, adding to public folksonomies, or simply learning to carefully tag their own materials online.

Assessing information is just as important as accessing it. This is where the metaphor of the web as a book or a library breaks down: all of us need to stop treating online documents as if they were pages in a book, or books in a library. ‘[D]uring the Age of Paper’, says David Weinberger (2009b), ‘we got used to the idea that authority comes in the form of a stop sign: You’ve reached a source whose reliability requires no further inquiry’. But online texts are different, even if they are based on offline models. Take web encyclopedias: Wikipedia tells us, for instance, that a kangaroo is ‘a marsupial from the family Macropodidae’; Conservapedia tells us that ‘[a]fter the Flood [...] kangaroos bred from the Ark passengers migrated to Australia’; and Uncyclopedia tells us that a kangaroo is ‘a FRIGGIN’ HUGE MOUSE’ (Pesce, 2007a, 2007b). There is not a lot of common ground here. In short: on the web there is a pressing need for *information literacy* or, as Howard Rheingold (2009c) calls it in a twist on an Ernest Hemingway quote, ‘Crap Detection 101’.

The web calls for a commonsense approach, with students comparing online information to what they already know. This means they require a baseline of knowledge to help them contextualise and evaluate new information. It turns out, then, that being able to look up everything is not a good reason for not memorising anything. Beyond this, students must learn to evaluate the origins, authorship, history, accuracy, objectivity, completeness, currency and relevance of every digital document they encounter; they must learn to notice and see through slick graphic design; and they must learn to compare any given online source with other sources, online or offline. There is little doubt that ‘triangulation’ is the future of information seeking. Unsurprisingly, given that the three encyclopedias cited above are online documents, the last two kangaroo entries – have changed slightly from the 2007 versions quoted; and any of them might be

(further) changed at any moment by just about any net user in the world. Reading the multivoiced, provisional, evolving documents of web 2.0 as if they were edited, finished, stable print documents is another common failure of information literacy (Pegrum, 2009, p. 37). One way of developing students' skills is to start with spoof websites like those about *Dihydrogen monoxide* (www.dhmo.org) or the *Pacific Northwest Tree Octopus* (zapatopi.net/treectopus/), both of which have trapped many students in the past (e.g., Krane, 2006), before moving on to the analysis and evaluation of more challenging materials. Students must learn that people bend and stretch the truth to suit their own contexts and purposes; and they must learn how, in the absence of gatekeepers like librarians or teachers, they can still find information that is suitable for their own contexts and purposes. In a sense, that is what information literacy is all about.

To be fair, we should give students the good news along with the bad. Approached the right way, digital documents can help liberate us from the tyrannical sanctity of print. Tracing the development of news stories through blogs and mainstream media is instructive in uncovering the shaping of journalistic 'Truth'. Wiki history and discussion pages reveal all the drafts written, all the points revised, and all the arguments buried in the process of constructing the current version of the 'Truth' as presented on the main wiki pages themselves (Doctorow, 2008, pp.169-170, on Wikipedia). We can encourage students to approach 'Truth' backwards – deconstructively, if you like – by following its data trail into the past, an approach which will certainly give them, and indeed all of us, a healthier attitude towards the many 'Truths' we encounter every day.

Yet there is simply too much information available for us to be able to access it all, let alone assess it. We are drowning in a morass of facts, figures, opinions and perspectives, many of them of questionable validity. Consider the number of terms coined in the last decade or so to highlight various aspects of what, back in 1970, Alvin Toffler called 'information overload': information fatigue syndrome (Lewis, 1996, cited in Naish, 2008, p. 17); data smog (Shenk, 1997); infomania (Wilson, 2005, cited in 'Infomania', 2005); Facebook fatigue (e.g., Malik, 2007); news fatigue (The Associated Press & the Context-Based Research Group, 2008); infobesity (Naish, 2008, p. 25); information obesity (Whitworth, 2009); and stream fatigue (Ilfie-Moon, 2009). What we have is information, lots of it. What we do not have is enough attention: 'Value now lies not in information, but in its relevance: filtering, sorting, contextualizing that which "speaks to us"' (Sasaki, 2009). Or, as Clay Shirky (2008b) put it in the title of his paper at Web 2.0 Expo NY: 'It's Not Information Overload. It's Filter Failure'. What is missing here is *filtering literacy*.

'If the news is that important, it will find me', one US college student observed recently (cited in Stelter, 2008). Increasingly, we need to set up filters that ensure that the right information does make its way to us and that we are not left drowning in a morass of data that exceeds our capacity to deal with it. We need, firstly, to filter relatively static web sources, which might include identifying and relying on appropriate mediation by librarians, editors, critics, journalists or teachers. We need, secondly, to filter the real-time web, keeping up with breaking news, which might involve setting up RSS feeds from trusted media sources, perhaps organising those feeds through applications like RSS Voyage; or keeping up with social news sites such as Digg or Reddit, perhaps focusing our attention through applications like Oursignal or Stack; or setting up Google Alerts for key terms trending in the news, on blogs, or on the web at large. We need, thirdly, to filter our own social networks, or, more exactly, to begin to understand our social networks *as* filters which can feed us commentary from our Facebook friends, our LinkedIn contacts, or those we follow on Twitter and, more latterly, Google Buzz. Students would benefit from educational guidance on and exposure to all these aspects of filtering.

Unsurprisingly, we are starting to hear discussions of *attention literacy* (Rheingold, 2009a). When confronted with too much undifferentiated information, we can become distracted by details and miss larger patterns (Wasik, 2009; cf. Mayer-Schönberger, 2009, on the importance of forgetting). There is growing evidence of the inefficiency and inaccuracy of multitasking, its advantages for lateral thinking notwithstanding (N.S. Baron, 2008; Kirn, 2007; Small & Vorgan, 2008; Watkins, 2009). We are seeing rising stress levels (Stone, 2008) and a rise in attention deficit disorders (Small & Vorgan, 2008; cf. Hallowell, 2007, on the increasing prevalence of ADD-like symptoms). All of this suggests that from time to time we need to turn down or even switch off the flow of information and communication in order to create space to reflect (Stone, 2008; Wasik, 2009, pp. 183-187). Any moderately sophisticated understanding of digital technologies must include an understanding of when, for personal, social, educational or health reasons, to turn them off. This, too, is something we must communicate to students.

Focus on connections

If not having your own story is tantamount to being unfulfilled in late modern society (cf. Giddens, 1991), not having your own digital story is tantamount to not existing at all in digital culture – or being, at best, an object of stories that others tell about you, or an extra in stories that others tell about themselves. *Personal literacy* (Burniske, 2008) is therefore a crucial macroliteracy which empowers individuals to develop and shape their online presence. The more digital literacies we have at our disposal, and the more we understand those literacies, the better we are able to craft a web presence that represents who we are or want to be, while reducing the risk of being misread or misunderstood (Kazan, 2007). Students can be encouraged to experiment with self-presentation on blogs or in digital stories, in the process developing the digital public voices which will be essential to their professional and social futures. In this context, an understanding of media literacy, as mentioned earlier, will help students appreciate the extent to which commercially prepackaged roles and identities are being marketed to them online (Mayo & Nairn, 2009; Montgomery, 2007; Willett, 2008). Young people need to be warned, too, of threats to their digital identities from both commercial and political surveillance and data mining (Martin, 2008, p. 174). Digital safety, as we will see, must be a core consideration.

The available evidence suggests that, far from being isolating, internet use, especially for the younger generation, is very much about maintaining and strengthening social connections (Hampton, Sessions, Her & Rainie, 2009; Ito et al., 2010; Watkins, 2009). It is likely the future of the web will be less about Google's algorithms than Facebook's vision of 'a more personalized, humanized Web, where our network of friends, colleagues, peers, and family is our primary source of information, just as it is offline' (Zuckerberg paraphrased in Vogelstein, 2009). Indeed, social media are all about this kind of connectivity. Already, more and more of us are obtaining more and more of our information not through third party news websites but through our social networks: as of late 2009, 33% of net users obtained news through Facebook and 19.5% through Twitter, according to one survey (MacManus, 2009; cf. Evangelista, 2010). Consequently, social search – that is, search which ranks information based on its relevance to members of your social networks – has become a holy grail for Google and today's other search giants (Iskold, 2009; Kirkpatrick, 2010).

Social media consultant Jerry Michalski advises: 'Trust your community to filter and flow the right things to you when you need them' (cited in Hemp, 2009, p. 86). As Hemp notes, this works because Michalski 'has at his disposal a set of powerful and personalized filters: social networks that gather, select, and value information for him'. Michalski is a frontrunner of an emerging trend. To deal with information overload, our networks can – and must – become our filters. As the swing towards the social web continues, the result will be that if you belong to

large and diverse social networks, you will be well-informed; but if you do not, you will not. To put it another way: if, as indicated in the CIBER study mentioned earlier, many young people are already crowdsourcing their knowledge, then the number and range of their sources matter. *Network literacy* is about knowing how to leverage your digital networks to stay informed or to obtain particular information as the need arises. But it is also about how far your own voice will carry as you ‘feed the network of people who follow you’, as Rheingold (2009b) writes of Twitter. In other words, network literacy is not just passive but is an active and empowering mode of literacy which allows individuals to shape their networks at the same time as they are shaped by them, and to leave their imprint on others’ informational and communicative environments. The old offline saying is more relevant than ever online: the more people you know, the more things you can do. On the web, it will come down, more and more, to networking.

That is the first reason we must not shut off access to Facebook and Twitter, MySpace and YouTube in schools and libraries: while kids from socioeconomically advantaged backgrounds will go home and begin to build their digital social and informational networks there, those from less privileged backgrounds will fall further and further behind (Ito et al. 2010, pp. 345-350; Pegrum, 2009, pp. 61, 78). As the 2009 *Horizon Report* puts it: ‘Increasingly, those who use technology in ways that expand their global connections are more likely to advance, while those who do not will find themselves on the sidelines’ (Johnson, Levine & Smith, 2009, p. 5). If one of the purposes of education is to level the social playing field, it is crucial that we do not unwittingly help the digital divide to reconfigure itself around network literacy (which would compound any trend towards its reconfiguration around code literacy, as discussed earlier). While some in-class exposure to social media platforms like Twitter would be beneficial for students, the most pressing educational intervention needed is just to give students time and space to begin building their own online networks.

Yet there are dangers here: if you open yourself to the network, you also expose yourself to the network. That, indeed, is the second reason we must not shut off access to Facebook and Twitter, MySpace and YouTube in schools and libraries. Most kids will find their way into these online spaces at some point, and we can either leave them to go it alone without any adult guidance, or we can be there when they take their first steps, offering advice on the advantages of such spaces as well as warnings about their inherent dangers. Opportunity and risk are correlated for youth online (Livingstone, 2009); we must find ways to maximise the former while minimising the latter. At its best, the internet provides space for experimenting with personal identity and exploring connections to others; at worst, it is a spatial and temporal panopticon (Mayer-Schönberger, 2009) which may tie users forever to past experiments and indiscretions. But it is not just about the information we intentionally put online. If, as suggested by a recent MIT study, a look at Facebook friend lists can accurately predict sexuality (Bankston, 2009; C.Y. Johnson, 2009), students need to carefully consider how any and all of their personal data may be used with or without their knowledge or consent, now and in the future. As Mark Pesce (2009) has asked:

Do teenagers really understand how to use the network to their advantage, how to reinforce their own privacy and protect themselves? Do they know how easy it is to ruin their own lives – or someone else’s – if they abuse the power of the network, that amplifier and accelerator of sharing?

The short answer is ‘no’. Network literacy, then, must include a component of digital safety. Teachers have a duty, firstly, to educate themselves in this area and, secondly, to open up conversations about privacy, surveillance, safety and responsibility with their students.

Fortunately, both public and private organisations are now producing materials to support just these kinds of conversations (Pegrum, 2010).

Tim Berners-Lee, creator of the world wide web, originally conceived of it as a ‘read/write’ web, but it took more than a decade for the shift to occur from web 1.0, the informational web, to web 2.0, the social web. As barriers to participation were lowered, ordinary net users could finally become creators and communicators in their own right, thereby unleashing the need for the swathe of literacies canvassed in this chapter. We now find ourselves part of a participatory culture enabled, largely, by web 2.0 and the social media which build on it:

Participatory culture shifts the focus of literacy from one of individual expression to community involvement. The new literacies almost all involve social skills developed through collaboration and networking. (Jenkins et al., 2006, p. 4)

Readers are expected to be writers. Listeners are expected to be speakers. And the more people who write as well as read, and speak as well as listen, the greater the potential. In the words of *Wired* editor Kevin Kelly: ‘Nobody is as smart as everybody’ (cited by Wesch in Bayne, 2009). Or in the words of Scott Page (2007): ‘Diversity trumps ability’. Developing *participatory literacy* means coming to appreciate how you can contribute to collective intelligence through your use of tools like blogs, wikis, folksonomies or virtual worlds. It means recognising how each of us shapes the web environment through our digital networks, whether they exist on social networking, social sharing or microblogging sites. It means learning how to leverage both social media and digital networks as we move back and forth across the porous virtual/real divide, engaging with the wider world offline as well as online.

There has been considerable discussion of the potential for youth activism online (Bennett, 2008; Palfrey & Gasser, 2008). There is some cause for optimism: a 2009 Pew Internet study, for example, reported that 37% of net users aged 18-29 use blogs or social networking sites as venues for political or civic involvement (Smith, Lehman Schlozman, Verba & Brady, 2009). Discussing the US Presidential race of 2008, S. Craig Watkins (2009) has detailed signs of rising youth political engagement both online and offline, with the former feeding into the latter. Indeed, it has been suggested that Barack Obama was elected on a technologically enabled collaborative (and not just ‘representative’) democracy platform, inviting direct engagement by all sections of the US population (e.g., Howe, 2009; Noveck, 2009). The development of a truly participatory society or culture certainly impacts on and is impacted by the teaching and learning of literacy. After all, as Dennis Baron (2009, p. 23) observes, ‘the technologies of literacy control not just who can read and write, but also what can and can’t be said’.

But it is not just about contributing ideas in political forums at the request of Barack Obama or anyone else. Armed with digital technologies on the one hand and a certain level of participatory literacy on the other, activists everywhere, with youth at their forefront, are rewriting the rules of political participation. In varied contexts around the world, ordinary citizens are turning their tools and their literacies to keeping those in power under surveillance – or more accurately *sousveillance*, i.e., observation from below – and even taking part in self-organising flash mobs (Shirky, 2008a) or smart mobs (Rheingold, 2002) which have, in the most dramatic cases, brought down governments. Small wonder that *Forbes* reported recently on ‘China’s web 2.0 nightmare’ (Epstein, 2009). In 2009, Western media focussed obsessively on the – still somewhat unclear – role played in the co-ordination of the Iranian post-election protests by Twitter (which postponed planned maintenance downtime at the request of the US Government), Facebook (which launched a Persian beta version) and Google (which added Persian to Google Translate). ‘This is the moment’, said Clay Shirky, ‘where the world participates in world politics’ (cited in Vargas, 2009). Yet web 2.0 did not carry the day for the Iranian protesters. All over the world, in

fact, governments are cracking down on the free communication enabled by the internet and turning the tools of surveillance against dissidents and dissenters (Chou, 2009; B. Johnson, 2009). When protesters are faced with police and soldiers, guns and jails, is it enough for them – or their supporters abroad – to rally on Facebook or Twitter? Likely not. Yet, although Twitter protests are obviously most effective in countries which already have democratic structures in place (Morozov, 2009), it is hard to say, for now, what role digital tools and digital literacies might eventually play in opening up or undermining more restrictive regimes. While reflecting on the ultimately uncertain impact of international web protests on Iran, blogger Chas Danner put it this way: ‘Imagine if Anne Frank had been able to get online’ (cited in Vargas, 2009).

Participatory literacy is best taught through participation, and the ideal participatory tool is undoubtedly a wiki. After learning to collaborate on a wiki in a relatively safe classroom environment overseen by a teacher, students could venture onto the wider web with assignments that encourage or require them to contribute information and insights derived from class research to Wikipedia, Simple English Wikipedia or any number of other public wikis. Going further, and exploring the link between participatory literacy and participatory democracy, students could learn about civic engagement as they experience it first-hand. For instance, they could hone their public voices by participating in social web initiatives ranging from *TakingITGlobal* (www.tigweb.org) and *Blog Action Day* (www.blogactionday.org) to the US-based *Rock the Vote* (www.rockthevote.com) and the UK-based *Battlefront* (battlefront.co.uk). Of course, teachers must also prepare students for the darkly agonistic arguments and conflicts to which participatory culture sometimes gives rise (Lih, 2009, pp. 130-131; Pegrum, 2009, p. 39). Even more importantly, teachers need to warn students that in some contexts online activism carries risks of offline retribution. A responsible educational introduction to such a politicised and politicising form of literacy must present its very considerable risks alongside its very considerable potential.

In a multilingual, multicultural world, participatory literacy overlaps with the multiliteracies touched on earlier. Ironically, the ebb and flow of languages and cultures online is leading to two real concerns. The first is connected to the increasingly polyglot nature of the internet which, notwithstanding the continuing structural dominance of English and despite the apparent benefits of linguistic democratisation, is beginning to throw up considerable barriers to international conversation (Zuckerman in A. Funnell, 2009). Joseph Lo Bianco has argued that ‘[t]here are two big disadvantages in this era of globalisation: not knowing English if you’re not a native English speaker, and being monolingual if you are an English speaker’ (cited in Burgess, 2004). This comment, made in a different context, applies absolutely to the linguistic diversification of the web. Urgent educational intervention is needed: put simply, students must be given the opportunity to acquire and use foreign languages.

The second concern is that very different cultures will find more and more occasions to (mis-)communicate with each other online, verbally or visually, and that we will see a continued rise in cultural clashes of the kind that have already started to occur (see Pegrum, 2009, pp. 82-83 for examples). Once again, urgent educational intervention is needed: students must be given the opportunity to develop *cultural literacy*, which can help them to ‘read’ artefacts produced in a variety of cultural contexts, and *intercultural literacy*, which can help them to communicate and negotiate more effectively with interlocutors from those contexts. For students of language(s) and culture(s), social media offer ideal tools for collaborative projects involving classes in different parts of the world. Examples abound of successful partnerships built on a variety of platforms, including discussion boards, blogs, wikis, podcasting and vodcasting.

At the same time, more research is needed in this area. On the one hand, cultural and, particularly, intercultural literacy have to be underpinned by an attitude of epistemological

humility (Ess, 2007) – effectively, an acknowledgment that one’s own perspective on the world is not the only, or even necessarily the best, one. But on the other hand, such an attitude is itself reflective of a Western cultural positioning which may sit uncomfortably with more absolute cultural or faith-based attitudes. Work is therefore essential on how to deal with the incompatibilities which may exist in cross-cultural partnerships, and how to turn clashes of perspectives into teachable moments. This is all the more vital because on a small planet with large problems, we need to find ways of working collaboratively towards global strategies and solutions. Education must be our starting point.

Focus on remix

If in analog times it was cool to *own* lots of books or music records or movies, in the digital age it is cool to *build on them* – to take the artifacts of our information culture and combine them into something new, something original. (Mayer-Schönberger, 2009, p. 61)

Remix involves taking pre-existing images, sounds and video from the culture around us and combining them in new ways to create new meaning (Lessig, 2007). Of course, as Lessig notes, TV and movie producers have been able to do this for decades; what has changed is that the tools of remix have been democratised, giving ordinary users of web 2.0 a powerful voice. *Remix literacy* is, of course, a metaliteracy. Remix draws on a mind-boggling array of multiliteracies and on the media literacy necessary to decode cultural products. Its viral spread through networks, often in the form of memes (Lankshear & Knobel, 2006), takes network literacy to its logical conclusion, while its parodic politics push the expressive power of participatory literacy to an extreme. For those who possess the literacy skills to encode and decode its sophisticated and subversive messages, it is a powerful medium of cultural, social and political communication.

Remix is, arguably, the hallmark of digital culture. It’s often seen, too, as the hallmark of the digital generation. Yet, as discussed above, the construct of the ‘digital generation’ is flawed on at least three counts: it ignores the diversity of youth access and use; it elides the distinction between the tech-comfy and the tech-savvy; and it overlooks adult expertise. To establish the nature of the link between youth and remix, we need to look at these points one by one.

On the first count: two widely cited surveys by the Pew Internet & American Life Project show that the proportion of young online content creators rose from 57% of US 12 to 17-year-olds in 2004 to 64% in 2006 (Lenhart & Madden, 2005; Lenhart, Madden, Rankin Macgill & Smith, 2007). The latter figure includes 26% who had remixed online content – far from a majority but, at over a quarter, a substantial proportion, and one likely to have increased further in the intervening years. Many of these young remixers would be among those identified in Ito et al.’s (2010) major study for the MacArthur Foundation as having moved along the continuum from ‘hanging out’ online (the majority youth practice) via ‘messing around’ with media (a potential bridging process) to ‘geeking out’ (developing real expertise in new media and technologies). Yet even those who just hang out or mess around play essential roles in remix culture: as a receptive audience with the skills necessary to decode remixes, and as viral agents who can spread them through digital networks. Remixes are part of the currency of youth online socialisation: circulating and responding to them is integral to building online identities and relationships.

On the second count: there is little doubt that those who geek out on remixes develop technological savvy, but they also develop a certain level of cultural and social savvy, since geeking out is not only about circumventing technological restrictions but about pushing social and legal boundaries, as well as spreading subversive ‘alternative readings of media’ (Ito et al., 2010, p. 71) as part of a larger, increasingly widespread, culturally knowing game (Wasik, 2009). Remix, then, is a subcultural practice which is gradually going mainstream – much like hip hop, a

once subcultural movement that has also gone mainstream and, perhaps not coincidentally, places great emphasis on musical remixes or ‘mashups’. While those who only circulate and respond to remixes certainly do not develop the same level of digital literacies as those who create them, and probably remain more tech-comfy than tech-savvy, they must develop at least some interpretive skills to join in this shrewd cultural game.

On the third count: while Ito et al.’s (2010) study, focused mainly on US 12- to 18-year-olds, reports a high rate of youth involvement in participatory media, echoing the Pew Internet studies, the authors note there is also considerable adult involvement (pp. 10-11). Again, this is not unlike hip hop, with its famous adult creators and legions of young amateur adopters. If many of the slickest examples of remix come from adults, who may be seen as models or mentors, some of the edgiest examples come from youth, whom Ito et al. describe as ‘taking the lead in developing social norms and literacies that are likely to persist as structures of media participation and practice that transcend age boundaries’ (p. 12). This is supported by Pew Internet figures which indicate that although, as noted above, 26% of youth had remixed content online in 2006, in 2007 only 17% of adults had done so (Lenhart, Madden, Rankin Macgill & Smith, 2007). Remix, then, is an example of an area where the expertise of some youth exceeds that of many, though certainly not all, adults, leading to a ‘struggle over authority and control over learning and literacy’ (Ito et al., 2010, p. 14).

In short, although it is important not to make easy assumptions about the ‘digital generation’ in general or the ‘remix generation’ in particular, remix culture is strongly associated with youth. It is a culture, though, in which many adults participate, and which is rapidly spreading to become the norm (Erstad, 2008). It is also a culture that draws much of its inspiration and source material from older generations of artists, designers and musicians. I have argued elsewhere that web 2.0 can be seen as a late flowering of the 1960s ideals which infused the inception of networked computing but had to wait three decades for the technology to mature (Pegrum, 2009). In the same way, remix, as perhaps the ultimate instantiation of web 2.0, can be seen as a late flowering of postmodernism, another child of the sixties. Remix is Dadaism gone global. It is Warhol democratised. It is about practices formerly open only to elite artistic outsiders and/or elite cultural insiders being appropriated by ordinary people with day jobs – or school timetables.

If such an amorphous phenomenon as remix can be said to have a single message, it is this: that there is no single message. Words and images, stories and cultures, ideas and beliefs are mixed together in ways that may be humorous, surprising, absurd, challenging or troubling – or some combination of these – and, in the best-known cases, add up to incisive commentary. Sometimes remix takes on social themes, deflating overstated claims or overweening perspectives, as in the viral ‘Pmma let you finish’ parodies of Kanye West’s spotlight-grabbing speech at the 2009 MTV Video Music Awards. Sometimes remix takes on religion’s claims to singular truthful narratives, as in the YouTube video *Jesus Will Survive – Jesus Christ! The Musical*, by self-described ‘digital-guerrilla-filmmaker’ Javier Prato (www.javierprato.com), who conflates Jesus’ story with Gloria Gaynor’s liberational anthem *I Will Survive*, now a gay staple. Very often remix takes on politicians, who make their own claims to singular truthful narratives. In 2008, when news started to trickle out about the Australian Rudd Government’s plans to censor the internet, young and not-so-young Australians flooded the web with parodic remixes, photoshopping the Prime Minister’s image onto Chairman Mao’s *Little Red Book* and into *Big Brother* posters, giving him a guest role in a *South Park* videoclip, and ironically reframing and reworking quotes from literature, film, art and advertising to signal their discontent. But it is not just rich web surfers in developed countries who are expressing themselves in this way. In 2009, when the Chinese government announced plans to install Green Dam Youth Escort filtering software on all new computers, Chinese netizens started circulating their own mashed up images and videos, drawing on elements as diverse as pictures of the ‘river crab’ (an animal whose name, with a change of

tones in Mandarin, becomes 'harmonious' and, in reference to Beijing's push for a 'harmonious society', is used as a slang expression for internet censorship) and the mythical 'grass mud horse' (whose name, with a change of tones, becomes an obscenity), as well as Japanese pornographic manga and Western references to Orwell's *1984* or the game show *Who Wants to Be a Millionaire?* Such remixes are not about speaking the truth. Rather, they are about undermining easy truths. They are a key form of expression on web 2.0, occurring beneath the radar of those who cannot or will not read them, but informing the cultural politics of those who do.

There is growing appreciation of the place of remix in education. Jenkins et al. (2006) include 'remix' under 'Appropriation', one of nine key skills they associate with participatory culture. Churches (2008) lists remix under 'Creating', the top level of his reworked 'Bloom's Digital Taxonomy'. In becoming active creators rather than passive consumers of media, students are able to develop a public voice – and no form of literacy requires a broader digital skills base or offers more expressive options than the metaliteracy that is remix. At the same time, students can activate their growing digital networks to circulate, adapt and respond to the remix products they create. Given that so much of young people's experience online, especially in educational contexts, is so limited – trapped within the walled gardens of VLEs or the templates of proprietary software – remix holds great potential to enrich their learning.

Naturally, remix has its enemies. It can be undermined from within by those who plagiarise, rather than borrow from, the pre-existing culture around them. It can be undermined from without by the twentieth century cultural industries which, through copyright law and technological blocks, seek to maintain the inviolability – and the profitability – of their content. And it can be undermined by those who, schooled in the modernist paradigm of the print era, recoil at its parodic postmodern playfulness. Educators must be aware of these and other concerns. Yes, we must guide students as they venture out onto the wild web in search of source material; yes, we must caution them on copyright and plagiarism issues; yes, we need to steer their energies into academically, educationally and publically acceptable cultural production; and yes, we need to talk to them about when, and how, they might achieve social and political goals through a combination of remix with more traditional strategies, rather than through remix alone.

All these things we can and must do. While we should be wary of its potentially explosive power, remix, if handled carefully, could form the ideal lynchpin for any digital literacies programme, bringing together students' energy, multiple digital literacies, and a focus on the real-world issues which, as adults, our students will inherit.

Obstacles and opportunities

The Australian Government is promoting a *Digital Education Revolution*. The EU has been focusing on *e-Inclusion*. The UK is working towards a *Digital Britain*. All around the Western world, there is growing governmental awareness of the need, in broad terms at least, for education in digital skills. But many educational institutions continue to resist the entry of social media into the classroom, fearing for their students' safety and their own loss of control over learning. Many teachers avoid social media because they are unprepared to use web 2.0 technology, unconvinced of its benefits, or unwilling to vary tried-and-tested approaches. Other teachers, having experimented with social media, have already retreated in the face of technical glitches, digital safety issues, cultural clashes or, simply, the challenge of dealing with students who know more about technology than they do. Some learners, and indeed some teachers, balk at the collaborative, interactive learning styles demanded by social media and their associated literacies. And many observers, from parents to politicians, query the shift towards more fluid

forms of group, peer and self-assessment, which fly in the face of international moves towards standardisation and accountability.

None of these obstacles is insurmountable, though some of the objections should give us pause for thought. There is a real need for pre-service teacher training and in-service professional development, coupled with effective dissemination strategies for relevant knowledge and skills. But embracing new literacies and new pedagogies is not an all-or-nothing proposition: traditional literacies and pedagogies must continue to have their place, with contextually sensitive teachers seeking the optimum balance between old and new. That, too, is at least partly a training issue. There is also a need for teachers to engage in learner training, talking transparently about the whys and hows of their teaching. Assessment strategies need careful (re-)development. Educating students about digital safety must be a priority. And finally, some of the most intractable issues, like cultural clashes, have no generic solutions and require much more careful investigation by researchers.

Those of us who see the need for and value in new literacies have a responsibility to demonstrate what is possible in our own classrooms; to act as viral agents for the spread of good practice; to make a convincing case for institutional support to those in leadership positions; to participate in action research aimed at understanding and overcoming the challenges inherent in new technologies; and to find ways of compensating for the dangers and risks, as outlined throughout this chapter, which some of the new literacies entail. In the end, of course, the technologies themselves matter less than the literacies they enable (Rheingold, 2008). All of us, our students included, need these literacies to navigate digital culture and express ourselves there. If we do not work with social media and their associated literacies, not only do we deprive students of considerable educational benefits, but we will find that, for students, literacies acquired outside the classroom will come to seem more and more relevant than those acquired within it – at least for those on the right side of the digital divide that will, inexorably, reconstitute itself around literacy.

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