
Mind the Gap(s): discourses and discontinuity in digital literacies

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ABSTRACT Meaning making in new media is rapidly presenting new opportunities and new challenges for those working in formal and informal educational contexts. This article provides an overview of current theory, thinking and commentary in order to map the field of digital literacy and to identify key questions for research and policy development. It identifies some of the discontinuities or gaps that exist between teachers, their students, and what technology can now deliver. Through two case studies the author tells the story of social practices that illustrate everyday digital lives and show how interactions involve a constellation of literacy events. This approach allows him to raise questions about the transfer of such practices into educational contexts and to explore the gaps between informal uses of digital literacy and current classroom literacy routines.

Introduction

Attempts to map the changing landscape of new communications technology and to chart routes through it for educators have prompted plenty of activity over the last few years. Some of the most influential theorising has resulted in a rather arbitrary construction of binaries. For example, a new generation of video-gamers emerge as being more sophisticated and better purposed for late capitalism than those who are traditionally schooled (Gee, 2004a, b); those with access to new technology are separated from an emerging underclass of those who have not (Tapscott, 1998); the digital world itself is split between 'natives' and incoming 'migrants' (Prensky, 2001). Even literacy, as a field of study, has mutated into something like 'New Literacy Studies' (Street, 1997) or 'new literacies' (Lankshear & Knobel, 2003), distancing itself from the study of traditional print literacies.

When children and teachers set foot on this landscape we might well ask ourselves how useful our maps are, and how helpful it is to speak in terms of binaries or even compelling futures. Looking at how local teachers and children engage with the sorts of experience in virtual worlds provided by Active Worlds Education (AWEDU), I have been struck by the discontinuities or gaps that exist between teachers, their students, their homes and their schools, the academic researchers that work with them and what technology can now deliver. In exploring these issues, with the sort of wisdom that retrospection affords, I have become aware of how my own work could be seen as a sequence of bridging exercises through which I have attempted to see what meanings and uses colleagues and teachers make of digital literacies in their classrooms (for example, Merchant 2001, 2004, 2005).

In this article, I explore some of the changes that might be said to define digital literacy as a new kind of literacy. I begin by identifying what seem to me to be the distinctive features of digital literacy. I then go on to illustrate some of these features in the context of everyday practice and then consider the implications for the world of education. Drawing on Bourdieu's notion of capital, the article explores 'digital capital' as a way of conceptualising how things get done with these new

practices. I ask under what circumstances digital literacies can be seen as cultural capital, and what patterns of social or civic participation are beginning to emerge. I then move on to a tentative exploration of the role of digital literacy in the new kinds of knowledge-building that are beginning to emerge through online social networking.

Discontinuities between everyday practices and literacy as it is presented in school settings are well documented. I conclude this article with a brief look at the gaps in our thinking here. I suggest that in a world in which there is much talk about the blurring of boundaries we should begin to think in more creative ways about defining new spaces in and out of educational settings that allow for exploration of popular digital literacies.

1. Digital Literacy – competing discourses

Recent revisions to the framework for teaching that guides literacy instruction in England and Wales, like those in other English-speaking countries, place a greater emphasis than earlier versions on the use of new technology. However, the political drive to return to basics, currently framed in the United Kingdom in terms of the ‘simple model of reading’ and in the USA as Reading First, works against the recognition of popular digital literacies in the classroom, instead reframing technology as a tool for teaching. Interactive whiteboards and software for skills teaching are more likely to be pressed into service to support ‘basic reading’ than anything as adventurous as online social networking. The renewed narrowing of conceptions of literacy and the widespread inability to accommodate texts such as those produced in a virtual world (see Figure 1) help to construct the sort of view voiced here by the teacher avatar (‘Interactive texts would be great here cos we could analyse them and use them in literacy’).

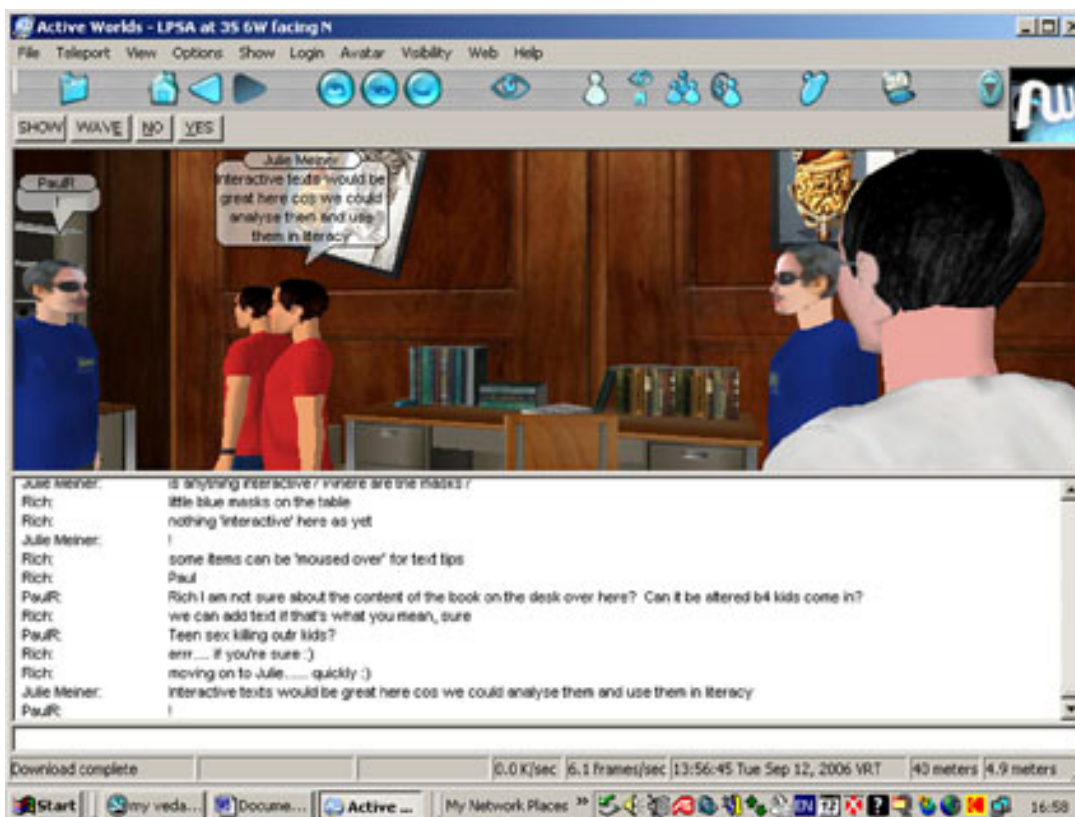


Figure 1. Interactive texts would be great here cos we could analyse them and use them in literacy.

The assumption implied in this comment is that digital literacies, such as interactive written conversation, the virtual world itself and the in-world interactive text referred to, only become educational once they are deployed in the pedagogical routines called ‘literacy’. It seems, then, that

at this point in time, a clearer sense of the place of literacy in the world of new communications is needed in order to realign our curriculum with wide-reaching changes in social relationships, patterns of employment and the knowledge economy.

When we consider the forms and functions of writing on-screen and the texts and contexts in which digital literacy is located there are a number of important shifts of emphasis. These seen together constitute a radical new development in literacy. The most salient of these shifts and characteristics are:

1. a move from the fixed to the fluid: the text is no longer contained between the covers or by the limits of the page;
2. texts become interwoven in more complex ways through the use of such devices as textual hyperlinks and commentary tracks on DVDs;
3. texts can easily be revised, updated, added to and appended (and often archived);
4. genres borrow freely, hybridise and mutate;
5. texts can become collaborative and multivocal, with replies, links, posted comments and borrowing;
6. reading and writing paths are often non-linear;
7. texts become more densely multimodal (as multimedia allows for a rich interplay of modes);
8. roles of readers and writers overlap;
9. the communicative space is shared and location diminishes in significance as the local fuses with the global;
10. the impression of co-presence and synchronous engagement increases;
11. boundaries begin to blur (work/leisure; public/private; serious/frivolous; online/offline).

So the transformation in literacy revolves around new possibilities for meaning making, new kinds of texts, easier combinations of semiotic systems and new communicative relationships as well as the effects of more general features such as the ease and speed of communication and the largely unregulated nature of publication and audience.

Competing discourses in digital literacy adopt different stances and definitions of the topic area, and this conflict contributes to a major gap in understanding. I have argued elsewhere (Merchant, 2007) for a principled focus on the digitally-mediated written word, but am well aware that this stance is contentious. In order to have the informed debate with teaching colleagues and policy makers that we now need to have, some of these gaps in understanding need to be bridged. If the teacher who spoke through the avatar about interactive texts continues to subscribe to the belief that literacy only happens when it is approached in a traditional way, and if the policy documents that inform her practice reinforce this view, change in schools is going to take a long time.

Teachers, Students and Digital Literacies

It is not surprising that when teachers think about literacy, they think about it primarily in terms of the school curriculum and pedagogic routines. There is an abundance of research evidence that looks at the differences between children's encounters with literacy in the home and in the school (Hannon, 1994), most of it pointing to the existence of a particular repertoire of practices that might be described as 'schooled literacy'. This descriptive category is understandable when we consider the essentially practical nature of most teaching, concerned as it is with questions of 'how to do literacy instruction' with classes of 30 or more children with diverse understanding, skills and dispositions – a situation which is exacerbated by curricula that are based on a linear (and singular) model of literacy, and policed by high-stakes testing and other accountability measures. When this system is faced with fundamental challenges in what actually constitutes literacy it may well have a destabilising effect. In the United Kingdom, as elsewhere, the tendency to look at new technology in terms of its capacity to enhance the learning of traditional literacy skills is well documented (Lankshear & Knobel, 2003; Larson & Marsh, 2005; Burnett et al, 2006). In classrooms this is manifest in some uses of interactive whiteboards, and in the research community in a narrow view of what is at stake. So, for example, the Evidence for Policy and Practice Information Centre review, which was set up in 2001, attempted to address the question, 'What is the impact of ICT [information and communications technology] on literacy learning in English, 5-16?' (Andrews,

2004). A sub-review looked at the effectiveness of ICT in improving young people's literacy based on a review and analysis of randomised control trials. It concluded there was no evidence to support the claim that ICT-based literacy instruction and resources were any more effective than non-ICT approaches (English Review Group, 2004). Leaving aside the decidedly narrow definition of what counts as research evidence, it is significant that the research question itself constructs ICT as distinct from literacy – as a way to become literate rather than as a site for literacy in its own right.

Closing the Gap

Over the last 20 years, national governments and local administrators, often in partnership with entrepreneurs, have invested large sums of money in purchasing hardware and software for schools and classrooms. According to Torgerson & Zhu (2004), over £1 billion has been spent by the UK government in the last five years alone; it is estimated that the Australian government has invested half a billion dollars a year since 2003; and this pattern is repeated elsewhere. Unfortunately, as critics have pointed out, this investment in new equipment has not always been matched by a similar investment in professional development (Torgerson & Zhu, 2004). Teachers' confidence in their personal use of ICT is generally quite low. Research commissioned by the Scottish Office (Williams et al, 1998) suggests that teachers 'are still in the early stages of ICT development'. A similar pattern emerges from the National Center for Education Statistics report on teacher quality in the USA (NCES, 1999), and a more recent review on barriers to the uptake of ICT by teachers suggests that confidence, along with time and access, are crucial determining factors (Becta, 2004). Partly as a result of these issues, the development of innovative classroom practice has largely been the province of enthusiasts. Nevertheless, any meaningful exploration of digital writing in the school system is, of necessity, dependent upon technology, and so the resource issue certainly warrants close attention.

In considering the resource dimension of digital literacy, it is useful to separate out some distinct, yet interrelated elements (see Holloway & Valentine [2002] for a useful exploration of these issues). So, for example, there are issues of *provision* – what hardware and software is provided and how it is updated; *location* – where this equipment is situated in schools or classrooms; *access* – how and when teachers and pupils can get to the hardware and software; and *use* – the actual practices that are promoted in, and outside of, the formal curriculum. There is growing recognition that these factors work together to frame educational practices, and that changes in ICT policy need to take account of their interplay (Holloway & Valentine, 2002; Becta, 2004). Future research that focuses on school, district or system-level innovation in ICT will need a design and research tools that are sufficiently robust to cope with this complexity.

But as the earlier analysis of the characteristics of digital literacy suggests, there is an equally important task to engage in. We need to begin to explore pedagogies that are sensitive to emerging patterns of interaction, to the sorts of social networks that are created by the interweaving of online and offline practices, and to the kinds of knowledge-building processes that are starting to develop with more widespread use of new media. In the following case studies I tell the story of two different kinds of practice which illustrate everyday digital lives and show how actions involve a constellation of literacy events. This allows me to raise questions about the transfer of such practices into educational contexts and to explore the gaps between informal uses of digital literacy and current classroom literacy routines.

2. Thinking about Digital Capital

In this section I begin to look at the growing power of digital literacy in everyday life. This discussion is informed by Bourdieu's (1977) notion of cultural capital as I illustrate through example how knowledge of the ways in which new systems of communication work can allow for greater levels of social and civic participation. I argue that those who have access to new technology and knowledge of its potential wield the power of the new force of digital capital. This digital capital is increasingly significant in advanced education and employment in late capitalism (Gee, 2004b).

However, inequities in digital wealth may well map on to existing social inequalities and so, I shall argue, a more systematic approach in education should be an entitlement for all students.

Bourdieu suggests that schools favour particular linguistic patterns and practices and specific kinds of knowledge and behaviour, and by so doing draw unevenly on the social and cultural resources that children and young people bring with them from home (Bourdieu, 1977, 1992). For some social groups, these social and cultural resources are recognised and readily converted into 'cultural capital'; other social groups may not be so fortunate. Although critiques of Bourdieu's position suggest that he fails to account for individual autonomy, social mobility and the changing nature of social life (see, for example, Giroux, 1983), the concept is still useful in looking at how resources become capital in different 'markets', particularly with respect to digital literacy.

Research in the ethnographic tradition which has looked at the relationship between home and school literacies from Heath (1982) through to Gregory and Williams (2000) has provided a wealth of evidence that shows how pre-school practices are, or are not, converted into capital on transfer to school. These studies suggest that the differences run deeper than broad social groupings, and relate more directly to the specific detail of community values and practices. Brooker's (2002) case studies provide vivid examples of how children from the same social class, who have rich but diverse home literacy experiences, are set upon different educational trajectories in the early stages of compulsory schooling. From this account it seems likely that the same will apply to the use and application of new technology. In short, the match or mismatch between children's and students' everyday experiences of digital literacy may or may not translate into capital in educational contexts.

To explore the notion of digital capital and market value I will, for the time being, turn attention away from the area of education and look at an example of the use of digital literacy in an everyday setting, showing how the fluid social networks of new technology can actually achieve a level of social participation and action. It is perhaps worth observing in passing that this example also illustrates the shortcomings of any attempt to separate life online and offline (see Leander & McKim, 2003) and, as a result, raises further issues for educational settings.

The Case of the Community Street Piano

In the summer of 2005, a group of undergraduate students and their friends who lived in the Sharrow area of Sheffield were preparing to move house. Shifting belongings in a van from one place to another, they found that they could no longer find space for their piano in their new accommodation and so, after some deliberation, they decided that the best course of action would be to donate the instrument to their local community. And so, in due course, the piano was placed against a brick wall on a busy byroad and covered with blue tarpaulin to protect it from the English weather (Figure 2).

Notices on the piano introduced the 'Sharrow Street Piano' and invited passers-by to play – within the specified 'opening hours'. The group then set up its own website with a view to communicating with a wider audience about the Street Piano (www.streetpianos.org). Here they described how: 'On top of the instrument clearly spelt out in black marker pen on the remains of an old cardboard box, was a sign which simply read: "STREET PIANO – feel free to play anytime between 9am and 9pm"' (streetpianos, 2006, Hugh's Story, Part 1).

The full story, which includes local media coverage following the theft of the piano and its eventual replacement (resulting from postings on the discussion forum on the streetpianos website), is chronicled on their web pages, but the most interesting recent episode concerns the local authority's attempt to have the piano removed.

In July 2006 an order for the removal of the Street Piano was issued by the local council. Now by this time the piano had attracted the attention of the local Flickr photo-sharing community who began to document the appearance of notices taped to the piano pledging support and registering opposition to the council's intentions. The campaign then spread through a network of blogs (e.g. mollsmusings, 2006) to local and national media. This resulted in a peak-time interview on national radio news in which a spokesperson for the local council capitulated, later issuing the following statement: 'The piano seems to have gained cult status ... These issues are not always black and white and we are not above having a bit of fun. We have received no complaints ... we are

prepared to let it stay where it is' (streetpianos, 2006, press release 4 July 2006). And finally, all this attention led to a television documentary made by an independent film company which was broadcast on national television in early October 2006.



Figure 2. Playing the Street Piano.

The story of the Street Piano is of interest from a number of points of view. It provides a clear example of how new technology provides possibilities for new kinds of social participation. At the same time it shows how digital writing, in this case on the website, the discussion forum, blogs and photo-sharing sites can be interwoven with more traditional forms of communication to create affinity groups with a shared purpose (Gee, 2004b). Whilst the issue at stake may seem relatively trivial, it serves as a clear example of how civic participation and political mobilisation can be achieved through digital literacy. The Street Piano story also highlights some important characteristics of the use of digital writing and its position in a constellation of literacy practices. Firstly, it is the essential ingredient in a web of communication that runs across different platforms; and secondly, it shows the intersection of the personal and the public (with its wide reach across geographical space) and the seamless blending of online and offline worlds. In the case of the Street Piano, the campaigning group had access to the cultural resources of new technology and were able to translate these into an influential form of digital capital. If the arena of local politics and pressure groups can indeed be described as a 'market' (following Bourdieu, 1992), then digital capital can be seen as a potent force.

In a similar way, and on a wider scale, there is plenty to point to the ways in which people are learning to harness the power of digital literacy. This development is particularly the case in the world of blogging. The influential status of political and journalistic blogs has attracted considerable attention – particularly in the USA (see Lankshear & Knobel, 2006; Bruns & Jacobs, 2006). It could be argued that we are rapidly approaching the point at which communication through digital literacy is not simply a way of maintaining our social networks but a key to new forms of social and civic participation. A central question for educators is how schools and other institutions can translate the everyday experiences of children and young people into this sort of digital capital.

Digital Capital in Schools

Large-scale surveys on both sides of the Atlantic have documented substantial changes in children's engagement with new technology and charted the impact of new media on their everyday lives (Livingstone & Bovill 1999; Roberts *et al.*, 1999; Roberts *et al.*, 2005; Livingstone *et al.*, 2005). But research also seems to show that the digital skills that children and young people bring to school are often undervalued. UK-based studies of children in the early years (Marsh, 2004; Merchant, 2005), through early schooling (Facer *et al.*, 2003) and into the teenage years (Holloway & Valentine, 2002) provide ample evidence of this trend. It appears then, that a whole range of cultural resources fail to be translated into cultural capital in the school system.

As was observed earlier, innovation in the use of ICT in schools has tended to be resource-driven, and relatively little work has been done to close the gap between real-world uses of technology and ICT in the classroom (Burnett *et al.*, 2006). Ethnographic studies of literacy practices in home and school, whilst focusing almost exclusively on print literacy, have highlighted how children's differences in experience readily translate into assets or deficits (Brooker, 2002). In order to avoid replicating this pattern in our use of digital literacies, more work needs to be done to understand the everyday digital practices of children and young people in order to build school experiences that draw on their cultural resources rather than ignore them. Furthermore, school curricula in literacy and ICT need to address the question of how well they equip all pupils with those powerful and marketable skills and understandings that underpin new forms of social participation and working practice.

3. Knowledge Production and Social Networking

As we have seen above, in the case of the Street Piano, social networking sites provide a context for affinity, facilitating the development of ad hoc and purpose-driven or interest-driven groups in which self-directed learning can take place. This example not only provides us with a model for structuring learning communities, but also gives a powerful justification for using or modifying existing software for educational purposes. Popular networking sites provide opportunities for geographically dispersed groups and individuals to communicate, exchange information and develop ideas. They also thicken existing social ties, by offering new opportunities and channels of communication to those who are already known to each other (such as family and friends – see Wellman, 2002). Furthermore, they are places for rehearsing ideas, making new connections, and new meanings. In this section I take a closer look at the tag feature that is widely used in social software – a feature that allows for indexing and categorisation – as a way of illustrating the learning potential of digital literacy.

The example of social networking used here takes place around visual images posted in the Flickr photo-sharing community. Of course, what Flickr (Beebo or Ringo) does for the visual image, Pandora does for music, and YouTube does for video. But interestingly, whatever the medium, or type of object that is being shared and categorised, the primary mode of interaction and categorisation is the written word. I suggest that category-tagging and the development of folksonomies is an example of a new literacy (Lankshear & Knobel, 2007) and one that has important implications as well as considerable potential for developing learning in educational environments. Category-tagging at the most basic level allows users to attach their own keywords or phrases to items they upload, allowing for searching and grouping across a particular domain.

The idea behind any folksonomy is that a body of knowledge can be built democratically through participant-users without the traditional authority of a discipline, a body of experts or an established tradition of practice. As such, category-tagging and the creation of folksonomies are a powerful iteration of new literacies, enabling us to do things in new ways. Foucault (1989), in *The Archaeology of Knowledge*, laid bare the ways in which formal knowledge is accumulated and codified through discourses, policed by the exercise of power within social elites such as the academy until it achieves an authority of its own. The ideal-type folksonomy works in ways that are diametrically opposed to this pattern. As with a wiki, all readers are potentially writers, power is shared and knowledge is accumulated by collaboration rather than through hierarchical control and domination.

Category-tagging is the process by which objects or ideas can be classified. So in blogging, photo-sharing and music-exchange sites, you code your own objects [1] with keywords or tags that can then be searched for and grouped in a variety of ways. Of course, in some ways there is little difference between this activity and the established academic practice of attaching keywords to journal articles; but there are some small but significant differences.

Firstly, category-tags in online social networks are primarily generated by user interest, rather than pre-set norms and conventions. Secondly, category-tags can be changed, updated or added to as new relationships to other objects are realised. And thirdly, other people can add category-tags to your objects. This allows objects to be pooled and grouped in diverse and fluid ways in a process that is controlled by the community of users, rather than an elite group. Imagine a library in which books and journals could be organised and reorganised at the click of a finger by subject, by topic, by date or by size and colour – or whatever category readers apply – and you begin to understand the magic of a folksonomy.

The power of the folksonomy idea began to grip Internet enthusiasts in the late 1990s when software development, increased connectivity and computing power opened up new possibilities. Detractors were concerned about inaccuracy and misinformation as well as the potential for undermining the good work of traditional systems of coding and classification – a theme, incidentally, that resurfaces in discussions about wikis. Meanwhile, enthusiasts saw the huge potential for new knowledge practices and processes, and even the wholesale democratisation of learning. The truth falls somewhere between, with the most popular folksonomies providing for creative connections between people and interests, and a way of establishing some sort of order in the proliferation of detail. In social-networking sites, category-tagging allows us to establish allegiances with others who have similar interests or who 'have' similar objects and in this way provide opportunities for the creation of what Gee (2004a) calls affinity spaces.

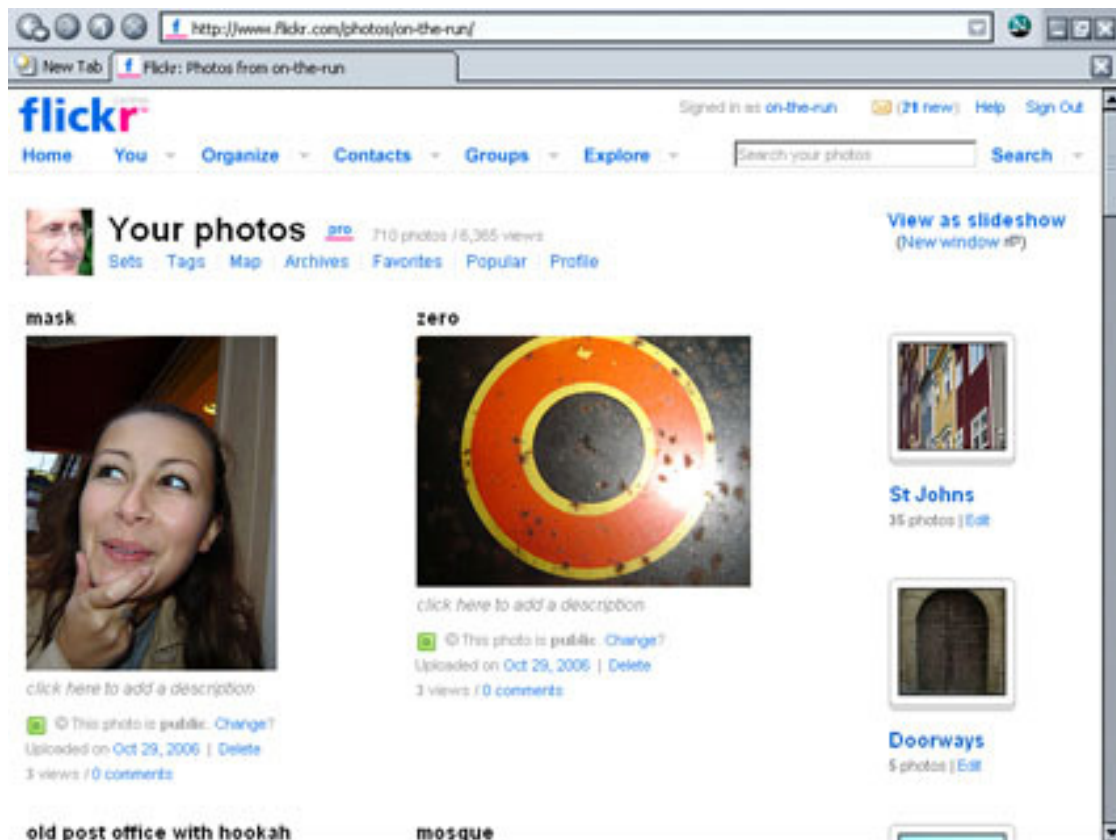


Figure 3. The Flickr portal.

From Knowing to Using Flickr

The example provided here is based on category-tagging within the Flickr photo-sharing community. Flickr provides a service which allows for the online storage of digital photographs. At entry level, once you have signed up, you develop your own pages which become a portal through which you upload and organise your own images. You can keep your photographs private, restrict access to named people, or open them up to all-comers, to 'Flickrites' and to the public at large. By way of illustration, Figure 3 shows the portal interface and gives an impression of the Flickr look. On this you can see recent photographs, how sets can be organised, and general navigational tools.

Applying a category tag is shown in Figure 4. The user simply enters a list of keywords in the box, and these are then displayed each time this photograph is shown. Searching your own photographs for that category-tag will bring up all the photographs you have coded in this way. This grouping may coincide with a set or cut across sets and may even suggest to the user that she or he create a new set. In a similar way, you can search across the site looking at how other users have used a particular tag.

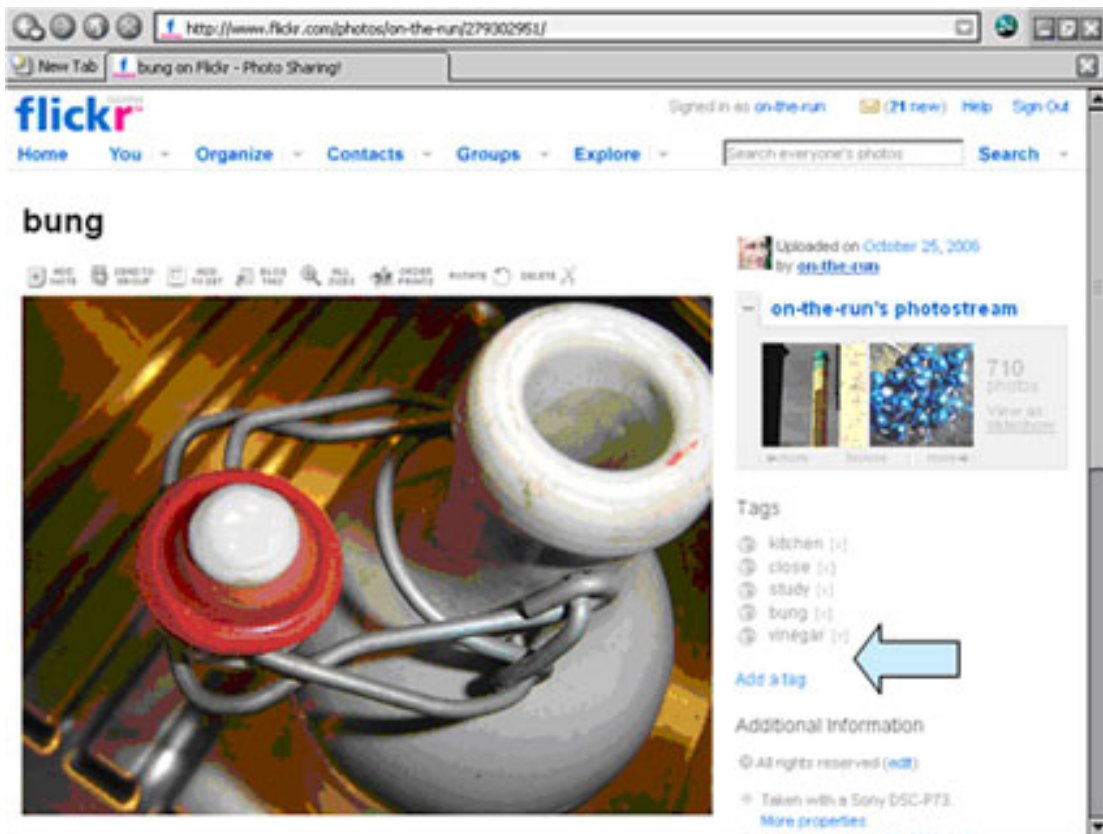


Figure 4. Tagging images in Flickr (the blue arrow shows where tags are listed and added to).

To join Flickr, as with any other social-networking site, is to become part of a community. However, the user determines his or her position in the community by the level of engagement with others. In other words, you choose the level of participation and the degree to which you have a presence or identity within the larger community. So for some users, the central motivation for using the service is as a way of storing photographs on someone else's server, and perhaps, as a result, freeing up space on a hard drive. This, together with the facility to allow friends and family access to these images (at any time and any place) is sufficient and certainly does not necessitate the use of category-tags. My own initial use of Flickr had all of these attributes, and the photographs I stored there were principally used as a bank of images for my own blog. Although I understood the concept of tagging, used it, and understood its role in creating folksonomies, my interest stopped

there (Figure 5). I was not particularly interested in establishing much of an online identity in the Flickr community.



Figure 5. The Flickr tag cloud, showing most popular category tags.

The Case of the Padlock Group

In the summer of 2006, through my engagement in a new project which involved the creation of a virtual world, I found myself roaming the neighbourhood, armed with a small digital camera photographing walls and doorways to use as textures. I would upload these images to my Flickr photostream and store them in a specially labelled set called 'Pieces for a virtual world' for use by the designers based in Finland and the USA. Photographing a factory gate, on one particular occasion, I was rather taken by the sight of a shiny silver padlock against a strong blue background (Figure 6). Uploading this image later that day, I decided against 'dignifying the everyday' as a tag and went for the more obvious 'padlock' descriptor. Within a matter of hours I had been invited to join the padlocks group, a micro-community within Flickr that specialises in padlocks!

It is at precisely this point that the business of category-tagging becomes a significant social practice of literacy in its own right (Street, 1997). In this instance the tag becomes a gateway to what Gee (2004b) describes as an affinity space. Affinity spaces are described by Gee as being guided by purpose, interest and content. Thus the endeavour or interest around which the space is organised is, for Gee, the primary affinity; it is less about interpersonal relationships and more about the exchange of information itself. Having accepted the invitation, I now had taken on a temporary identity as someone interested in padlocks – not a piece of information I was particularly keen on sharing with friends – but nevertheless this was a new kind of engagement.

This engagement with the padlocks group alerted me to an aspect of the urban environment that I had not previously noticed. I began to look and think about the ways in which we are locked in and locked out of certain spaces. In short, I began looking at my environment in a new way. As I posted my pictures, I also became aware of the different makes, sizes and ages of the locks, their

serial numbers and so on. The process of categorisation led to the accumulation of new information as well as a new way of seeing. But, of course, the collection of information, the sense-making, the organisation of information through categorisation and the trading of detail and knowledge describe some of the essential processes of human intelligence.

Substitute the attentive noticing of padlocks for looking at squares and circles and you have a familiar item in an early years mathematics curriculum; categorise life forms into vertebrates and invertebrates and you have a fundamental building block for the natural sciences. In this way, I want to argue that category-tagging and building folksonomies has an important role to play in illustrating knowledge-building practices between dispersed individuals and also shows how a new form of digital literacy has educational implications.



Figure 6. The original padlock image with category-tags.

Modelling the Process

One of the fundamental features of the example of category-tagging I have just given is the way in which it is socially located. After all, Flickr is described as a social-networking site. As I have shown, the degree to which the user invests time in networking is nothing but variable. However, it is only through social participation that one becomes part of a group. If the sharing of interests through the pictures we take comes close to a kind of learning (and maybe there are some situations in which this is more central than others), it quite clearly constitutes socially-situated learning (Wenger, 1998) – despite the fact that face-to-face contact between participants is unnecessary and probably quite rare.

Another feature that seems important here is the use of literacy – that is, literacy in the sense of 'lettered representation'. This is interesting, because Flickr is driven by the visual image. But words are more useful when it comes to categorisation, and of course they are more specific for interactive purposes, such as when one Flickrite wishes to invite another to join a specific group. We might envision a world in which icons could fulfil these two functions, but I argue here that the affordances of this kind of digital literacy make it a powerful tool for organisation and interaction

and actually, when we view Flickr as a whole, provide the mechanism for the sifting and flow of visual images.

In Figure 7, I have attempted to model the process of what happens when we start category-tagging in the ways described above. In the first part of the cycle I distinguish between the everyday sense in which we see the world and what I have referred to as *attentive noticing*. Seeing can transform into this attentive noticing when we begin to label things in our environment. This act of labelling is normally linguistic. It could be an oral or symbolic representation, but in the padlocks example the tag is a written form. To suggest that the simple act of attentive noticing leads automatically to *knowing* is, of course, over-simplifying complex issues. It might be better to cautiously suggest that attentive noticing sets up the conditions for knowing. More importantly though, I wanted to argue that this cycle of events begins to transform our seeing into *informed seeing*, as we begin to look more closely. In my case this process involved beginning to distinguish between the Abus and the Yale, an essential rite of passage for a padlock collector.

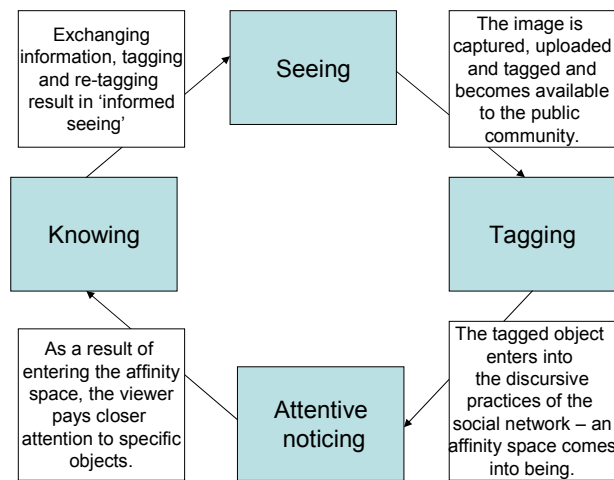


Figure 7. Attentive noticing and the role of category-tagging.

A final and important element in this process hinges on motivation and purpose. It seems to me that the amount of energy and resource that one is prepared to invest in a particular act of knowledge building will determine the level of social participation, and the learning that takes place. In short, the degree to which one identifies with the affinity space is decisive.

Schools and Social Networking

New trends in digital culture, sometimes collectively referred to as Web 2.0 (O'Reilly, 2005), have begun to emerge over the last few years. These have come about through the increased availability of broadband connectivity coupled with rapid dissemination of user-friendly applications that depend upon social participation as a way of generating new content, exchange and playful interaction. Of particular note here are individual and group blogs; web pages which are designed for collaborative authorship (such as wikis); platforms for generating and exchanging media such as music, still and moving images; and three-dimensional virtual worlds. As I have argued, these social-networking sites provide a context for affinity in which self-directed, informal learning can take place.

For an increasing number of young people, online social-networking provides new opportunities for communicating with friends and new ways of making friends. This sort of digital interaction lies at the very heart of online social-networking. As we know, computer systems can store and retrieve huge amounts of data in different media. Harnessing this capacity to enhance communication and collaboration is the life-blood of online social-networking. At the same time, social-networking is almost exclusively mediated through written communication and as such it constitutes a prime site for future research into digital literacy and its educational uses.

One of the most challenging aspects of social-networking that schools will have to address is the fundamental shift in power relations involved. In social-networking environments, teachers will need to become facilitators, encouraging pupils to become responsible and critical readers and writers in peer-to-peer contexts. Inevitably there will be a blurring of boundaries – a networked classroom allows its learners out of the classroom and invites the world in. Alongside the well-rehearsed concerns about this issue, there are as many advantages as we begin to imagine a more relevant and varied educational experience for children and young people. And perhaps we should also begin to think in more creative ways about defining new spaces in and out of educational settings that allow for exploration of popular digital literacies in which important learning can take place.

Conclusion

In this article I have illustrated some ways in which digital literacy is central to new kinds of social practice. By using everyday examples I have shown how literacy continues to play a part in social participation and knowledge building and how digital connection allows this to happen in ever more fluid and distributed ways. This plural and flexible development contrasts starkly with the educational routines of book-based literacy as well as with dominant ICT pedagogies which often maintain centralised control through teacher-led use of whiteboards, instructional software and highly structured virtual learning environments (VLEs). I suggest that everyday uses of new technology, together with recent Web 2.0 developments, raise new questions about digital literacy and its role in education. For instance: what should we teach children about the kinds of online communication that are helpful to relationships and helpful to learning; how can teachers support and encourage peer-to-peer interaction without stifling it, and above all, how can we help pupils to become critical readers and writers in online environments? Here I have begun to explore the characteristics of digital literacy and to make some sense of new forms of communication. This discussion includes the changing nature of literacy, and the skills, understandings and attitudes that we will need to encourage in our schools. I suggest that a clearer sense of what is involved in digital literacy will result in teachers and pupils being better prepared for the future.

Gaps between real-world uses of technology and new technology in the classroom continue to be a cause for concern. At the heart of this concern is the sense that a whole range of cultural resources fails to be translated into cultural capital by the school system. We need innovative work in digital literacy, particularly in educational settings, to investigate the implications of new forms of social-networking, knowledge-sharing and knowledge-building. And finally, because of the pervasive nature of digital technology, the commercial interest that is invested in it, and the largely unregulated content of Internet-based sources, we also need to begin to sketch out what a critical digital literacy might look like. There is, in short, plenty to be done if we are to prepare children and young people to play an active and critical part in the digital future.

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Notes

[1] I use the word 'object' here to describe ideas, artefacts, music or image.

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