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THE USES OF MULTIMEDIA: THREE DIGITAL LITERACY CASE STUDIES

Abstract

We identify some tensions between formal education and informal learning in the uses of popular literacy since the nineteenth century, in order to argue for a 'demand-led' model of education in digital literacy. We go on to analyse three case studies — digital storytelling, the Flickr photosharing site and the MMOG (massively multiplayer online game) Fury — to discuss issues arising from demand-led learning, which requires a procedural (not propositional) model of knowledge, a vernacular and informal model of creativity, and a 'navigator' and entrepreneurial model of consumer agency. In light of these examples, the article raises the question of how digital literacy can and should be taught.

In this article, we wish to identify some of the issues related to the propagation and uses of multimedia digital literacy and, in doing so, to report on three case studies. Referring to an influential definition of digital literacy from the UK media regulator Ofcom, the term refers not only to *access* and *understanding* of professionally produced digital content (which may be termed 'media literacy'), but crucially *also to its creation and publication* by non-professional users and consumers, for both playful and purposeful ends (Ofcom, 2005).

If digital literacy is to be propagated throughout society, an important question is whether that is done by means of formal education such as schools (supply-side learning) or by some other means, most obviously those associated with leisure entertainment (demand-side learning). Formal education is often thought of as being in embattled opposition to media entertainment. Schooling is overwhelmingly driven by a *provider* philosophy — education is what the inherited disciplinary classifications, methods and bodies of knowledge, professional teachers and command bureaucracies say it is. And since, goes the logic, students or pupils are present in the system precisely because they *lack* education and need to be supplied with it, they cannot have much say in what or how they learn. Although there is a demand side to schooling, it is generally looked for among parents, industry and government. This doesn't give much voice to or institutionalised space for the expression of demand from students themselves, beyond that which can be exercised in the live immediacy of classroom negotiations (which everybody knows can be far from civil). Significant resources are devoted to controlling the expression of demands, rather than meeting demand.

Institutionally, schooling is organised around top-down order and discipline. This extends beyond the classroom to the control of curriculum, pedagogy, assessment, the physical and discursive environment, and coercive regulations, to produce (ideally!) the orderly reproduction and progression of disciplinary knowledge itself (or, failing that, at least some control over unruly teenage bodies). In this context, entertainment is suspect, because it is too easily associated with ‘moral decline’, ‘loss of standards’, ‘postmodernism’ and ‘constructivism’, quoting conservative activist Kevin Donnelly (2006a, 2006b). Any branch of schooling that seeks to take seriously any aspect of mediated entertainment is routinely stigmatised with terms like these in the press and also among parents and policy-makers. Formal education doesn’t trust demand-led learning if those doing the demanding are teenagers or children.

The world of broadcast media, for its part, has long relied on informal means to educate audiences and users (Hartley, 1999). But for broadcasters and publishers, education is suspect if it takes precedence over entertainment values. Progressively over time, even BBC-style public-service ‘education by stealth’ has given way to populist makeover in the lifestyle and relationship genres of reality TV. Education remains part of the basic proposition of screen entertainment, but on-screen pedagogy must never take a ‘teacherly’ form. Instead, it must conform to generic, narrative character and action values associated with the appeal of the medium. One of the most important such source-codes for both film and broadcasting is *realism*, including a commitment to the kind of narrative and semiotic ‘transparency’ that erases the work of production so that viewers don’t see the productive apparatus on screen. Thus screen-media knowledge appears to arise from *story* rather than from a *method of production*, and so ‘entertainment’ has come to be associated with storytelling, in which the elaborate mechanisms required for *telling* the story are kept hidden. Hiding the productive apparatus has become part of the ethic of professional expertise in media entertainment.

It follows that if an audience member wants to *participate* in the creation of knowledge using screen and broadcast media, the general run of content won’t tell them how to do it, so learning by copying, by doing or by experimentation with the medium is not easily possible. Naturally, the industrial mode of production further distances producer and product from consumers, who no more know how the ‘dream factory’ actually operates than they know how plastic is actually made. So the ‘educational’ effort of screen media is ‘read only’. Audiences may be informed about the world, or advised about the comportment of the self, but they won’t be told how to *produce knowledge using media*. The most purposeful attempts to communicate information via popular media are via advertising and other campaigns (including religious and political persuasion) — in other words, via rhetoric rather than science. This explains the emphasis in ‘media literacy’ discourse on ‘critical’ readings of professionally produced content, and it was in this form (the form of an antidote) that media studies first entered formal schooling. Students were to be shown how to resist the rhetoric of storytelling entertainment media, not how to do it themselves.

Digital literacy

In digital media, by contrast, learning by doing is the norm, with peer-to-peer emulation and proprietary tutorials. Digital literacy starts where screen and broadcast media stop. The whole idea is for users to do the work of networking and content-creation. The worlds of telecommunications, broadcasting and text-based literacy are convergent, and they converge about the *user*. Digital literacy is generated by its *uses*, not by a body of knowledge or ‘critical’ values. It is a demand-led literacy.

Print literacy isn’t what it used to be. Now, it seems, proper books are useful only for conversion into handbags (see Figure 1). Why might you want to remove all the pages from very handsome hardbacks, leaving only the cover to tell the story? Let J.H. Kellogg answer that question. He was the man who invented the cornflake (to dampen ‘self-abuse’ urges), although he didn’t develop the cornflake company (that was his brother); he also invented peanut butter. This Kellogg was best known for public-health activism in the late nineteenth and early twentieth centuries, promoting populist reforms across the English-speaking world based on the idea of healthy living. He wrote the manual: the *Ladies’ Guide in Health and Disease* (Kellogg, 1891). He intended it as a guide *for* ladies, but it is also a guide *to* ladies, on which topic he considered himself an expert; besides being a medical doctor, he had about 40 children, many of them adopted.

In this context, Kellogg had some very firm views on literacy. This is what he had to say about reading:



Source: rebounddesigns.com.

Figure 1: *The Complete Works of William Shakespeare (hardback)* — as a handbag

The reading of works of fiction is one of the most pernicious habits to which a young lady can become devoted. When the habit is once thoroughly fixed it becomes inveterate as the use of liquor or opium. The novel devotee is as much a slave as the opium eater or the inebriate. The reading of fictitious literature destroys the taste for sober wholesome reading and imparts an unhealthy stimulus to mind, the effect of which is in the highest degree damaging. (Kellogg, 1891: 207–08)

In other words, in its day of popularity, reading occupied exactly the same niche in the cultural pecking order as YouTube does currently. And in case you think Kellogg is talking only about ‘pulp fiction’:

We have felt our cheeks burn, more than once, when we have seen young schoolgirls intently poring over the vulgar poems of Chaucer or the amorous ditties of Burns or Byron. Still worse than any of these are the low witticisms of Rabelais and Boccaccio, and yet we have not infrequently seen these volumes in the bookcases of family libraries, readily accessible to young daughters and growing sons of the family. (1891: 209)

Chaucer, Burns, Byron, Rabelais and Boccaccio — the entire European literary canon is suspect, and not just in relation to ‘ladies’ but to ‘sons’ as well. No author is exempt from this anti-masturbatory fury, not even William Shakespeare. Here is another expert of the time, Sarah Stickney Ellis, who wrote *Mothers of England* (1843). In *The Young Ladies’ Reader* she says this:

It is scarcely possible to imagine a prudent and judicious mother allowing the unrestrained and private reading of Shakespeare among her children. (Ellis, 1845: 289–90, quoted in Ziegler, 2003: 109)

Here, then, we have a modernist standoff between high literacy and popular reading, just when the popular masses and their values entered into the domain of print. The invidious distinction between school-based print literacy for cognition and science and the playful use of popular media for sensation and uncontrolled self-realisation is by no means new.

The massive social and tax-financed investment that has been devoted to universal public schooling — that is, to print literacy — over the last 150 years has never been imagined, never mind matched, in relation to either media (broadcast) literacy or digital (broadband) literacy. The *social* result of this is that multimedia literacy is growing up beyond the control (even the purview) of the education system. The *educational* result is that we’re left with the ‘provider model’ of literacy, where control and order are preferred over change and innovation, and where imagination and interpretation are reduced to individual skills and competencies rather than team-based, technologically enabled, outcome-oriented projects. Meanwhile, the active arena of digital literacy itself is literally banned from many, if not most, schools, certainly in our state (Queensland) and elsewhere in the world. Students using equipment supplied by education authorities — for example, Education Queensland (EQ) — cannot access most internet services including Google Images

or social network services such as YouTube, Facebook or MySpace because they are blocked, and they cannot use collaborative knowledge tools like the Wikipedia because it is prohibited. Students who are ‘always on’ in their own lives have to power down in the classroom — the very opposite of the rationale for setting up classrooms in the first place.

In school, ‘critical literacy’ is not imagined as learning how to navigate the networks and gain mastery of these applications. It is, instead, a kind of ‘ideology watch’: the training of students to be sceptical about forms of expression in which they may or may not be adept at home, but with which they are not allowed to experiment in school itself. ‘Multi-literacy’, meanwhile, is a term that seems to have been captured by the ‘skills and competencies’ folk, where it is reduced to instruction on how to use Microsoft software. For instance, in the European Union there’s a scheme called the Digital Driving Licence, which certifies the ability to use MS Excel, Word, Office and the like. In both cases, EQ and EU, there is a provider-led, top-down, control model of post-print literacy education in schools. Excellence in productive projects or imaginative creativity is an accident of good teachers, often working in non-prestige study areas like media and FTV — almost a failure in the system itself.

A demand-led model of education

The alternative is this: instead of proposing yet another supply-side or provider-led model, we need a demand-led model of digital literacy.

Creativity has always been a driver of the economy, but until recently economically useful creativity was concentrated among professional experts (including artists, designers and inventors). However, since the rise of Web 2.0, innovation is increasingly dependent on socially networked ‘collective intelligence’ and user-led or consumer-created content. The creative economy needs ‘creative human capital’ (Florida, 2002; Cunningham, 2006) — the creative capabilities of the general population in a digitally enhanced, globally networked market of imaginative sense-making. In light of these developments, the development of human capital is as important to the creative economy as was the development of capitalism itself to the industrial one. Users are finding non-entertainment purposes for their own multimedia literacy. Digital media like games or social networks may have their origins in the entertainment of teenager, but unforeseen consequences are rapidly evolving. The generative edge of emergent ‘uses of literacy’ in the networked digital era includes uses of entertainment, leisure or consumer services. We have entered the era of ‘consumer productivity’, or even ‘consumer entrepreneurship’, where the agency of individual and multiple-network consumers is a major driver of the productivity of the entire system — a system in which economic and cultural or symbolic values are integrated and co-evolving. Therefore, digitally literate consumer-producers with the motivation and understanding to navigate new media are needed for further innovation.

Education systems are not geared up to produce them. We have inherited a supply-side, provider-obsessed control education culture; it needs to change if it

is to fulfil the original purpose of universal education, namely the emancipation of all classes into that intellectual freedom from which all work of the imagination is born. A new model of education is needed, not just for digital purposes and also not just in schools. The model of education must shift from past-oriented provider/control model to a future-oriented navigator model, where learning is distributed (networked), just-in-time and individually purposed, and where ‘consumer-producers’ are attracted to the creation and growth of knowledge rather than compelled to conform to ‘legacy systems’.

Karl Popper, the great realist philosopher, had an educational philosophy:

Do no harm and give the young what they most urgently need in order to become independent of us, and to be able to choose for themselves. This would be a very worthy aim for our educational system, and one whose realization is somewhat remote even though it sounds modest. Instead, so-called higher aims are the fashion, aims which are typically romantic and indeed nonsensical, such as the full development of the personality. (Popper, 1945)

Can we come up with an educational model that is demand-led, that does no harm, and that promotes independence — economic and intellectual? A model of education for such uses may not be school-based; it shifts from provider to navigator and from the elite expert to the complex open innovation system. The remainder of this article describes several initiatives designed to explore how that might work, or is working in practice.

Case study 1: Procedural knowledge and digital literacy — digital storytelling

Digital storytelling is a practice in which ‘ordinary’ people are taught, in small workshops hosted by organisations, to use digital tools to create short, usually autobiographical videos or ‘digital stories’ (Hartley and McWilliam, 2009). Developed in the early 1990s in California, digital storytelling emerged a decade before the early 2000 launches of MySpace and Facebook, to name the best known of the current social networking sites. Consequently, digital storytelling represents one of the earliest significant amalgamations of expert- and user-led creativity in the digital media environment. In many respects, then, digital storytelling is a useful starting point from which to launch our three case studies.

While digital storytelling did not emerge from formal education, despite being popularly embedded there now — particularly in North America (on which see McWilliam, 2009) — it is nevertheless organised around adult or community education models: it is taught in workshops, or informal classes, in which an expert teaches the inexperienced (or less expert) how to create their own media text. The mode of teaching, however, is actively participatory. Participants are guided and consulted, rather than lectured in any strictly institutionalised fashion. This is unlike both formal schooling on the one hand and, on the other, the more self- and peer-directed models of our second and third case studies, Flickr (the online

photo-sharing and community platform) and *Fury* (a massively multiplayer online game or MMOG). In other words, digital storytelling represents something of a middle ground between formal schooling and its top-down organisation around the elite expert — the model away from which this article is advocating a shift — and the open innovation systems of our remaining case studies and their bottom-up organisation around user demand. Instead, digital storytelling typically draws on a ‘top-down participation’ hybrid, where workshops are participatory, but where experts nonetheless facilitate that participation. (For further discussion of ‘top-down participation’, see Tacchi, 2009 and Tacchi et al., 2009.)

There are at least two reasons why digital storytelling has developed in the middle ground between expert- and user-led models of communication. The first reason is that digital storytelling emerged much earlier than either Flickr or *Fury* (the first digital storytelling workshops were held in 1993, more than a decade before the 2004 and 2007 launches of Flickr and *Fury*), thus preceding much of the contemporary development towards open innovation systems. The second reason is that digital storytelling is considerably more institution dependent than the other examples. This institutional dependence is manifest in two different ways:

1. Logistically, digital storytelling relies on an institution’s provision of physical space to house the workshops around which it is traditionally organised, equipment for its participants to use and teachers to conduct the workshops.
2. Ideologically, digital storytelling’s reliance on the workshop model suggests a further dependence on the “modernist space of enclosure” that is the school (and, more specifically, the classroom) — including its attendant (expert-led) distribution of knowledge (Lankshear, 2002).¹

These restrictions limit the user- or demand-led innovation possible within traditional digital storytelling practices. But these limitations are also partly discursive. Discourses surrounding digital storytelling often characterise the practice in deeply restrictive ways. One of the most common constructions of digital storytelling is as a finite learning process, with the highest order of literacy being the technical ability to create a media product. For instance, the Australian Centre for the Moving Image (ACMI), the most influential site of digital storytelling in Australia — it promotes itself as the ‘national centre for Digital Storytelling’ (2006, n.p.) — frames digital storytelling as a learning process that ends rather than begins with the production of a digital story. To demonstrate, ACMI’s mainstay digital storytelling programs are part of its ‘production workshops’, emphasising the production of a text over any larger distribution of the text or participant learning process. Here, digital storytelling becomes a pedagogy of propositional knowledge; it is the result of an expert’s instruction of skills and information, demonstrated by the measurable outcome of a complete digital story.

But does this limited discursive construction properly reflect digital storytelling’s potential? Digital storytelling might, for example, be more productively understood as an informal pedagogy of procedural rather than propositional knowledge. The latter is the acquisition of closed theoretical knowledge, like learning accepted facts and figures and completing finite tasks. Procedural knowledge, however, is

the acquisition of an open-ended and user-led approach to knowledge. As Rebecca Black offers, procedural knowledge teaches participants ‘how to learn and continue learning ... via networks, distributed funds of knowledge, and computers’; it promotes independent, lifelong, media rich, social and context-specific learning (Black, 2007: 133). It is, in other words, based on some of the key competencies we associate with digital literacy.

Might reframing digital storytelling discourse in this fashion allow us to reinvigorate debates around the potential of digital storytelling practice? Could digital storytelling function as an informal pedagogy of digital literacy? And how might this contribute to the development a demand-led model of education? Certainly, reframing digital storytelling in this way shifts it closer towards Popper’s educational philosophy: it does no harm, is more responsive to user demand, and it creates independent participants better equipped to choose, and learn, for themselves in the digital age.

Case study 2: Vernacular creativity and digital literacy — the Flickr photosharing network

Flickr began life as a way for participants in a game to share photos with each other in a chat room. Since then it has evolved into a complex system for storing, sharing and interacting around (mostly photographic) images, and it has become a poster-child for Web 2.0 and user-led content creation (Quittner, 2006). Along with YouTube and DeviantArt, Flickr is a platform for vernacular creativity — everyday creative practices like photography, home movies and storytelling that are being remediated via digital technologies to contribute to the networked public sphere (Burgess, 2006).

Flickr is useful for thinking through what might make up digital literacy because it allows us to observe the way that, as for most previous new media technologies, at the moment of mass popularisation the conventions and norms for use are established in informal learning contexts long before they are reincorporated and instrumentalised by formal institutions like schools. Indeed, participation in Flickr is a form of play. The foundational theories of play frame it as an alternative to ordinary reality, and as unproductive of value outside the universe of the game (Stephenson, 1967; Caillois, 1961; Huizinga, 1950). These ideas have been thrown into question by the lived reality of participation in computer games as well as networks of user-created content (San Cornelio et al., 2007; Pearce, 2006; Kücklich, 2004), and likewise, participation in spaces like Flickr can be intuitively understood as being both playful *and* productive.

Metaphorically, Flickr can be understood as a massively multiplayer online game environment. It is built on an open architecture that affords free play with certain constraints, and the conventions of practice that are emerging within the network are shaped by the users — not determined by the architecture or ‘taught’ by the providing institution. As in games, there are opportunities for exploration and experimentation, challenge and reward — even to score points and ‘level up’. There is a wide range of possible modes of participation: from peripheral or casual

‘production’ and ‘consumption’ to more intensive and dynamic combinations of the two. We can see how this plays out in the way that Flickr groups work. There are thousands of user-created groups organised around specific themes. Individual users can become group members, upload their images to a group ‘photo pool’ and participate in discussions around the theme of the group — themes range from place (cities, regions, or even particular clubs or streets) to technology (cameras, computers, films) to aesthetics and technique (black and white processing, the perfect portrait, Photoshop tips and tricks), and even explicit games and quests (the Flickr treasure hunt, photo dominoes).

The most dynamic and intensive modes of engagement in Flickr are structured by a convergence of social networking and creative practice. It is this convergence of social networking and creative practice that produces Flickr’s value for the users, the company and the public. This convergence is also used by Flickr to produce what it calls ‘interestingness’ — a measure of ‘value’ that is produced algorithmically via the collective rating, favouriting and conversational practices of the entire population of users. The result is a quality filter that provides public access to the images most rich in popular meaning — evaluation without expert judgment.

However, most users do not engage with Flickr to anything like the extent described above. Most internet users participate very casually and peripherally in the social networking aspects of Flickr, or simply reap the benefits by enjoying or repurposing the images — the active, critical, creative participant is a minority (Cox, 2007). The ‘participation gap’ (Jenkins, 2006) is represented by patterns in the evolution of social networks which show that, across a range of online social networks, the majority of users are relatively casual, or ‘passive’, participants, while a small but stable core group is intensively active and interconnected (Kumar et al., 2006). Yahoo!’s Bradley Horowitz refers to this pattern colloquially as the ‘pyramid of participation’ (Horowitz, 2006). Further, some of these very active participants in Flickr spoke extensively in interviews about how they had learned or were learning photography, but were unable to articulate how they had learned to participate effectively in online social networks — they had been doing it for so long that it had become second nature (Burgess, 2006). That is, the necessary competencies of network literacy form part of the *habitus* of the most active users — a group of people not necessarily rich in traditional educational or cultural capital, and not necessarily young, but for whatever reason oriented towards tinkering, experimentation, self-education and play.

Is this ‘participation gap’ a problem? Or does a small number of intensely active users actually result in better quality overall? We suggest that more means *better*. Assuming an effective and sophisticated means of aggregating the collective activities of users, the principles of collective intelligence and network effects suggest that the extension of these forms of digital literacy to broader populations should result in better and more culturally diverse images in the ‘interestingness’ pages. If it is true that broadening access to the cultural and technical competencies necessary to participate should be a priority, and yet these very competencies appear to be acquired informally and ‘voluntarily’, then one question is whether

the competencies that make up digital literacy as we understand it can or should be ‘taught’ in any traditional sense.

Case study 3: The navigating gamer — *Fury*

Fury (www.unleashthefury.com) is a competitive, player-versus-player (PvP), massively multiplayer online game (MMOG) released in October 2007. Throughout that year, Banks undertook ethnographic research, in partnership with Auran Games (situated in Brisbane, Australia), to follow the final stages of *Fury*’s development. He explored the relationships between Auran’s professional developers and a network of game players and testers, who provided Auran with extensive feedback and design input. The research both described and participated in the negotiation and making of emergent co-creator relations. Banks followed and informed Auran’s online community management and social networking strategies for *Fury*.

While contributing considerable value to firms such as Auran, these co-creation relations also uncomfortably unsettle and disrupt a closed industrial model of expertise in favour of an open innovation system. User co-creation works as a dynamic wrecker of industrial-era modes of production and associated business practices. Auran’s efforts to involve and integrate gamers throughout the development process recognise that the commercial success of *Fury* relies on social network market dynamics and transactions. Will players and beta-testers recommend the game to their fellow gamers? Will they comment favourably about their beta-test play of *Fury* on gamer fan websites? Will they post screenshots to their blogs and upload video clips of their *Fury* play sessions to YouTube? Will they endorse *Fury* to fellow guild and clan members?

The Auran ‘community relations’ team became quite excited when a screenshot circulated through the online networks of competitive PvP guilds showing a high-profile guild play-testing *Fury*. The notable point here isn’t that the screenshot portrays the graphical splendour of *Fury*. The screenshot is significant because it identifies members of a high-profile guild as supporting *Fury*. If they were playing *Fury*, then this may attract the attention and eventually dollars of other guilds. Here we see the social network market in operation. But isn’t this just word-of-mouth online viral marketing? And what has this got to do with digital literacy? The value of the screenshot, for Auran, draws on the credibility and status of those seen posing their avatars in the shot — many other gamers recognise their skills and abilities as gamers. They are expert players with knowledge and understanding of video game design and aesthetics — they know a good game when they play one and can often carefully break down and articulate what makes for a quality game play experience. They possess a carefully honed game literacy. Other gamers rely on their opinions when making purchase decisions. In the context of this economics of attention, Richard Lanham (2006) suggests that gamers are the ‘acute and swift economists of attention’ (2006: 17).

In the months prior to the October 2007 commercial launch of *Fury*, many of the expert gamers play-tested it for hundreds of hours, providing the Auran development team with robust and critical feedback. The testers weren’t just

hunting for minor bugs; they identified weak game features that needed updating and fixing. They forcefully and persuasively lobbied the professional developers for these changes, posting extensive comments to the *Fury* forum and through direct emails. In response to this feedback, the developers made significant changes and updates. Even over the final few weeks in early October before retail launch, Auran announced further modifications to core design features based on consistent requests from these expert gamers. Many of these changes were made available for download after the commercial release, and this co-creative exchange between the gamers and the developers continued to shape and remake *Fury*'s design.

Clearly, this is not a top-down industry objectifying its consumer. Here we have an emergent, and as such still uncertain and often messy, 'market in which the consumer is an agent, able to make a deal' (Hartley, 2008). Transactions or exchanges play out here — the participation of the gamer consumers endorsing *Fury* through their fan social networks requires Auran in turn to recognise the status and contribution of their knowledge in the context of a co-creative relationship for mutual benefit. There are also literacies evident here as gamers navigate, negotiate and at moments also contest this emergent social network market relationship. But recognising the literacy constituted and exercised through these exchanges requires us to take seriously the agency of this 'critical-creative citizen-consumer'.

This attention-seeking and often competitive action can perhaps also be characterised as a type of Schumpeterian 'consumer entrepreneurialism', particularly because it is both creative and destructive. It creates knowledge, but this distributed network of professional and non-professional expertise also disrupts industrial-era modes of controlling and organising cultural production. This entrepreneurialism, as an emergent market, introduces growth, dynamism and change. A focus on this agency as a form of digital literacy exercised by creative consumer-citizens requires us to grapple with processes of the origination, adoption and retention of knowledge. As such, it involves evolutionary dynamics of change and the emergence of order in complex systems.

The entrepreneurial character and value of this literacy is evident in the position of Auran's professional community relations managers working on the *Fury* project or, more precisely, in how they navigated social-network markets to gain these positions. One of them, Alex Weekes, started out developing and displaying his skills and competencies as an online social network navigator (or community manager) through participation in the competitive guild-based PvP fan community forming around ArenaNet's MMOG *Guild Wars* series (published by NCsoft). Collaborating with a fellow gamer, Alex built and maintained a successful *Guild Wars* fan site that attracted significant user traffic. A company eventually bought out their interest in the site. In interviews, Alex stressed that at no point in the process of establishing the site did he envisage that it would become a business opportunity, or for that matter a job. The commercial outcome was 'something of a surprise really. We didn't foresee that at all.' (Banks, 2007) Here, enterprise opportunity emerges from passionate fandom. Alex's display of his skills as a community manager running the fan site then attracted the interest of ArenaNet; he eventually secured a job with them in the United Kingdom as

a community relations manager. Auran recruited Alex in mid-2007 to work on the *Fury* project. Similarly, Dan Gray (*Fury* community relations support) was an active and talented member of a high-profile *GuildWars* PvP clan based in the United Kingdom. He also attracted Auran's attention through his ability as a forum moderator for one of the more successful PvP MMOG fan sites. Auran's recruitment of both Alex and Dan recognises and rewards the value of their digital literacy and their competence as talented navigators of social network market relations.

Conclusion

Each of our case studies has explored a site or practice of digital media from which digital literacy might be, or is already being, propagated. From a reconsideration of the potential of digital storytelling as an informal pedagogy of digital literacy, to the playful and productive digital literacy of Flickr users, to the emergence of an entrepreneurial literacy to 'navigate' social network market relations in *Fury*, each case study moves beyond the 'inoculatory' approach of classic media literacy education to explore digital literacy in the demand-led environment of community media and leisure entertainment. In each environment, participants learn by doing — often through a collaborative learning network of peers. But if digital literacy really is, as we claim, demand led and generated by its uses rather than by a fixed body of expert knowledge, then the extent to which it *works* and how it *develops* as it is used in the different contexts of community media, online networks and commercial game development remains to be seen.

Note

- 1 In fact, digital storytelling's traditional organisation around workshops is widely regarded as the most restrictive aspect of the practice, and its most significant obstacle to wider propagation and sustainability (see McWilliam, 2008).

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John Hartley is a Distinguished Professor, ARC Federation Fellow and Research Director at the ARC Centre of Excellence for Creative Industries and Innovation, QUT. He's among the pioneers of media and cultural studies and has authored and co-authored over a dozen books in these areas including, most recently, *Television Truths* (Blackwell, 2008). He is the editor of the *International Journal of Cultural Studies*.

Kelly McWilliam is an ARC Postdoctoral Research Fellow (Industry) in the Creative Industries Faculty at Queensland University of Technology. She is currently part of teams that hold two ARC Linkage Projects: the first investigates romance and romantic comedy genres in digital media; the second examines participatory digital media as a positive contributor to youth mental health. She is the co-editor, with John Hartley, of *Story Circle: Digital Storytelling Around the World* (Blackwell, 2009); the co-author, with Jane Stadler, of *Screen Media: Analysing Film and Television* (Allen & Unwin, 2009); and the author of *When Carrie Met Sally: Lesbian Romantic Comedies* (2008). She is also the Secretary of the Cultural Studies Association of Australasia.

Jean Burgess is a Postdoctoral Research Fellow in the ARC Centre of Excellence for Creative Industries and Innovation, Queensland University of Technology. She works on cultural participation and user-led innovation in new media contexts, focusing particularly on digital photography, online video and applications of digital storytelling. With Joshua Green, she is the author of *YouTube: Online Video and the Politics of Participatory Culture* (Polity Press, 2008).

John Banks is a Postdoctoral Research Fellow in the ARC Centre of Excellence for Creative Industries and Innovation at Queensland University of Technology. His current research interests focus on the emerging relations between media corporations, educational and cultural institutions, and user-led innovation and consumer co-creation in participatory culture networks. He has a particular interest in the video games industry.