

Literature Review 10: Digital Literacy

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'Digital Literacy is about mastering ideas, not keystrokes' (Glister 1997)

'The thing about digital literacy is its inherent squishiness. Educators argue whether the tool or the purpose matters most. They debate whether something being "electronic" constitutes "digital." Does it need a screen? A keyboard? More than that, teachers must decide what it means to read and write digitally and how to assess those skills. Just as teachers were working to conclusively define literacy, digital literacy arrived on the scene and the discussion started again' (Chase and Laufenberg 2011)

Defining Digital Literacy

Paul Glister coined the term Digital Literacy in the late 1990s, arguing that Digital Literacy (DL) should be considered as something different from technological competencies. Rather, he suggested, it is about the degree to which individuals are able to use Information and Communication Technologies (ICT) for critical engagement with ideas and concepts. DL was, in Glister's view, about mastering the web for 'productive' purpose – as a research tool – and moving beyond 'surfing' and entertainment.

Since Glister's coinage however, internet-based technologies have developed and diversified dramatically, along with their levels of use and embeddedness in society; not least in both formal and informal educational settings. Society itself has become 'digitally mediated' to a far greater extent. In particular, the rapid growth of Web 2.0 and social networking has, arguably, 'changed the skills required from being about discerning consumption of content, to being about a person's whole digital footprint' (Englebright 2011 pg.1).¹

DL is now a growth area of educational research, with nearly 150,000 results returned for the term on Google Scholar as of September 2010 (Beetham 2010). It has also become a key concept within policy and political rhetoric, where its acquisition is seen as a 'great enabler' of (amongst other things) social mobility, raising educational attainment, and equipping the workforce with skills required for economic productivity. The UK coalition government's strategy on DL is encompassed by their appointment of Martha Lane Fox (co-founder of Lastminute.com) as 'Digital Champion' and the

¹ Web 2.0 is a contested term, but refers to the idea that the internet and its use has diversified from Web 1.0, when it was primarily PC browser-based platform, onto a range of technological platforms (including mobile ones) and is being put to, generally, more participatory and deeply socially embedded uses such as social networking, blogs, podcasts eg. (O'Reilly 2005). It also sometimes used to refer to the accelerated convergence of the internet with other media such as television, radio, and print media.

publication in July 2010 of a *Manifesto for a Networked Nation*.² The key aim of this policy, now rebranded as *Race Online 2012*, is to get 90% (9 million) of the UK population who have never used the internet online by 2012, and the entire working population by 2015. This responds to the research finding that 90% of all new jobs require at least basic internet skills (Lane Fox 2010). Speaking at the launch of that publication, secretary of state for work and pensions Sir Ian Duncan Smith said that:

'Digital literacy is a great enabler of social mobility. It is a way for those who have had bad experiences of institutions to re-engage with learning, and it can break down feelings of isolation. It is a powerful weapon in the fight against poverty' (cited in Beetham 2010, pg. 4)

There are, however, considerable debates within the literature as to the precise definition of DL, the dimensions of its uneven spread within the population and, thus, what the interventional focus should be in terms of both policy and practice.

Some authors have argued that familiarity with Web 2.0 technologies 'opens up a completely new space for and style of learning, focusing on: collaborative knowledge building; shared assets; breakdown of distinction between knowledge and communication' (Bacigalupo 2008, cited in Beetham 2010 pg.8). Others have suggested that such participative applications of DL might be usefully substituted for formal study (Jenkins 2006, cited *ibid*).

However there is also a wealth of literature arguing against this view, in particular showing that DL has yet to be properly investigated and defined, needs to be integrated into existing formal and informal curricula, and that the current generation of learners are not as digitally literate as either they or their educators often presume (Hargittai 2005, 2010; Brumberger 2011; Chase and Laufenberg 2011; Walsh 2010; Stripling 2010)

Beetham (2010) follows most recent European Union policy, proposing that the most neutral definition of DL possible is that:

'Digital literacy defines those capabilities which fit an individual for living, learning, and working in a digital society' (pg.1)

Clearly, then, interventions intended to raise DL should be seen as fundamentally intertwined with broader projects to address socio-economic and, in particular, educational disadvantage (or 'the skills gap') – as well as the uneven spread of ownership and access to ICTs themselves.

² http://raceonline2012.org/sites/default/files/resources/manifesto_for_a_networked_nation_-_race_online_2012.pdf

This paper is intended to inform the development phase of Brathay's planned DL project, the Digital Me Programme. It reviews some of the key literature, necessarily partially, on ICTs, young people, and exclusion and summarises some current debates and recent studies in the educational literature on DL. Finally, it highlights some recent examples of experimental interventions, and signposts some further specific resources, encountered during the literature search which may support the integration of DL into formal and informal learning curricula.

ICT, Exclusion, and Young People

The uneven spread of ownership and/or access to computers and the internet remains a key policy focus, globally, but was at its peak from the late 1990s to early 2000s. The main rhetorical concept during that period was 'The Digital Divide', which originated in the USA during the Clinton administration, but spread worldwide including a significant impact on the UK, Europe, and international development policy.³ This is perhaps best exemplified by then-UN General Secretary Kofi Annan's statements in 2002 and 2003 that:

'A 'digital divide' threatens to exacerbate already-wide gaps between rich and poor, within and among countries. The stakes are high indeed. Timely access to news and information can promote trade, education, employment, health and wealth... Information and knowledge are also at the heart of efforts to strengthen tolerance, mutual understanding, and respect for diversity'

'Bridging the digital divide...is a formidable task that requires not only leadership, but also a major commitment of resources... ICT is not, of course, a magic formula that is going to solve all the problems. But it is a powerful tool for economic growth and poverty eradication...With low-cost technologies and business models that are now being explored, we should aim to provide cheap, fast, and eventually free access to the internet' (Annan 2002, 2003)

There were, however, always dissenting voices who argued that 'access is not the only problem': that digital inequalities encompassed and were encompassed by a far more complex picture of intersecting exclusions, including not only skills but also social capital (eg. Thomas and Wyatt 2000).

³ The Digital Divide can be summarised as the idea that a new, exclusionary gap was emerging between digital 'haves and have nots', defined by ownership and/or access to an internet-connected PC. This was said to impact on the ability of individuals and groups who fell on the wrong side of this line to access not only new skills and employment opportunities, but also a host of tools and resources required to participate fully in a rapidly digitising society on global, national, regional, and local levels.

Nearly a decade on there has, according to Parsons and Hick, emerged 'a consensus amongst academics, non-profit groups, and advocates for the poor that digital exclusion...is further marginalising already oppressed and disenfranchised individuals and communities' (2008, pg. 12). In other words, that digital inequality exacerbates pre-existing social inequalities.

The concept of the 'digital divide', however, has fallen silently from grace – in policy as well as academic research – and several authors have called for its replacement with a concept such as 'digital inclusion' (ibid; Livingstone *et al* 2005). This, it is suggested, achieves a shift in the conception of the location of the inequality to encompass skills and social capital, as well as an acknowledgement that at issue are not hard and fast divisions between 'haves and have-nots' (or users and non-users/ the skilled and unskilled), but one of continuums and shades of grey.

This, it is shown by Livingstone *et al*, is particularly the case for children and young people (C&YP), amongst whom – in the UK – there are huge variations in access, attitudes, skills, levels and types of use (ibid). C&YP tended to be either left out completely from earlier 'digital divide' debates, or assumed to be on the right side of the divide by default (relative to 'luddite' adults). In the UK they have been seen to be 'remixing' their own citizenship: engaged in a range of internet based activities that are redefining political and civic participation (Coleman 2005).

However, as the findings of Livingstone *et al*'s very thorough and insightful report on the results of a major survey of UK 9-19 year olds' use and attitudes to ICTs show, these are not accurate, generalisable assumptions (2005). Within the 9-19 year old UK population there are significant inequalities of access, skills, use, and attitudes towards ICT. Differentiation is based mainly on: age; socio-economic status; region; and gender. It was found that there was almost no digital inequality based on ethnicity. Furthermore, the report argues, it is misleading to refer to C&YP as one group, either analytically or in general comparison to the adult population, since there are major differences based on age. Therefore, the study breaks findings down into four analytically significant categories: 9-11 year olds; 12-15s; 16-17s; 18-19s.

Some key findings from this study (the UK Children Go Online project) that are most relevant to Brathay's planned programme are presented below:

- Almost all (98%) C&YP have some online experience. Therefore concentrating efforts on those who are 'completely excluded' means an extremely small target population, in practice.

- The middle two age groups (12-17 year olds) use the internet most, but also have the highest variation of type and frequency of access. They are therefore a highly relevant group to focus on.
- There are considerable differences in access and use by region across the UK. The 'least connected' region is 'the North' - although no specific information is given about Cumbria.
- The socio-economic status of young people's families is the most significant factor affecting home access, influencing: the number of access points at home; whether access is available in the bedroom; the speed and type of access (eg broadband or dial-up).
- Young people from middle class families (A,B) spend more time online, report higher skills and self-efficacy, take up a more diverse range of online opportunities, and are more likely to take up civic opportunities.
- Boys and girls use the internet a similar amount, but with differences of emphasis. Boys are slightly more likely to take up peer-to-peer opportunities (such as email, webchat, social networking), whereas girls are much more likely than boys to take up civic opportunities (such as visiting civic/ political sites and signing petitions online).⁴
- Parents are a key enabler to young people's internet use, and parents are more likely to be internet users themselves than other adults in otherwise comparable demographic brackets.
- Young people who rely on schools as their main source of access are limited in the amount and range of opportunities taken up. This is at least partly because of the lack of time and freedom given by schools. It is therefore recommended that the extent to which schools [and parents] restrict internet use for safety [or other] reasons, must be balanced against the opportunities thereby reduced.
- There are no differences for time spent reading, or interacting with family, according to internet use.

⁴ It is important to note that some of these findings, from a survey conducted in 2004/5, may well be out of date given the prevalence of social networking since then.

The key contemporary argument then, from various quarters, is that more efforts are needed from a policy, practice, and research perspective to understand the dimensions of these continuums of inequality, and to address them. As Parsons and Hick frame it, the current necessity – especially where C&YP are concerned, who almost universally have internet access in some or other form – is for a move away from ‘clicks and mortar’ solutions (technological infrastructure and access drives) to ‘knowledge and opportunity’ solutions, of which interventions to raise DL are clearly a crucial component (2008, pg. 13).

Debates and Studies in Digital Literacy

As discussed above, DL is a huge and ever-expanding area of educational research. As such, the following review of key debates and studies is necessarily partial, and focuses on issues pertaining to C&YP.

Hargittai notes that much attention has focused on ‘how online behavior differs across different segments of the population’, but that:

‘Most of the existing literature is based on people’s perceptions of their computer skills, often referred to as self-efficacy, instead of actual abilities measured through observations or survey items that measure user’s actual knowledge of computer and internet-related terms and functions’ (2005, pg. 371).

This has clear implications for C&YP who, a number of studies have revealed, tend to both over-estimate their own levels of DL and/or have them over-estimated by educators (Livingstone *et al* 2005; Beetham 2010; Brumberger 2011; Hargittai 2010).

Considerable attention has been paid to the idea of C&YP as ‘digital natives’ who, according to an initially dominant and frequently expressed populist view, outstrip the older generation in their competence in using ICTs for both creative, communicative, and information gathering purposes. It has even been suggested that today’s children are so accustomed to digital technologies that they think of them as part of the natural landscape (Tapscott 2009). An area of key competencies which today’s C&YP are often purported to possess in abundance due to their ICT use is visual literacy. As Brumberger, who does not subscribe to the thesis, points out, there many published educationalists who consider current ‘millennial learners’ (or ‘the Net Gen’) to be ‘visual learners’ with ‘enhanced abilities in image reading and interpretation, mental mapping, mental paper folding, and so forth’ (Brumberger 2011, pg.20). This has led to some sweeping generalisations, such as that these students are all “intuitive visual communicators” who are “able to weave together images, text, and sound in a natural way” and “are fluent in personal expression using images” (ibid).

Recent studies have attempted to clarify such bold assumptions by investigating them empirically (ibid; Eshet-Alkalai and Chajut 2010; Hargittai 2010).

Eshet-Alkalai and Chajut tested the same group of 60 participants' DL over a 5 year gap. All were advanced computer users, and broken into different age groups. The categories of testing followed Eshet-Alkalai and Chajut's earlier conceptual model of DL: the six different skills types demanded in contemporary digital environments (2002). This model is worth outlining here as it is well cited and has gained considerable acceptance:

- **'Photo-visual literacy skill:** Modern graphic-based digital environments require scholars to employ cognitive skills of "using vision to think". This unique form of digital thinking skill helps users to intuitively "read" and understand instructions and messages that are presented in a visual-graphical form, as in user interfaces and in children's computer games.
- **Reproduction literacy skill:** Modern digital technologies provide users with opportunities to create visual art and written works by reproducing and manipulating text, visuals, and audio pieces. This requires the utilisation of a digital reproduction thinking skill, defined as the ability to create new meanings or new interpretations by combining preexisting, independent shreds of digital information as text, graphic, and sound.
- **Branching literacy skill:** In hypermedia environments, users navigate in a branching, non-linear way through knowledge domains. This form of navigation confronts them with problems that involve the need to construct knowledge from independent sources of information that were accessed in a non-orderly and non-linear way..
- **Information literacy skill:** Today, with the exponential growth in available information, consumers' ability to assess information by sorting out subjective, biased, or even false information has become a key issue in training people to become smart information consumers. The ability of information consumers to make educated assessments of information requires the utilization of a special kind of digital thinking skill, termed "information skill"
- **Socio-emotional literacy skill:** Users of collaborative digital environments, such as knowledge communities, discussion groups, and chat rooms, are required to employ sociological and emotional skills in order to perform effectively in the mass communication of the cyberspace. This new kind of digital thinking skill is termed "socio-emotional"

- **Real-time thinking skill:** Present-day multimedia environments, such as simulations and games, require that users process simultaneously large volumes of stimuli that “bombard” their cognition repeatedly. The ability of users to perform effectively in these environments is termed “real-time thinking”

(ibid, pg.174)

The results of these authors’ five year comparison were as follows. In the first study, they found that the younger participants (high-school and college age), indeed had much better abilities in tasks that demanded photovisual literacy skills and branching literary skills. The adults, however, performed better in tasks that emphasised creativity and critical thinking (reproduction and information tasks). In the second study, the same sample was tested with similar tasks. While the adults, now in their 30s and 40s, had caught up significantly in their deficiencies in photovisual and branching skills, the young people (some of whom now in their mid-20s) had fallen behind further on reproduction and information tasks.

In other words, ‘two major patterns of change over time emerged:

- (1) A closing of the gap between younger and older participants in tasks that emphasise experience and technical control (photo-visual and branching tasks);
- (2) A widening of the gap between younger and older participants in tasks that emphasise creativity and critical thinking (reproduction and information tasks)’

(ibid, pg.173)

The conclusion drawn from this is that ‘experience with technology, and not age-dependent cognitive development, accounts for the observed life-long changes in digital literacy skills’ (ibid). The current generation of C&YP does not possess significantly superior cognitive abilities more suitable to digital literacy, they simply (at the time of the first study) had more experience of digital environments which, five years on, the adults had significantly caught up on. That the adults in the first study outperformed C&YP in creativity and critical thinking tasks, and had then outstripped them further in the later study, suggests a clear need to focus attention for C&YP on these areas of DL.

It is notable that the participants of Eshet-Alkalai and Chajut’s study were all already advanced computer users. Two other recent studies from the USA (Hargittai 2010; Brumberger 2010) have focused on more representative samples of college age (18-21) students. These two studies involved testing their abilities in photo-visual based DL tasks (those that Eshet-Alkalai and Chajut’s young people were most adept at, and that

the 'digital natives' thesis purports C&YP are particularly talented at). The findings of these studies show that, in general, the students were not particularly skilled in these areas, excepting small groups of highly advanced users. In addition, they were far less skilled than self-efficacy surveys had suggested.

These findings support the debates highlighted in a British higher education context, noted by Beetham, that 'creative web 2.0 users are still in the minority of learners and that learner's ICT skills are less advanced than educators and learners think' (2010, pg.7). For Beetham, writing from the perspective of a scoping exercise to support UK colleges and universities in the innovative use of digital technologies:

'[The] characterisation of young people as 'digital natives' hides many contradictions in their experiences, and learner's engagement with digital media is complex and differentiated. Active knowledge building and sharing, eg. writing wikis, tagging, reviewing, recommending, repurposing, remain minority activities to which most learners are introduced by educators....There is still a need, then, for institutions to help learners bridge the gap between their informal knowledge practices and the demands of study' (ibid, pg.8)

In addition to the findings of Livingstone *et al* (2005) presented above about C&YP's digital inequality, Beetham's review presents some insight into higher-education students' differential skill and use levels:

'Some learners positively choose not to engage with technology enhanced learning where they have a choice, either because they are generally adverse to this approach, or because they have had more positive experiences of face-to-face learning and are not persuaded of the case for change' (2010, pg.8)

A final key study is presented here, this time from a British context, is one conducted by the National Literacy Trust examining the relationship between young people's writing and digital media (Clark and Dugdale 2008). Key findings, summarised in Beetham (2010), are that:

- Technology based formats are now the most frequently written texts, for instance text messages having replaced hand written notes.
- 56% of young people had a profile on a social networking site; 24% had a blog. Bloggers were much more likely than non-bloggers to enjoy writing in general, to be more prolific writers, to be more positive about computer use, and to view writers more favourably.
- Most young people said they used computers regularly and believed that computers are beneficial to their writing. Nearly 60% believed that computers

allow them to be more creative [writers], concentrate more, and encourage them to write more often

Examples of Experimental Practice and Further Resources

Two examples of recent experimental practice aimed at raising DL amongst secondary school pupils are briefly reviewed, before further resources encountered in the literature search are signposted.

Web-based Collaborative Inquiry Learning

Jun and Pow set up a series WCIL activities for 14-15 year olds to complete in an extra-curricula high school context in Hong Kong (2011). Students were divided into groups of six, and had to choose a topic of inquiry that they were all interested in, organise themselves over the course of eight afterschool sessions to research the topic, and record the results on: a weblog; an inquiry report; interim and final presentations. The structure of the programme can be seen below:

Lesson1

Preparation

1. Groups are formed
2. Google accounts and group weblogs are set up
3. Teacher gives a general introduction to the WCIL project

Lesson2

Information accessing

1. Teacher discusses information searching skills using search engines
2. Teacher outlines copyright and requirements for information use
3. Teacher introduces Creative Commons rules, features and usages

Lesson3

Introduction to inquiry learning projects

1. Teacher introduces the principles of choosing a topic (development of an inquiry topic)
2. Teacher analyzes the typical process of an inquiry learning project
3. Teacher lists the tasks that students need to accomplish
4. Teacher outlines the criteria of a good inquiry learning project

Lesson4

Proposed topic presentation

1. Students present their proposed inquiry topic collaboratively
2. Students and the teacher comment on topics, and give suggestions to each group
3. Students work collaboratively to generate inquiry questions and choose an inquiry method, and write an inquiry learning plan that includes the topic and background information, purpose of the inquiry, proposed inquiry questions (inquiry

focus questions), time schedule and inquiry methods, information/data collection methods and analysis approach, possible difficulties and limitations, significance of the inquiry, references, and so forth

Lesson5

Presentation of the inquiry plan

1. Each group presents its inquiry plan to the class
2. Teacher gives suggestions on plan revision

Lesson6

Criteria of a good inquiry study

1. Teacher analyzes typical WCIL activities with students (including the weblog, inquiry plan and inquiry report)
2. Teacher and students evaluate typical inquiry learning projects to understand the inquiry process
3. Teacher leads students to understand the criteria of a good inquiry learning project

Lesson7

Progress report

1. Ten groups share their progress in inquiry reports, in which they present the data collected, finished and unfinished items and existing problems
2. Students and the teacher give suggestions on how to process data, organize content and finish the inquiry learning reports

Lesson8

Final presentation and debriefing

1. Ten groups present their inquiry reports
2. Discussion among the teacher and peers; debriefing

(ibid, pg.60)

The results of the experiment were that:

‘The improvement in the level of DL of students [was] significant, as they showed advancement in their ability to access and evaluate information, integrate multiformat texts, create multimedia artifacts, and develop an appropriate attitude toward digital technologies. The students also demonstrated significant progress in their inquiry and learning skills, *collaboration, interpersonal and leadership skills*, and knowledge about their inquiry topic’ (ibid, pg.68 emphasis added)

The authors also usefully outline the problems encountered by both students and teachers during the programme, which are summarised as:

- Inadequate DL, which was mainly manifested as the difficulties that the students had in analysing and synthesizing inquiry materials, and in improving the level of their accuracy of accessing information
- Lack of effective collaborative learning within each group

- Lack of inquiry skills and experience.

Therefore, they recommend the following if repeating a similar learning exercise:

- It is important to make sure that the group leader has previously demonstrated leadership qualities and a strong sense of responsibility, as the group leader is critical for group collaboration.
- The weblogs of groups with good collaboration practices can be reviewed in class to stimulate collaboration in other groups; and between-group competition.
- In the implementation of WCIL, teachers may need to shift their role from teacher to facilitator. They should clearly state the purpose, tasks, and requirements of the WCIL project at the very beginning and supervise the inquiry learning process
(ibid, pg.68)

The study closes with the following key recommendation, which they see as generalisable to WCIL as well as all DL learning tasks of a similar structure:

‘In summary, teachers implementing WCIL should function like football coaches: they need to state the purpose and clarify the requirements of the project at the beginning, and then give guidance and suggestions throughout the whole process based on the performance of students’ (ibid, pg.69)

Systems-based literacy practices

Walsh reviews and presents findings from an experiment with Year 7 and 8 secondary school students in two Australian schools (2010). Students who had previously struggled with literacy were introduced to the intervention as part of their English language curriculum.

Students were set task of articulating – through either a written report or a written, but verbally presented and PowerPoint facilitated, presentation – the narrative (or ‘paratext’) of a favourite computer game. In order to do so they had to apply web-based research skills and read and synthesise existing ‘multi-modal’ paratexts of computer games (found on gamer produced webpages, and constituting an integral part of the digital gaming culture that students were already highly engaged with).⁵ They then had to use these as well as their own ongoing experience of the games themselves, to create their own ‘multimodal’ texts.

⁵ A multi-modal text is one which combines two or more semiotic systems (linguistic, visual, audio, gestural, spatial). Examples of multi-modal texts include: a picture book (in which the textual and visual elements are arranged on individual pages that contribute to an overall set of bound pages); a webpage (in which elements such as sound effects, oral language, written language, music and still or moving images are combined); a live ballet performance (in which gesture, music, and space are the main elements) (Anstey and Bull 2010).

It is suggested that these types of text, and the 'systems-based literacy' skills required for their production, constitute a missing element to contemporary literacy curriculums. 'Systems based literacy' is the term used by the author to explain the skills needed to both play computer games – understanding them as a rule based system to be successfully navigated – as well as articulate those rules and that system to others.

In both case studies, previously disengaged students worked individually and collaboratively, demonstrating and considerably increasing their systems based literacy skills in line with but also exceeding the requirements of the Australian national curriculum. In Walsh's view, this experiment 'illustrate(s) how two teachers came to rethink digital games and students' participation in digital game culture as valuable and integral meaning-making activities'. He argues that this presents strong evidence of the utility of de-centring traditional print based texts within the curriculum, and particularly for targeting such activities at disengaged and underachieving students.

Additional resources

Below are signposted and briefly reviewed some additional resources that were encountered during the literature search.

- *Hewes, S., Kahn, L. and Abdo, M. (2010) Plugged in, untapped: using digital technologies to help young people learn to lead*

A report-cum-resource handbook published by The Youth of Today and The Young Foundation, which provides analysis and practical suggestions (as well as pitfalls to be avoided) in the use of ICTs in educational settings, and building successful online initiatives for empowering young people. See especially, chapters 5 and 6.

- *Digital Literacy Professional Development Resource (Futurelab 2010)*

A professional development resource designed to support primary and secondary school teachers integrate the development of students' digital literacy into everyday curriculum teaching and learning. Consists of a collection of activities, which can be undertaken by a single teacher or a small group of practitioners

- *BECTA (2008) Meeting their potential: the role of education and technology in overcoming disadvantage and disaffection in young people*

A review of literature, policy and practice commissioned by BECTA (British Educational Communications and Technology Agency, now abolished Non-Departmental Public Body) and undertaken by:

- Citizens Online: Dr Gail Bradbrook, Dr Imran Alvi, John Fisher and Heidi Lloyd

- e-Learning Foundation: Ray Moore and Valerie Thompson
- Media@LSE: David Brake, Dr Ellen Helsper and Professor Sonia Livingstone

A huge report into the UK policy and practice contexts of ICT and disadvantage for C&YP; including many examples of successful projects.

- *Stripling, B (2010) Teaching Students to Think in the Digital Environment: Digital Literacy and Digital Inquiry*

A feature article in a School Libraries journal, by the Director of Library Services, New York City Department of Education. Includes a description of her own 'model of inquiry', and useful diagram (pg.17)

- *Chase, Z. and Laufenberg, D (2011) 'Embracing the Squishiness of Digital Literacy'*

An article from a US literacy journal which includes an example of a step-by-step exercise that can be used to teach DL (pg.536-7)

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