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The eight essential elements of digital literacies

Although contexts may change when moving across contexts (for example from working with primary school pupils to working with university students) there are, I would suggest, certain identifiable core and essential elements to developing digital literacies. As I first introduced in Chapter 4, I have identified eight such elements that I will now consider in turn. None of these elements are objectively ‘more important’ than any other. In addition, it must be remembered that the overall matrix is itself subject to the Pragmatic approach detailed in Chapter 6. Four of the ten guiding Pragmatic principles established in that chapter are particularly appropriate to emphasise here. Firstly, that dividing lines between theory and action are arbitrary. Secondly, that this is less an explicit framework than a method of ‘un-thinking’ certain commonly-held assumptions. And finally (eliding the eighth and ninth guiding principles) knowledge is created rather than ‘discovered’ being a matter of social practice rather than in some way ‘mirroring nature’.

With these caveats in mind, I would suggest that the eight essential elements of digital literacies are:

1. Cultural
2. Cognitive
3. Constructive
4. Communicative
5. Confident
6. Creative
7. Critical
8. Civic

 The first of these is the ***Cultural*** element of digital literacies. By this I mean the need to understand the various digital contexts an individual may experience. For example, a teenager may need to understand that their school’s Virtual Learning Environment (VLE) or learning platform is a different semiotic domain to games such as World of Warcraft or social networks such as Facebook. In each of these contexts are found different codes and ways of operating, things that are accepted and encouraged as well as those that are frowned upon and rejected. As Hannon points out, “The nature of literacy in a culture is repeatedly redefined as the result of technological changes” (Hannon, 2000, p22-3). Important technological changes can be unevenly distributed and, increasingly, take place not at the hardware layer but at the software and web applications layer. As devices become cheaper and easier to use, the barrier to entry becomes less to do with technology and affordability and more to do with cultural and social factors. Digital literacies are not solely about technical proficiency but about the issues, norms and habits of mind surrounding technologies used for a particular purpose.

This Cultural element of digital literacies is best acquired through immersion in a range of digital environments. Although the situation is slowly changing, this element is not helped by the banning and heavy-handed filtering policies put in place by many educational institutions. In addition, given that educational institutions are tasked with preparing young people for an uncertain future, they should expose them to the widest range of semiotic domains possible. In a similar way to learning a new language or a musical instrument, this would enable and encourage them to learn to approach the wider world in a different way. The Cultural element of digital literacies is all about seeking ways to give people additional ‘lenses’ through which to see the world.

The second element of digital literacies I would suggest is essential is the ***Cognitive*** element. One way of interpreting this element has been the mainstay of traditional forms of literacy. That is to say that with the traditional definition, literacy is about ‘expanding the mind,’ a psychological phenomenon in which an individual interacts with an objectively-defined form of literacy. As explained earlier (see Chapter 3) this approach, when examined closely, is untenable. There is, however, an important point to be made here. As Johnson explains, it is not about “the ability to use a set of technical tools; rather, it is the ability to use a set of cognitive tools” (Johnson, 2008, p.42). The psychological part of literacy is certainly *part* of the Cognitive element, but the ‘mind-expansion’ comes through the co-creation and contextualization of digital literacies, not through attempting to impose an ‘objective’ definition.

One way in which the Cognitive element (and a ‘cognitive toolkit’) can be developed is to focus upon a variety of mental models and lenses. In a similar way to the Cultural element, we should encourage those in whom we seek to develop digital literacies to see nuance where they have previously seen only dichotomy. An example of this, as we saw in Chapter 5, is the notion of ‘digital natives’ and ‘digital immigrants’. Instead of taking this as fact and presenting it as ‘Truth’ we should present it as just another way of understanding the world. Exposure to various ways of conceptualising and interacting in digital spaces helps develop the Cognitive element of digital literacies. It is not the practice of using tools, but rather the ‘habits of mind’ such use can develop.

The third of the essential elements is the ***Constructive*** element. This pertains to creating something new, including using and remixing content from other sources to create something original. It is very close the definition given by the DigEuLit project for Digital Literacy:

[Digital literacy is] the awareness, attitude and ability of individuals to appropriately use digital tools...in order to enable constructive social action. (Martin, 2005, p.135-6)

The digital world is qualitatively different from the physical world in that perfect copies can be made in ways that do not affect the original version. Although a ‘property’-based definition of copyright was originally assumed in the digital realm (i.e. copying something is stealing) this is gradually being supplanted by a more nuanced definition. New forms of licensing such as Creative Commons[4] allow publishers and individuals sharing content online to specify the conditions under which it may be used. One part of the Constructive element of digital literacies is therefore understanding how and for what purposes content can be appropriated, reused and remixed.[5]

It would appear obvious that any form of literacy must involve some form of communication. Literacy, after all involves writing as well as reading. Another essential part of digital literacies is therefore the ***Communicative*** element. Closely aligned to the Constructive element (which is itself closely aligned to the Cultural element), the Communicative element of digital literacies is about understanding how communications media work. It is, in essence, the nuts and bolts of how to communicate in digital networked environments.

As we saw in Chapter 8, Howard Rheingold considers this to be a separate ‘network literacy,’ believing that the “structure and dynamics of networks influences political freedom, economic wealth creation, and participation in the creation of culture” (Rheingold, 2009a). As with the Cultural (and indeed *every* essential) element of digital literacies, improving at the Communicative element involves practical application. Developing a true understanding of the power of networks (and of networks of networks) involves not only learning about them but being *part* of them. This can present a problem for educational institutions that are used to banning access to such networks using ‘duty of care’ as an excuse.

I will argue after outlining these eight elements that digital literacies are an overlapping matrix in which certain parts are either foregrounded or backgrounded, depending upon context. The Communicative element could be seen as ‘pivotal’ element involving, as it does, “a systematic awareness of how digital media are constructed and of the unique 'rhetorics' of interactive communication” (Buckingham, 2007, p.155). This is closely allied to the Critical element of digital literacies but is much more concerned with reproducing the forms themselves rather than deconstructing how they work. It is the difference between making a successful ‘LOLcat’ as opposed to writing an essay on why it is amusing.

The fifth essential element of digital literacies I have identified, the ***Confident*** element, seems at first glance to be out of place. Surely an individual may be ‘digitally literate’ and unconfident? What I am proposing, however, is a different kind of confidence, a confidence based on the understanding that the digital environment can be more forgiving in regards to experimentation than physical environments. For example, the ability to ‘undo’ an action allows individuals to approach situations in digital environments differently. It is often this more cavalier approach that can hold back those with mindsets that Prensky (2001) would stereotype as belonging to ‘digital immigrants’. This links closely to the mention I made in Chapter 3 of the theory of Structuration proposed by Giddens holding that “social structures are both constituted by human agency, and yet at the same time are the very medium of this constitution” (Giddens, 1976). In other words, individuals who successfully capture the Confident element of digital literacies understand that such literacies are *mutable*.

The OECD identified the unique affordances of technology and digital environments to promote confidence in problem-solving - a skill seen as important in the ‘information’ or ‘knowledge’ society:

Modern society is increasingly looking to [people] who can confidently solve problems and manage their own learning throughout their lives, the very qualities which ICT supremely is able to promote. (OECD, 2001, p.9)

Earlier I discussed Walter Benjamin’s *Saber-Toothed Curriculum* and the need to define principles even if the specifics cannot be agreed upon. This is particularly important with the sixth essential element of digital literacies: the **Creative** element. If there is no longer a ‘canon’ of knowledge that all young people should know, if students need to ‘learn how to learn’, and if the number of traditional gatekeepers to careers is diminishing, then creativity is undoubtedly a vital attribute to develop. Sir Ken Robinson, internationally-renowned speaker and educational thought leader, is quoted as stating: “My contention is that creativity now is as important in education as literacy, and we should treat it with the same status” (Robinson, 2008). I would contend that, in digital environments, creativity is indeed an essential element of literacy.

For creativity to be developed in those seeking to improve their digital literacies, they need to be guided by those who have a different mindset than that which educators have traditionally been encouraged to demonstrate:

The creative adoption of new technology requires teachers who are willing to take risks... a professional culture that is dominated by a prescriptive curriculum, routine practices... and a tight target-setting regime, is unlikely to be helpful. (Conlon & Simpson, 2003, p.149)

The Creative element of digital literacies is therefore about doing new things in new ways. It is about using technologies to perform tasks and achieve things that were previously either impossible or out-of-reach of the average person. Instead of using Microsoft Powerpoint as a technological substitute for writing on a blackboard, for example, the Creative element of digital literacies encourages the reconceptualization of what is possible using, for example, a collaborative wiki-based platform. Returning to Puentadura’s SAMR model it is the equivalent of focusing upon ‘redefinition’ rather than ‘substitution’.

The final two essential elements of digital literacies, the ***Critical*** and ***Civic*** elements, are particularly closely-linked with, and help explain the power of, the other elements. The *Critical* element, for example, to which I alluded to above is closely allied to the Communicative element. Likewise, the Civic element is about participation, social justice and civic responsibility, meaning that it is linked to the Confident element. I will approach the Critical element first, attempting to explain why, in the words of Gurak, “communication in the online world is not quite like anything else” (Gurak, 2001, p.14).

As we saw in Chapter 8, Walter Ong’s notion of ‘secondary orality’ is useful in helping describe the status of non-written media. Digital literacies, therefore, must include more than dealing with text in a digital environment. Gurak helpfully lists Ong’s nine features of oral discourse noting that orality is “additive rather than subordinative” and that each sentence builds on the previous one using certain parts of speech and rhythm:

Others of Ong's oral characteristics - aggregative rather than analytical; redundant; conservative; close to the human lifeworld; agonistically toned; empathetic and participatory; homeostatic; situational - are useful in seeing how the "written" e-texts of electronic discussions (like email) resemble both writing and speech. (Gurak, 2001, p.14)

Digital literacies, viewed through the lens of secondary orality, become a three-dimensional matrix of attributes, skills and attitudes that are dependent upon the Critical seventh essential element. Every type of technology, be it clay tablets or real-time editing of documents stored online, fosters approaches which eventually become conventions. These conventions are often borne out of necessity and good practice but may linger long after the literacy practices “atrophy from widespread disuse” (Gurak, 2001, p.16). The Critical element of digital literacies therefore involves the reflection upon literacy practices in various semiotic domains. Who is excluded? What are the power structures and assumptions behind such literacy practices?

The eighth and final essential element of digital literacies to consider is the ***Civic*** element. This involves the ability for the literacy practices resulting from new technologies and tools to support the development of Civil Society. If we define the latter as made up of the organisations and relationships over and above those provided by the state and commercial institutions, then the importance of the Civic element of digital literacies becomes clear. The ability for people to use digital environments to self-organise into social movements is perhaps best demonstrated in the ‘Arab Spring’ mentioned in Chapter 8.

Although an over-used comparison, the ability for people connect to one another using digital technologies is a revolution akin to the invention and use of the Gutenberg printing press in the 15th century. The history of literacy practices broadly mirrors the spread of democracy, with the ability to instantaneously connect to people across the world from the late 20th century onwards a catalyst for societal change and upheaval. This, however, can be not only good but for ill, as the rise of Al-Quaeda and the events of September 11th, 2001 demonstrate. Indeed, closer to home, rioting in English cities in August 2011 was reportedly facilitated by the use of social networks such as BlackBerry Messenger, Twitter and the Sony Playstation Network. In response, the UK government has talked of the potential of ‘turning off’ such networks during periods of unrest. This has been seen by many as an infringement of civil liberties, the whole episode demonstrating the disruptive power of online social networks.

The eight essential elements of digital literacies I have outlined above are those that, based on my research, I believe to be the core of an overlapping matrix. This matrix may be customised and used to help people develop attributes, skills and attitudes as, in the words of Bawden (quoted more extensively in Chapter 7), “it is not sensible to suggest that one specific model of digital literacy will be appropriate for all people or, indeed, for one person over all their lifetime” (Bawden, 2008, p.28). Digital literacy is a condition, not a threshold and, as with all ‘conditions’ requires maintenance and context. In line with Quine’s ‘web of beliefs’, as elements are added to the core (depending on context) the structure of the overall matrix of digital literacies may change.

Although the logical next step at this juncture would be to use a diagram to provide an overview of the matrix of digital literacies I propose, doing so is problematic and would be at the expense of emphasising the contextual nature of developing digital literacies.[6] Examples will have to suffice. I have deliberately placed the matrix within the Creative ambiguity part of the spectrum of ambiguities, on the borderline with Productive ambiguity. This is so as to give conceptual breathing space and to encourage communities to contextualise the essential elements. Without wishing to be blasphemous, self-aggrandising and/or offend readers’ sensibilities, this is similar to Jesus Christ’s discussion of the ‘Kingdom of Heaven’. In the gospels he uses parables (metaphors in the form of stories) to try and help listeners and readers understand what he believes it will look and feel like. I propose to do something similar by using five metaphors which each capture part of what can be easily understood without being easily represented diagrammatically. The first metaphor is of a dartboard. Imagine ‘digital fluency’ in the centre of this dartboard, as the bullseye, with the eight essential elements distributed clockwise around this centre point. Whilst this captures nicely the way that the elements can be focused upon a centrally-organised concept of ‘digital fluency’ there is no sense that these are all aspects of a single thing.

A second metaphor, therefore, is an eight-sided die upon which could be inscribed the essential elements. This captures the multi-faceted nature of digital literacies but leaves out the ways in which they overlap and can be configured in almost an infinite number of different ways.

In order to sidestep this problem of the die, one could conceive of a third metaphor being the eight elements mapped onto a type of Rubik’s cube. This does indeed allow for many different configurations but, at the same time, treats each element as always being of equal importance.

A fourth metaphor of a kaleidoscope showing eight different colours would certainly convey the infinite configurations of the essential elements and allow for some to be foregrounded and some backgrounded. However, kaleidoscopes are essentially random in nature meaning that the aspects of human agency and intentionality are overlooked.

A fifth metaphor of bread could be used. There are many different types of bread, some including yeast, some without, some involving a lot of kneading and some not. However, all (I believe) involve the use of flour, water and heat meaning that there are essential elements that are configured in various ways for different results. All are recognisable as ‘bread’ but can be very different in appearance, taste and texture. Another aspect of this metaphor that is useful is that some additional ‘elements’ (or ingredients) can be added without prejudicing, and indeed enhancing, the final product. However, to argue that developing digital literacies is akin to baking a loaf of bread is likely to give the wrong functionalist signals to be of socio-cultural value.

One way to use the proposed overlapping matrix within an educational institution would be for representatives of various stakeholders (senior leaders, students, teachers, parents, governors) to each rank the elements in order of importance. Once the order of these have been discussed and debated (this being one of the most important parts of the process) a working group could look at how the development of each element could take place. This process would take into account the tetradic nature of digital literacies and examine how programmes or curricula seeking to develop each element may enhance, reverse, retrieve or obsolesce other practices.

Whilst a definition of digital literacies should be produced by the above process it should (as befits the Pragmatic methodology of this thesis) be *provisional* and *revisable*. In other words, those looking to develop digital literacies should understand that the ground is currently shifting under their feet. The advantage of such an emergent approach to defining digital literacies is that doing so makes the likelihood of agreement and alignment more likely than imposing a rigid framework or hard-and-fast definition of digital literacies.

To round off this chapter, I shall return to the Pragmatic tests outlined in Chapter 3. These constituted the necessary features of a definition of digital literacies:

1. **‘Cash value’** – it must be useful and must be able to make a difference in practice.
2. **Retrospective nature** - it must include past (and future) instances of 'digitally-literate practice.'
3. **Metaphorical nature** - its position to other metaphorical terms in the literate practices arena must be explained adequately.
4. **Digital element** - advocates must be able to explain to what the 'digital' part of 'digital literacy' pertains.

I believe that the overlapping matrix of elements of digital literacies I have proposed does indeed pass these four tests, but in some cases obliquely.

First, the ‘Cash value’ test focuses on the Pragmatic maxim that theories must be ‘good in the way of belief’ and make a difference *in practice*. I believe that defining digital literacies with reference to a core set of elements allows this to happen. It is a useful approach as it provides enough information to get started but mandates discussion, debate and collaboration to operationalise effectively within a given context. By considering separately what each element means in that context and then as a totality, definitions of digital literacies are likely to be grounded in everyday practices.

The second test, that any definitions of digital literacies must include past and future instances of digitally-literate practice, is unproblematic for users of the matrix of elements. Definitions emerging from the use of the matrix are understood as context-dependent, tentative and fallible, so future changes and revisions are not problematic. In terms of past instances of digitally-literate practice, moving from a single definition of ‘digital literacy’ to an overlapping matrix of digital literac*ies* makes this a moot point. Instead of one overarching definition the focus is instead upon a set of context-dependent, evolving definitions. In this regard the matrix approach passes this test by seeing literacy as ‘deictic’, as a term whose meaning is dependent on the context in which it is used.

In terms of the third test, adopting the iterative and collaborative approach suggested in the previous section avoids, to a great extent, the need to unpick the metaphorical nature of digital literacies. Instead of applying a single, rigid definition of digital literacy to a particular context, a collection of digital literacies are seen as emergent by first considering a core set of elements. These may be added to and, importantly, each element can be contextualised before wider definitions are adopted.

Finally, explaining what the ‘digital’ in ‘digital literacy’ means (the fourth test) again depends, to a great extent, upon context. A digital literacies programme amongst a geographically-dispersed population in Africa might consider interaction via mobile phones to constitute the ‘digital’ aspect, whereas a Silicon Valley organisation might consider it to consist of the wider ecosystem that the various tools they use are plugged into. The important insight of the matrix of essential elements is that both parts of ‘digital literacy’ are, in fact, negotiable, contextual and emergent. Without invoking the fallacy of *post hoc ergo propter hoc*[7] I would argue that following a Pragmatic methodology has led to what Johnson (2010) calls an ‘adjacent possible’. The tests outlined in Chapter 6 may have been appropriate when considering separate, distinct notions of New Literacies.

However, this approach seems to be predicated upon an attempted evolution of traditional (print) literacy and an unspoken effort to define one literacy as an umbrella term for the others. Focusing on the underpinning and wider notions of what we want digital literacies to *do* seems to sidestep the inherent problems. There is no longer a need to endlessly define and marshal new forms of literacy into an objective, rigid framework. Instead, identifying the principles behind what we want a definition to do allows for a subjective, but highly contextualised (and therefore much more relevant), definition of digital literacies. Researchers and theorists are able to use the continuum of ambiguity introduced in Chapter 5 to position their work accordingly. As I have already explained, in this chapter I have consciously positioned the matrix of essential elements of digital literacies within ‘Creative ambiguity’ and on the cusp of ‘Productive ambiguity’. I believe that definitions need to be co-created within specific contexts to have power. Whilst previously this was difficult without being immersed in the research area, the matrix can, I believe, encourage discussion and debate leading to productive and useful work in the digital literacies arena.