

# The design of Media and Information Literacy

Andrew Whitworth, University of Manchester

Keynote paper presented at the IFLA/UNESCO conference, "Media and Information Literacy for Knowledge Societies", 24-28 June 2012

## Introduction

This keynote paper outlines a model which can be used to understand, and synthesise, the different ways media and information literacy (MIL) is conceived and then practiced. This investigation is essential if we are to really create a 'Knowledge Society', as foreseen in the title of this conference. Knowledge is flexible, adaptable and constantly evolving, and to engage with it requires a *mélange* of different approaches to the retrieval, processing and communication of information; and facility with a range of media. I propose that at present, the field is characterised by more singular approaches, which each deal with MIL in partial ways: either by separating out different, but complementary approaches, or by dealing with media and information literacy separately.

The model presented here - the *triadic model of information* - is an attempt at the necessary synthesis. It takes as its starting point a chapter by Bruce, Lupton and Edwards (2007), which presented 'The Six Frames of Information Literacy' as a way of highlighting the variation implicit in the field. The triadic model builds on the work of these authors, strengthening their conclusions by incorporating the ideas into a three-sided, framework that connects these frames to the philosophy of social science (Fay 1975), critical theory (Habermas 1984, 1987), digital inclusion (Seale 2010) and communities of practice (Wenger, White and Smith 2009). It also extends the discussion into the field of media literacy as it combines with information literacy.

These ideas were first presented, in embryo, in chapter 2 of *Information Obesity* (Whitworth 2009), and subsequently used in other papers and chapters (e.g. Whitworth, McIndoe and Fishwick 2011; Whitworth 2012). A book is in preparation which will outline the model in detail (forthcoming in 2013).

After the model has been presented, the paper applies it to an analysis of a range of MIL interventions, including tutorials, courses and a project in community education.

## The triadic model

### *Views of social science*

Information, and the media used to construct and disseminate its messages, are not fixed and predictable entities, like machines and energy. The meaning and significance of information and media are negotiated by individuals, communities, organisations and society as a whole, and their effective use therefore involves practices that are essentially social. This means we can - and must - apply principles of social science to understanding what MIL is, how it has developed, who benefits from it and who may be challenged by it.

Fay (1975) explores the development, and implications, of different types of social science (see also Burrell and Morgan 1979). He reviews:

- *positivist* views of social science, in which the orientation is toward developing macro-level understandings of trends and influences on the social sphere, in order that these can ultimately be engineered to bring about desired goals;

- *interpretivist* views, oriented toward the micro-level interpretation of individual, subjective preferences, feelings, emotions, histories, and so on;
- *critical* views, oriented to the meso-level, the analysis of power relations within organisations and communities, and the ways these might be transformed through political and social activity.

Broadly, the three domains of the triadic model correspond to each of these perspectives. Within each, information, media and the ways in which these are constructed and used differ. The *validation* of information takes place against different types of criteria which, respectively, are *objective*; *subjective* and *intersubjective*.

### ***The objective domain***

The objective domain is linked to positivist views of social science. Positivism seeks objectivity through the application of scientific method, and the privileging of this form of value over others such as subjectivity, philosophy, negotiation, and so on (Whitworth 2009, p. 110). Scientific method is, obviously, a very powerful way of validating found information, through testing hypotheses against observations in ways that make these conclusions replicable, reliable and potentially refutable. Thompson puts the case well:

We are lucky to live in an age in which the techniques available for evaluating the truth or falsehood of claims about science and history are more reliable than ever before....  
(Thompson 2008, p. 1)

The tests applied to empirical statements are, for the most part, impressively rigorous, and they are applied by a scientific community that... is made up of individuals from diverse ethnic, religious and cultural backgrounds... from time to time scientists arrive at the wrong explanation of natural phenomena; but these mistakes are usually rectified by later hypotheses that better fit the data. So, when scrupulous researchers overwhelmingly agree that a particular claim is a statement of fact, the probability that they are right is extremely high.  
(*ibid*, p. 28)

Thus, the insights of science should have universal application, and be valid regardless of one's personal beliefs or culture. This is not a problem-free declaration, as I will explain below. But, nevertheless, the end goal of such scientific enquiry is to produce generically-applicable laws, though they will always be open to refutation should new evidence come to light.

This domain can be seen in the information literacy field when learners are instructed to conform to a range of criteria for making judgments about information that have been established through processes that are external to the student. 'Good practices' become codified into standards and rules. Examples include (but are not limited to):

- administrative regulations, e.g. regarding citation, anti-plagiarism
- laws, e.g. copyright
- generic standards and guidelines for information literacy, such as those of ACRL, SCOUNL
- good academic practice, e.g. the importance of scientific method, citing journals rather than Wikipedia, etc.

The frames of IL in play here (Bruce *et al* 2007) are the *content* and *competency* frames. Media literacy is less often conceived in these terms but nevertheless, it is invoked when students are taught about issues such as the laws of defamation (and how to avoid it), regulations on media ownership in particular jurisdictions, and so on.

Work in the objective domain is oriented to the creation of effective users of information. Such users must be aware of how, for example, scientific method helps guard against subjective hunches and untested claims becoming part of the shared stock of information. There are entirely legitimate reasons to respect intellectual property, avoid plagiarism, and learn to conduct an effective search of a database. Thus, as with any other area of expertise, within the objective domain reside basic foundational skills, and these can be taught in a relatively generic way.

It is the argument of writers such as Thompson (2008) and Keen (2007) that neglect of the objective domain is the principal cause of what they see as the *pathology* of information processing that Thompson calls ‘counterknowledge’ and what Keen sees as a simple lack of quality in the online sphere. Keen, particularly, laments the loss of effective *filtering* in the Internet age. The notion of filtering is an important one for the present discussion. In essence, it is different views of filtering - objective, subjective, intersubjective - that I am trying to capture. In this domain, filtering is supposed to be done by a learner in accordance with these generic criteria of validity.

But we cannot adopt generic rules uncritically (Egan 1990, pp. 143-4). To take a statement from a credible source as ‘true’ and accept it without question is, in the end, as undesirable a stance as ignoring the claims of ‘reason’ altogether. Paradigms can form (Kuhn 1970), which create resistance to any challenges to accepted knowledge, despite evidence to the contrary. There are many value judgments, derived from positivist and objective principles, which may stand in opposition to individual and group morality (should one abort a baby which medical science has ‘proven’ will grow up more likely to develop heart disease?). In the social field, Fay (1975) laments that the over-application of positivism leads to the notion of ‘policy science’ becoming dominant: and that individuals become simply the passive recipients of policies and practices designed, implemented and controlled by others (see also Carr and Kemmis 1986). And the relevance of any given piece of information cannot be assigned in advance, but must in the end be determined by a user (Saracevic 2007).

A highly positivist, objective view of MIL is oriented only to effective, legal retrieval of information and the use of certain media to do so. In media literacy this might also emerge when students learn how the media can be used to manipulate messages and construct public opinion: but not in a critical sense, rather in a conformist sense - that is, learning how manipulation can be undertaken in order to go on and engage in such manipulation. That is, ‘media literacy’ becomes the means by which a learner becomes a more skilled media manipulator.

A purely objective MIL could therefore be seen as an extension of the drive to develop effective information systems, which originated with Vannevar Bush (1945) and other colleagues working in information science: and ultimately, to use found information to control communication and disseminate propaganda. Positivism in its pure form is invoked with the aim of establishing rules that can help make predictions and ultimately, engineer these contexts to meet specified ends. Thus, a positivist MIL:

would turn us all into information processing machines, working on the assembly lines of the information society, uncreative, mechanical, following procedures designed by others and not expected to question what we know (Whitworth 2009, p. 113).

It is therefore essential to explore the other domains, and see how they support, but are also distinct from, the objective domain.

### ***The subjective domain***

The subjective domain of information processing is linked to interpretivist views of social science. It is the domain in which we assert personal, subjective judgments over found information, based on our unique configuration of factors such as background, personality, portfolio of skills, temporal and spatial context, emotional state (Kuhlthau 2005), and so on. It is where we learn as individuals: not conforming to rules, as in the objective domain, but *informing* ourselves of new ideas, ways of thinking, approaches, etc.

This notion, of a personal configuration of resources built around, and by, the learner, accords with Luckin's model of the 'ecology of resources' (Luckin 2010). Ecologies contain people, tools, knowledge, information, and other environmental characteristics. An ecology is, in principle, infinite in scope, but in order to make resources manageable, various filters come into play. In the subjective domain, these filters are constructed by a learner, reflecting on their own needs, preferences and so on, and making selections accordingly. Ideally, this should be done in a self-aware way, the decisions made consciously and kept under review.

There is an immense, chaotic diversity of possibilities here, and the clear danger of relativism: Thompson draws attention to the dangers of a stance, exacerbated by the rise in Web-2.0 communication technologies, which he expresses as "If it's true for me, it's true" (Thompson 2008). However, subjectivity can be understood, or at least interpreted, both by the individual in a self-reflective way, and by others, using techniques developed in interpretivist social science. The frames of IL - the educational means by which we understand the values in play here - relevant at this level are the Learning to Learn and Personal Relevance frames (Bruce *et al* 2007). Through work in these frames the individual can be helped to see their learning not as something which happens passively, or randomly, but as something they can learn about (metacognition), and thereby direct, sharpen and generally enhance. Media literacy, considered from the subjective point of view, would involve learning how to effectively use a range of media for one's own learning, discern quality as it varies between media and direct attention to particular resources depending on need and context.

The two domains discussed so far, when combined, lead to the 'study skills' approach to information practice. Effective learners are expected to have an understanding of the range of resources and media which come into play in their own personal learning environment, and to use these resources and media to optimise this environment and sustain it.

The subjective domain is clearly essential. The pathology of information processing which comes into play without it is 'groupthink' (Janis 1972): an inability to question what one is told, to always follow the herd, annul one's critical and creative faculties. The learner would not be engaging at all with the creation and filtering of their own ecology of resources, and all relevant decisions would be being made by others, either in line with formalised rules (the objective domain) or 'peer pressure' and other group-based strategies (the intersubjective domain).

Nevertheless, the subjective domain has problems of its own. Often, learners lack the necessary self-awareness to reflect on their own needs or cognition: Loughran (1996), amongst others, claims this is due to pedagogical problems that spread throughout the whole education system. There is also the phenomenon of *cognitive bias* to contend with. There are known distorting tendencies within the information processing architecture of the human brain: for example, our tendency to look for patterns, to ignore information if it challenges our prior beliefs, to believe that we know more about other people than they know about us, and many more (see Fernandez 2010 for a comprehensive list). Indeed, it is because of such tendencies that the structures of scientific method were developed; to guard against the possibility of subjective hunches and speculations being accepted into the stock of scientific knowledge.

## *The intersubjective domain*

The main limitation to the common ‘study skills’ approach to IL is its neglect of the meso-level; that is, the level of organisations, communities and networks. The interaction between individuals and information, and how these individuals come to understand, and combine, micro-level (personal) and macro-level (generic) criteria for validating information, is important. But at the meso-level, there are processes which shape:

- the individual’s subjective view of their learning needs and the resources available to them and;
- the objectives, rules and processes to which they are expected to conform.

Rules of information processing are, largely, not ‘givens’: these *validity claims* are social constructions (see Habermas 1984/1987). There are many ways in which we orient our actions and judgments against collectively-determined criteria. Understandings of ethics, morals, technology, the assignment of financial value, the meanings of words and phrases - all exist in the spaces between people, thus, are intersubjective.

As Blaug (2007) explains, cognitive biases can also be exploited by organisations, within which certain ‘cognitive schema’ or ways of thinking can be ‘pushed’ at participants, to shape their activity and work, and have it contribute to the maintenance of hierarchical power relations in the organisation. An example would be if an organisational strategy document was used as a way of determining criteria against which all information processing decisions should subsequently be made. This could have the effect of nullifying subjective decision-making, and promoting groupthink.

The neglect of the intersubjective domain comes about, in part, because of difficulties with measuring collective value judgments. Saracevic (2007, p. 2134) draws attention to this, pointing out how, in early studies of IS, the question of the consistency of relevance judgments across a group of judges was a ‘Pandora’s box’. Members of a group, even where this group could be expected to share, in a general sense, criteria for judging relevance (that is, they were an otherwise homogeneous group and/or shared a context, like a work setting), could not agree on the criteria for selecting relevant information even after they had been presented with the selections of other members of the group and asked to review their own selections in light of their colleagues’. The result, to this day (*ibid*) has been a reluctance to use more than a single judge in any study of how information is selected. Nevertheless, groups, communities and organisations *do* affect the way information is perceived, and MIL work in the intersubjective domain is oriented towards raising awareness of these meso-level processes and how they affect work in the other domains.

In Bruce *et al*’s model, the frame of IL in which these understandings are developed is the Social Impact frame. Here, the interest is in “how IL impacts society, in how it may help communities inform significant problems” (Bruce *et al* 2007, pp. 41-42). This suggests that the intersubjective domain is the domain in which transformation takes place, driven not just by individuals informing themselves about an issue but by the subsequent communication of the results of their learning. Hence, the benefits of attention to the publication and dissemination of information, as part of a holistic approach to IL; and also the critical view; the need for an information literate person -- and community -- to understand the way decisions about ICTs are made, discourse shaped in the media, censorship occurs, open information becomes closed, profit is made, etc.

This frame is little developed in most IL education. Andretta (2010) conducted a survey of IL practitioners in 2007, asking them which frame(s) of IL they believed were promoted by their institution, and not a single respondent (from 124, given two answers each) believed that the social impact frame featured in their IL teaching. However, the study of the intersubjective domain is

more developed in media literacy: specifically, in critical media literacy. Kellner and Share (2007) so far as to call for such study to be considered foundational. The work of organisations such as ACME (see the discussion of their web site, below) attempts to manifest these ideals in practice. But critical media studies must also contend with its frequent denigration in the popular press and the educational establishment, which see it termed a ‘soft subject’, indeed, evidence of the ‘dumbing down’ of higher education (Whitworth 2009, p. 81). However, an understanding of hegemony (Gramsci 1971) encourages the view that such denigration is a function of how critical media literacy encourages a more critical view of the products of the media industries.

Bruce et al’s 6th frame, the Relational frame, is also transformational as it brings the other five frames together, driving learners to understand the relationship between all three domains of value. The domains are in a dynamic interrelationship with one another, and a holistic understanding of the whole MIL field involves an appreciation of the value of *all* the domains: not privileging one over another, but understanding how an informational process, such as the research process, shifts constantly between the three as ideas are developed, tested in collaboration with others, and enter (and leave) the accepted ‘canon’ of a discipline. This is illustrated, with respect to the academic research process, in Whitworth (2012); see also the discussion of MOSI-ALONG below.

### *Summary of the triad*

<b>View of social science</b>	Positivist	Interpretivist	Critical
<b>Forms of value</b>	Objective	Subjective	Intersubjective
<b>Basis of value</b>	Scientific	Personal	Negotiated
<b>Emphasis</b>	Consumption	Learning	Communication
<b>Level</b>	Macro-level	Micro-level	Meso-level
<b>Practice</b>	Generic	Situated	Transformational
<b>Structures of support</b>	Scientific method, other rules (e.g. plagiarism)	Individual cognition	Organisations, technologies, cultures, learning communities
<b>Frames of IL</b>	Content, competency	Learning to learn, personal relevance	Social impact, relational
<b>Related pathology</b>	Counterknowledge	Groupthink	Relativism
<b>Key word</b>	Conforming	Informing	Transforming

A holistic Media and Information Literacy can be defined as the knowledge, attitudes, skills, and practices required to access, analyse, evaluate, use, create, and communicate information and knowledge, in creative, legal and ethical ways. In short, MIL is the sum of educational processes through which we learn about the structures and bases of value within each of the three domains (cf. Whitworth 2009, ch. 2). Media and information literate individuals can validate found and produced information against a range of generic, personal and context-based criteria. If M&IL is taught in ways that address only one or even two of the domains, the related pathologies of the ‘missing’ domains will come into play in some form, and the quality of found or produced information will be diminished.

There is a risk this might be seen as just another ideal to be appealed to but not reached. Where are the practical strategies? How can it overcome the political and organisational obstacles in the way of becoming institutionalised? The latter question is not dealt with here. The political implications of these ideas are explored mainly in two book chapters (Whitworth 2007; 2011) but not developed further in this paper. However, the first can be answered by seeing all ‘ideals’ as tools for analysis, and as in a constant state of negotiation and review by all stakeholders. The model is presented as a way of making these connections more explicit and providing ways to recognise the structures, frames and key principles operating in different ways as we handle information.

### **Applying the model**

#### ***Some Media & Information Literacy resources analysed***

As an illustration of the application of the triadic model in real-world MIL teaching, let me use it in an analysis of a range of online tutorials presented by universities and other organisations around the world. This analysis is necessarily brief and not systematic, but it hopefully provides an initial insight into the analytical possibilities of the model. All insights are summarised in a table at the end of this section.

The first web site reviewed is ‘Søk og Skriv’ (Search and Write), developed by the Norwegian School of Economics, the University of Bergen, and Bergen University College (see <http://www.sokogskriv.no>). This web site is very much based around the ‘study skills’ approach to information literacy education, and has a strongly subjective approach. The addressee of the web site is the individual student, preparing to write an exam: the very first words on the page ‘Task initiation’ (which the menu bar implies should be the first page read) are “You are going to write an academic text. In the beginning, you may experience an emotional change from optimism to confusion and doubt.” This appeal to the subjective individual is strongly reinforced by the use of ‘model’ students, of which there are three, whose narratives and perspectives run through the whole site and which other students can use to ‘humanise’ it. The intersubjective domain is lacking, however. Students are encouraged to talk over their ideas with others - fellow students, staff, librarians, friends and family - but there is then no exploration of the implications of this sharing process. Nor does Søk og Skriv does not attend to any questions of how different media may alter the usefulness of found information. The IL angle of the web site is strongly developed, but not the ML.

The University of Sydney web site at <http://www.library.usyd.edu.au/skills/> is much more objective in tone. The resources are largely aimed at ensuring learners conform to regulations and guidelines when accessing information. There is some attention to context, with resources presented that are subject-specific, but very little attention to how individual students might make the guidance their own, and none at all paid to intersubjective issues, or to media literacy.

The third web site is <http://library.leeds.ac.uk/skills>, based at the University of Leeds, UK. This is also a ‘study skills’ web site, but one that is more comprehensive than Søk og Skriv, including discussion of issues such as time management, listening and interpersonal skills, and the use of social media, which unlike the other two sites mentioned so far give it a more intersubjective angle. Though little attention is drawn to questions of power relations in the construction of information, there is nevertheless more of a sense (compared to the other two sites mentioned thus far) that learners are being helped to understand how their *publication* of information, and use of different media, are essential to their studies; not just the retrieval and evaluation of information.

<http://MAdigitaltechnologies.wordpress.com/infoliteracy> is a site developed by myself, with support from colleagues at Manchester and the Higher Education Academy (see Whitworth, McIndoe and Whitworth 2010). As it is my own, I forebear from offering a critique, but draw readers' attention to its explicit orientation around the six frames of IL model, and (particularly in unit 6), the incorporation of media literacy.

Finally, the ACME (Action Coalition for Media Education) web site at <http://www.acmecoalition.org> has a much clearer interest in media literacy than information literacy. It also does not set itself up as a 'tutorial' site in the same way as the others, though this element of it is still present, particularly on the page of teaching resources. Its resources attend little, if at all, to questions of rules and regulations: though there is some discussion of these (aimed largely at drawing attention to organisations that may be breaking these rules). Nor are readers encouraged to reflect on their own learning processes. However, the critical media literacy angle is explicit, thus, attention is very strongly focused on the intersubjective domain and how media messages can be understood.

A summary of these insights is given in the table below, though I must again remind readers that these are preliminary and in need of corroboration. This is a self-selected sample, designed as a test of the applicability of the model, but not intended as a definitive or generalisable statement about the nature of MIL resources worldwide. Let me also point out that I am not criticising any of these web sites as inadequate - I think they are all good in certain ways. Nor is this an 'objective' review: it cannot be, for one of the sites is my own. However, I hope that it shows, in a preliminary way, how the triadic model can be used as a guide for the comparative evaluation, and holistic design, of MIL interventions in formal education.

Site	Objective?	Subjective?	Inter-subjective?	Information literacy	Media literacy
Sydney	Strong	Weak	Absent	Strong	Absent
Søg og Skriv	Moderate	Strong	Weak	Strong	Absent
Leeds	Strong	Strong	Moderate	Strong	Moderate
MIL for PGs & researchers	Moderate	Strong	Strong	Strong	Moderate
ACME	Weak	Weak	Strong	Weak	Strong

One thing that is apparent is how the sites that are weaker vis-a-vis the intersubjective domain are those weaker on media literacy, while the reverse is true for those sites which attend more to the intersubjective domain. If we accept the statement made earlier - that *information* literacy, as commonly defined nowadays (study skills), largely bases itself around work in the objective and subjective domains, then the triadic model may also show that it is through incorporating media literacy into this typical model that a truly holistic approach - one that works in all three domains (and thus, Bruce *et al*'s (2007) 'relational' frame of IL) - can be approached.

### ***A broader project - MOSI-ALONG***

MIL should not only be thought of as relevant in formal education, however. The final case study then, which I describe in more detail, shows how the triadic model can reveal the nature of MIL as it develops outside the formal setting.

The MOSI-ALONG project was a partnership between the School of Education at the University of Manchester; the LSEN; Peoples' Voice Media; the Museum of Science and Industry (MOSI); and Mimas. It ran from March - December 2011, with the help of JISC (<http://www.jisc.ac.uk>), who provided around £55,000 of funding as part of the 'E-Content' strand of their 'Developing Community Collections' programme. The project was set up to define and explore the processes that communities went through in order to produce online content that was developed through informal learning processes, and then enhanced its quality by drawing on the expertise of the formal and non-formal learning institutions which exist around the city - that is, the project partners. This was, in part, a response to the aforementioned criticisms of Keen, regarding the quality of online resources. The MOSI-ALONG project team took the position that communities could learn how to improve the quality of these resources, and that by doing so, they would also be indirectly enhancing their MIL, in all three of the domains of the triadic model. (See Whitworth and Garnett 2012.)

The main outcome of the project was the Aggregate-then-Curate (A/C) framework developed through the evaluation conducted as the project reached its final stages in the autumn. Briefly, A/C is a model of how social media can enable the creation of community-defined, object-centred and good-quality collections of informational resources. Each stage is a validation of the quality of the stages that precede it.

No.	Stage	Involved parties	Measures of quality or value
1	Identification	Participant	Individual, subjective
2	Initial aggregation	Participant, Community learning champion	Community-led, intersubjective
3	Digital creation	Participant, Digital learning champion	Technical, objective
4	Digital aggregation	Participant, DLC	Community-led, intersubjective
5	Sequencing	Participant, DLC	Curatorial, objective
6	Social media aggregation	Social media, DLC	Community-led, intersubjective
7	Accreditation	Many possible organisations	Formal, objective

Community members start with a personal and subjective motivation to produce content (e.g. share images or stories, draw attention to a political issue, etc.). At stage 2 the validation is very informal, usually done by friends or colleagues ('that's a good idea...'). At stage 3, the measures of quality will focus on the conversion of a resource to digital form: that is, if it is a video, is it in focus? Audible? Can the resource be found; has metadata been properly used? Collections of resources will come together at stage 4 (e.g. in the Whalley Range site, discussed further below), and attract the attention of community members, but largely they will still remain within the community. By stage 5, however, other external organisations, such as local government (see below), may recognise their value as resources for learning, and if stage 6 is reached, the resources may 'go viral' and be adopted by communities which see them as relevant but which have no direct connection with the community that originally developed them. At stage 7, the creators of the resources may have their expertise formally recognised, for example, by being offered further commissions, consultancy work, accreditation, funding, etc.

The A/C model is in need of further testing. We believe it has application in the analysis of existing training programmes for community learning champions; and also as the basis for designing further work with CLCs. We also hypothesise that if any of the stages are skipped, resources will be reduced in quality, but at the moment have done no research to confirm or refute this hypothesis.

I use the model here, however, as an illustration of how the different domains of value interact, combining together to form a notion of ‘quality’ online content; a judgment made with reference to objective, subjective and intersubjective criteria simultaneously. For example, one resource enhanced by work done in the MOSI-ALONG project was the Whalley Range community web site at <http://www.whalleyrange.org>. Stages 1-4 are clearly visible in the site and stages 5 and 6 have begun to emerge, which, at least in part, was the consequence of the webmaster adding a Twitter feed to the site and thereby distributing the job of updating the site with local news events. The site is now being used by Manchester City Council as one way they can keep up to date with events in the community, and the webmaster has also been invited to use other media to enhance the learning of the community, for example, local radio. The quality of the material on the Whalley Range site can therefore be judged:

- \* *Subjectively*: by individuals, finding on the site useful resources for their own learning, and using it as a place to tell their stories and present themselves to others (at the time of writing, the site has 153 individual members). The Twitter feed can also be used by individuals to communicate items of interest and link them to the site;
- \* *Intersubjectively*: Groups exist on the site which people can join (see <http://whalleyrange.org/m/groups/home/>); the site also has collective value as a learning resource. Comments and reviews allow for a group judgment to be made about the relevance of particular resources or a group opinion to develop on something like a local event.
- \* *Objectively*: the site is technically good and usable; resources are findable; metadata has been used; and so on. To some extent, the site has received accreditation from an external body, with a formal learning mandate intended to apply generically (at least across Manchester) - the City Council.

## Conclusion

A ‘Knowledge Society’ is a very dynamic one and those who will succeed in it are those who can adapt. This is because knowledge itself is dynamic, constantly being investigated, tested, developed and refuted. We must learn, not just facts and skills, but about ourselves, and about each other: therefore, a media and information literate person must be aware of themselves, and the social relations in which they are enmeshed, as well as about how technologies work and what rules they must follow. The model of MIL presented here is a sketch, but there is plenty of scope to develop it further, and conduct research to determine the impact of MIL teaching as manifested (or not) in each of the three domains.

## References

- Andretta, S. (2010). *Ways of experiencing information literacy: Perception and practice amongst Information Management postgraduate students*, unpublished PhD thesis, Institute of Education, London.
- Blaug, R. (2007). Cognition in a Hierarchy. *Contemporary Political Theory*, 6(1), 24-44
- Bruce, C. S., Lupton, M. & Edwards, S. (2007). Six Frames for Information Literacy

Education: A conceptual framework for interpreting the relationships between theory and practice. In Andretta, S. (ed.): *Change and Challenge: Information literacy for the 21st century*, Adelaide, Auslib, pp. 37-58.

Burrell, G. and Morgan, G. (1979) *Sociological Paradigms and Organisational Analysis*. Aldershot, UK: Gower.

Bush, V. (1945) 'As We May Think', *Atlantic Monthly*, July: available at <http://www.theatlantic.com/magazine/archive/1945/07/as-we-may-think/3881/> [last accessed 3 July 2012]

Carr, W. & Kemmis, S. (1986). *Becoming Critical: Knowing Through Action Research*. Geelong: Deakin University Press.

Egan, K. (1990) *Romantic Understanding: The Development of Rationality and Imagination, Ages 8 – 15*. London, UK: Routledge.

Fay, B. (1975). *Social Theory and Political Practice*. London, UK: Allen & Unwin.

Fernandez, E. (2010). Cognitive Biases: A visual study guide. Retrieved 1 Jul 2012 from <http://www.scribd.com/doc/30548590/Cognitive-Biases-A-Visual-Study-Guide>

Gramsci, A. (1971). *The Prison Notebooks*. London: Lawrence Wishart.

Habermas, J. (1984). *The Theory of Communicative Action Volume 1: Reason and the Rationalisation of Society*. London, UK: Heinemann.

Habermas, J. (1987). *The Theory of Communicative Action Volume 2: Lifeworld and System – A Critique of Functionalist Reason*. Cambridge, UK: Polity.

Janis, I. (1972). *Victims of Groupthink*. Boston, MA: Houghton Mifflin.

Keen, A. (2007) *The Cult of the Amateur: How Today's Internet is Killing our Culture and Assaulting our Economy*. London, UK: Nicholas Brearley.

Kellner, D. and Share, J. (2007). Critical media literacy is not an option. *Learning Inquiry* 1/1, pp. 59-69.

Kuhlthau, C. (2005). Towards collaboration between information seeking and information retrieval. *Information Research*, 10(2), no pagination.

Loughran, J. (1996): *Developing Reflective Practice: Learning about teaching and learning through modelling*, London, Falmer Press.

Luckin, R. (2010). *Redesigning Learning Contexts: Technology-rich, learner-centred Ecologies*. London: Routledge.

Saracevic, T. (2007b). Relevance: A review of the literature and a framework for thinking on the notion in Information Science. Part III: Behaviour and Effects of Relevance. *Journal of the American Society for Information Science and Technology*, 58(13), 2126-2144.

Seale, J. (2010) *Digital Inclusion: A research briefing by the Technology-Enhanced Learning phase of the Teaching and Learning Research Programme*, London Knowledge Lab, London. Available at <http://www.tlrp.org/docs/DigitalInclusion.pdf> [last accessed 30 April 2012].

Thompson, D. (2008) *Counterknowledge*. London, UK: Atlantic.

Wenger, E., White, N. & Smith, J. D. (2009). *Digital Habitats: Stewarding technology for Communities*. Portland, OR: CPSquare

Whitworth, A. (2007). Communicative competence in the information age: towards a critical theory of information literacy education. In Andretta, S. (ed.) *Change and Challenge: Information literacy for the 21st century*, Adelaide, Auslib, pp. 85-113.

Whitworth, A. (2009). *Information Obesity*. Oxford: Chandos.

Whitworth, A. (2011). Information Literacy and Noöpolitics. In A. Pope & G. Walton (Eds.), *Information Literacy: Infiltrating the Curriculum, Challenging Minds* (pp. 187-218). Oxford: Chandos.

Whitworth, A. (2012). Research: a means, an end, or a culture? Keynote speech delivered at *Fagereferentkonferansen*, Universitet i Agder, Kristiansand, Norway, June 2012. See <http://prezi.com/zv9zfufiolox/> [last accessed 3 July 2012]

Whitworth, A., Fishwick, I. & McIndoe, S. (2011). Framing Multiliteracies: A Blended and Holistic Approach. to Digital Technology Education. In T. Mackey & T. Jacobson (Eds.). *Teaching Information Literacy Online*. New York: Neal-Schulman.

Whitworth, A. and Garnett, F. (2012). Aggregate, then Curate: Digital Learning Champions and Informational Resources. Paper presented at the *Networked Learning Conference*, Maastricht, April 2012.

Whitworth, A., S. McIndoe and C. Whitworth (2010): Teaching media and information literacy to postgraduate researchers. Paper presented at the *Higher Education Academy - Information and Computer Science subject centre Annual Conference*, Durham, August 2010.