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Information literacy and what we tend, conveniently, to forget.

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Information literacy is a term that we use as a common professional term encompassing information skills, from the technical to evaluative, often denoting some aspirations for lifelong learning skills, as the “information literate person has learned how to learn.” (American Library Association, 1989). All very worthy aims, but there is no harm in checking that the information literacy bandwagon is the bus we want to be on. Who is driving the bandwagon – is information literacy a concern purely of the information professionals? What’s the engine – how does information literacy fit into the broader skills agenda for all students and schoolchildren? Who are the passengers on the information literacy bandwagon – who else should be involved and is the journey worthwhile for the passengers? Last, but not least, where is the bandwagon going, and will we get there? Is our service manual up to date – or will the wheels drop off the bandwagon? Information literacy initiatives have given new roles and responsibilities to many library staff, but we want to ensure that the information literacy bandwagon is not left in the ditch while the new and swanky roadster with a Web 2.0 badge overtakes us!

Information literacy, like information poverty (Haider & Bawden, 2007), needs some deconstruction. Starting with the “information” of information literacy, we should consider what that implies before moving on to “literacy”. Information for many information literacy programmes means finding your way around library services, books, journals, referencing and evaluating the authority of the sources. There is a heavy emphasis on the text format, and certainly there are a lot of books and journals published and available in most libraries. Text is predominant. Many librarians come from an arts and humanities background and they are comfortable with text, as they think with words. However, information comes in various formats – image, music, numbers, as well as words, and some information literacy programmes tend to forget that. The ability to appraise a graph, to interpret numerical information presented visually, or simply as numbers, is an information skill that we all need. As individual patients, we need to understand risks of treatment, whether presented as numbers or graphically. Numeracy is a skill that many health librarians find uncomfortable, and it is an identified skills gap, “an iceberg called numeracy” (Urquhart et al. 2005). Younger people, particularly the born digital generation will acquire a different set of skills, and their visual intelligence will be different. The effect of playing computer games is apparently to increase abilities in visual attention and learning – students now may think in a different way to earlier generations (Green & Bavelier, 2003). The growth of the Internet, sites such as Facebook, the popularity of iTunes – all these phenomena remind us that future consumers of information literacy programmes may have information skills with some formats of information (music, images) that could easily be more advanced than our own.

Different disciplines have different perspectives on the type of skills that are important to working and practising in that discipline (Boon, 2007). The extracts from various honours degree subject benchmarking statements (QAA) illustrate the different emphasis each discipline has on the skills it deems to be important.

- Biomedical sciences
 - key/transferable skills (communication, IT, numeracy, data analysis);
 - research skills;
 - skills associated with biomedical laboratory practice.
 - make effective and appropriate use of relevant IT

- Archaeology
 - make critical and effective use of information retrieval skills using paper-based and electronic resources
 - make effective and appropriate forms of visual presentation
 - plan, design, execute and document a programme of primary research, working independently
 - collaborate effectively in a team via experience of working in a group, for example, through fieldwork, laboratory and/or project work

- Economics

(5.5) It is worth emphasising further the issue of numeracy. Economists frequently use information that is presented in some numerical form, and students should be appropriately trained in this regard. The raw data are often in tables, the processed data as a graph, an average, a correlation and so on. Numeracy, statistical and computing skills are necessary to handle this sort of information. Presentation skills are needed to communicate such quantitative information in usable ways, and particularly to give critical and coherent summary representations of data that cannot be readily absorbed raw. As well as formal manipulative and presentation skills required to deal with statistical data, economists learn not to be misled by numbers. They question whether the numbers represent what they claim (e.g. unemployment, price indices), they understand statistical significance (e.g. the margin of error in a poll or survey) and they are aware of at least some of the difficulties in sampling a population. In addition, with some understanding of econometrics, they recognise that conclusions drawn from data might be ambiguous.

The term information literacy does not appear, of course! The skills for a qualified archaeologist highlight another meaning for the word information, the act of informing. The social acts of information giving, information receiving, and working effectively in a team are also information skills that are highly regarded by most employers. Information literacy programmes may need to focus more on information production, on the various types of publication and information sharing possible on the Web now, rather than simply on appraising information already published.

Turning to “literacy”, what is implied by literacy? Literacy could just mean the ability to read and write, but the term as used now has a much wider meaning, with an emphasis on the social aspects of the use of reading and writing (Barton & Hamilton, 1998). Most information professionals would assume themselves to be information literate, and, by implication, that the non-information literate are outside the magic circle of qualified information professionals. Literacy is a very loaded term, and probably needs to be handled with some care, to avoid making professional claims of expertise that turn out to be misplaced. Another reason for caution is the association of information literacy with lifelong learning, and education in general. Like motherhood and apple pie, education is a “good thing”. Few would dispute that the unsavoury type of brainwashing conducted in prisoner of war camps under the label of re-education is anything to do with proper education, but education itself may not necessarily be a good thing for all recipients. Ecclestone (2004) contends that education is often, unconsciously perhaps, seen as therapy (for the masses). The history of public libraries in the 19th century was, after all, associated with the good intentions of philanthropists to rescue workers from the gin palaces. But we need to remember that education can also be for radical social action, for change. The value of information may be to increase uncertainty, not to decrease it (Urquhart, 2000). After all, getting evidence into practice often involves considerable realignment in the existing processes in a health organisation. Acting on information obtained may not be easy for those involved, and an unwillingness to go looking for information understandable.

Evidence for our own frameworks for information literacy might be questioned as well. We accept the SCONUL pillars of information literacy, the ACRL framework, and some studies have compared definitions to provide a taxonomy (Big Blue Project, 2002). IN the UK, the CILIP definition (CILIP, 2007) is available. How many of these frameworks are evidence-based in the sense that they have taken into account the research evidence on information behaviour? There have been many more studies on student information behaviour since some of these definitions and aspirations for information literacy were announced, and some of the findings indicate that some of the assumptions may not be as realistic or sensible as they were. For example, in the SCONUL framework there are the following steps: 1) Recognise information need; 2) Distinguish ways of addressing gap; 3) Construct strategies of locating information; and 4) Locate and access information. These steps are perfectly sensible and work in a physical library, but in the JUSTEIS project (Urquhart et al. 2003), this step by step process was not observed. Instead, students used Google or other search engines, and were able to short-circuit between step 2 and step 4, as the search engine algorithm did step 3) (and more) for them. The IMLS project in the USA (Dervin, 2006) demonstrated that users chose a strategy and level of effort based on their situational needs. From the student perspective, a simple Google search may make perfect sense as more would not necessarily gain them more marks in the assignment. Their information seeking suffices.

The JUSTEIS project demonstrated that information literacy initiatives need to be collaborative to be effective – the uptake of electronic journals was significantly better if both academics and library staff were involved in the training and support (Urquhart et al. 2004). Library staff acting alone made no significant difference to student use of

electronic journals, academic staff acting alone had no effect. Some of our co-drivers on the bus, from different disciplines, or policy initiatives have other priorities, and destinations planned, but collaboration and partnership means some sharing of route plans, and discussion about the best ways of getting to the agreed goals. The language may be different, but there may be sufficient similarities for some useful working together. Health literacy, patient choice, lifelong learning, employability all require skills in handling and appraising a variety of information, as well as encouraging self-efficacy among the information users. Information professionals can and should be collaborating with those implementing such initiatives, trying to find the common ground. Policymakers will be using a different vocabulary, different skills taxonomies, but some of the information literacy components familiar to information professionals are still there, just as they are in the subject benchmarking statements of different disciplines, although not labelled specifically as information literacy.

Looking to the future, where do we go to find the evidence for information literacy? We do not want the wheels to fall off the bandwagon, but that means some regular service, evaluations and checks that standards are met. Case (2006) reviews many studies of information behaviour, including earlier studies of students' information use that complement the JUSTEIS and IMLS project findings. Brettell (2007) has updated an earlier review (published in *Health Information and Libraries Journal*) on the effectiveness of information skills training. Many recent articles on evaluations of information literacy have used rubrics, assessment frameworks, to objectively assess whether training has made a difference to skills (e.g. Knight, 2006) or examined the development of information literacy testing (e.g. Ondrusek et al. 2005). Several of the rubrics commonly used are based on well known information literacy frameworks such as the ACRL framework. This helps to make some of the findings easier to compare and to synthesise but the validity of the information literacy framework itself needs to be checked. The test may be measuring very reliably and accurately, but if it is not measuring something meaningful then much effort is wasted. Scales & Lindsay (2005) demonstrate the need to ensure that our interpretations of information literacy are shared by the users.

In conclusion, information literacy may be a language that only information professionals speak, but dialogue with other professions and other policymakers, in language they understand, is essential to ensure that the bandwagon stays on the right road. We need to be aware that information is not just text, and that the born digital generation will be clever in ways that we are not. There is no doubt that we need to obtain more evidence, but we need to ensure that what we are measuring is valid, and that both our programmes and our theoretical aspirations are based on research evidence.

(paper based on presentation at Umbrella 2007).

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