

Promoting inferential information behaviour

Rather than acquiring a set of skills, inferential information behaviour involves forming a mindset involving problem-solving and lateral thinking. **Dr. Andrew K. Shenton** looks at ways to develop inferential strategies.

An exemplar scenario

Peter, a teenaged boy, faces a perplexing situation. Most weeks, he travels on the local train service from Monkseaton, on England's north-east coast, to Newcastle upon Tyne's Haymarket station, tours the shops of interest and then makes a return journey. His usual strategy is to buy a 'Daysaver' ticket allowing him to travel in both directions on the day it is purchased. On this occasion, however, the scenario is slightly different. He is again to go from Monkseaton to Haymarket but, rather than return home entirely by train as normal, he will travel only three stops and disembark at Ilford Road, where he will be meeting his uncle, Paul. Paul will bring Peter home by car in the evening. Intent on travelling as cheaply as possible, Peter finds himself having to make a difficult decision. Will it be less expensive to opt for his usual 'Daysaver' or should he buy a single ticket to Haymarket and then, when he has finished his visit to the shops, purchase another that entitles him to travel to Ilford Road?

Peter knows on arriving at Monkseaton station in advance of his first journey the cost of a 'Daysaver' ticket but he has no idea of the price of an ordinary ticket from Haymarket to Ilford Road. He could ring the relevant travel firm but he is not carrying his mobile phone. The stations themselves are unmanned so there are no staff whom



Peter can consult. He comes to his decision after using an inferential information-seeking strategy. Realising that Haymarket and Ilford Road lie within the same travel zone, Peter theorises that the cost of a ticket which authorises him to go from the former to the latter should be the same as that for a ticket from Monkseaton to Shiremoor since these stations, too, lie within one zone, and, as he is currently standing at Monkseaton station, finding out this information from an automatic ticket machine poses no problem. Ultimately, he is able to conclude that the price of a 'Daysaver' will be less than the total expense of the other option and he takes the appropriate action. On arriving at Haymarket, Peter checks the cost of a single ticket to Ilford Road and discovers that his decision was well justified.

The nature of inferential information behaviour

The true events reported above demonstrate the value of an inferential strategy for finding information. It is not unusual to learn that the information necessary in particular circumstances is not easily available. On these occasions, one of the most useful options may involve making inferences from a related situation, although this possibility may not be immediately apparent to the individual and may initially be rejected on the grounds that it is too circuitous. Certainly, much depends on the soundness of the assumption linking one scenario, which involves 'known facts' that do not affect the individual directly, with another in which the learner is personally involved. This situation is comparable to a line that has been taken in qualitative research with regard to the transferability of study findings. Lincoln and Guba (1985) posit that a person wishing to apply the results of one project to another situation may be able to abstract from the findings a working hypothesis if the 'sending' and 'receiving' contexts are sufficiently similar (p. 297).

Various generalisations may be made if individual instances of inferential information behaviour are assembled as a whole:

- Broadly, the approach is often put into action when either the required

information does not seem to exist or gaining access to it will prove troublesome. As long ago as the mid 1980s, Durrance (1984) cited these problems as two of a possible eleven she had detected and which may affect information-seeking action. Various more specific scenarios are embraced by these generic possibilities: there may appear no obvious way of meeting a particular information need; a preferred method may fail to deliver acceptable results; barriers may inhibit the individual's ability to employ a desired technique. Two examples of inferential information behaviour cited in a previous paper by the author well illustrate how the approach is sometimes used in the absence of 'harder', more direct information (Shenton, 2009a). Both relate to information-seeking by adults for academic purposes. In the first, the inquirer was concerned with the question, 'What journals are likely to publish my scholarly study of the BBC Television series, Moonbase 3?' (p. 356). Knowing that this information was too precise and personal to be formally recorded and no expert was available to advise, the individual inferred titles by compiling from reference books a list of serials that had recently published comparable papers. A further barrier to the employment of a more conventional approach to an

information system was that it proved difficult to search via an effective statement that united all the aspects in which the inquirer was interested. The second case also relates to writing for publication. Here the scholar wanted to learn, 'What are the best journals in education?' (p.358). Unaware of any research studies in this area that could help him, the individual constructed a list of the journals covered by three relevant abstracting and indexing services, and assumed that any serial meeting this criterion must be of reasonable standing.

- Frequently the situation that has prompted an inferential strategy involves the making of a decision. The importance of information in decision-making is well established in information science, with writers recognising the association decades ago (e.g. Nehnevajsa, 1966; Voos, 1969).
- A high degree of cognitive effort is required at various stages in the process. Initially, the individual must either identify information that is meaningful to their situation and pursue it proactively or recognise its value if it arrives unsolicited; once it has been accessed a firm link must be established with their own situation and

finally adjustments may have to be made before it can be applied in a personal context. Since inferential approaches impose considerable demands on the individual, they are better suited to secondary age youngsters than to

their primary counterparts. It is significant that, in one of the few instances of inferential information behaviour that came to light in the author's PhD study and which was reported by a participant in the younger half of the sample, it was an adult working with the girl who drew the inferences. The child providing the data wanted to learn more about a fossil that had been sent to her by her grandfather. She was disappointed by the fact that the books she consulted dealt with fossils generally, rather than hers in particular (Shenton, 2009b), and an inferential approach was taken by a helpful adult who sought to apply the information from these texts to the girl's own fossil.

Inferences should, of course, be made only with caution. One of the major dangers is that there may be factors inherent in the original scenario of which the youngster is unaware and the individual is thus poorly placed to make an accurate comparison between this situation and that, which is occupying their attention. Drawing on the work of Edwards and Poston-Anderson (1996) with adolescent girls, the author has demonstrated how inferential behaviour may involve translating to one's own situation what has been learnt from monitoring the

behaviours and strategies of those who are in a similar position (Shenton, 2009a). Clearly, the actions of each of the people scrutinised may well be influenced by a wide range of factors, and these may be of differing priority. Unless these variables and their respective importance are articulated by the individual, it is unlikely that they will be fully appreciated by others.

Similarities can be drawn between inferential information behaviour and the notion of lateral thinking advocated by de Bono (1971). Perhaps the most striking shared feature is that both emphasise a sideways, rather than head-on, approach to dealing with situations. In addition, de Bono writes of the importance of identifying a path between a 'new and quite arbitrary' position initially adopted for dealing with a problem and the 'starting point' that concerns the person (p. 13). This stance can also be understood inferentially. The new position involves considering the potentially useful information, whilst the starting point relates to the particular challenge at hand. Furthermore, de Bono stresses that a logical path between the two points must be constructed and tested rigorously; a similar rule may be applied in terms of inferential information behaviour.

Inferential information behaviour and problem-solving

Inferential information approaches are consistent with modern assumptions, regarding the mindset needed for effective information-seeking action and the aims that should underpin the teaching of information literacy (IL). Pitts (1994), who has conducted research with American high schoolers, argues that an adaptable, problem-solving perspective is crucial to information-seeking success and certainly the days when IL involved school librarians teaching only skills associated with bibliographic tools and paper information sources are long gone. Eisenberg (2008) presents the Big6 Skills approach that he has devised with Berkowitz as 'information problem-solving' (p. 41), and, in her report to the National Forum on Information Literacy, Doyle (1992) asserts that students will have to 'apply problem solving skills regularly in school and personal areas' if they are 'to become self-motivated, independent learners' (p. 14).

Yet, with so much information now available so easily, via the Internet, there is a danger that youngsters today fail to understand the need for a problem-solving orientation. Educators wanting to add this dimension may face an uphill

battle if their efforts are interpreted by learners as attempts to overcomplicate what they perceive to be the essentially straightforward process of finding information. Moreover, unless the skills of problem-solving are frequently practised, they can be lost very quickly and youngsters fall back on old habits, such as relying without thought on material from the World Wide Web whenever they are required to undertake any form of information search.



Inculcating inferential information behaviour

Previous work by the author has highlighted instances in which an inferential approach has been applied by individuals in real situations (Shenton, 2009a). In view of the method's utility, it would seem appropriate that efforts are made to address it in schools within IL teaching. Key questions emerge, however, with regard to how this should be done and who should be involved. Inferential behaviour is not restricted to any single area of the curriculum and should be genuinely transferable so it would be unwise to address it exclusively within the context of any one subject.

If an effort is made to incorporate it into a more generic study skills unit, there is a risk that it is seen solely in terms of the exercises in which it is presented, even when the designer of the teaching module has made a great effort to offer a diversity of contexts. As Lincoln (1987) comments, for many pupils the material covered in 'study skills' sessions 'remains out on a limb and is rarely transferred to the main core of their studies in subject areas' (p. 8). It may be argued that the challenges of encouraging youngsters

to adopt inferential information behaviour in even wider, i.e. non-academic, contexts in addition are greater still.

Another teaching approach is that of the information professional demonstrating inferential strategies at the point of need in the school library. It is, nevertheless, entirely possible that situations in which their application is most suitable do not arise in this environment at all and indeed many are entirely unrelated to academic life, like the ticket-buying scenario outlined earlier. In some schools, it may be questioned whether the teaching of an inferential mindset really lies within the remit of the librarian. As the work of Large, Nasset and Beheshti (2008) indicates, there is a tendency to categorise the reasons motivating young people to look for information as either education-oriented or leisure-based. Since many of the situations that lead to inferential methods involve 'life problems' which do not fall into these categories, senior managers in schools who share the view of Large and his colleagues may be unaware of the value of teaching them. Conversely, if the role of the information specialist is perceived to be one that helps to educate the whole person rather than aiming to cater merely for the 'academic self' and the 'recreational self', a strong case can be made for addressing strategies that are particularly useful in other contexts. It is pertinent to take cognisance

of Kuhlthau's observation that 'serious constraints' are imposed on problem-solving generally in the event of the individual lacking skills associated with the location, evaluation and use of information (Kuhlthau, 2008).

If it is true, as the legendary writer and broadcaster, Alistair Cooke, has claimed in his *Letter From America*, that 'all abstractions are better understood through examples' (Cooke, 2003), then where a decision is taken to promote inferential information behaviour much of the success of the teaching would appear to depend on the quality of the exemplars that the educator offers to the learners and their imagination in being able to conceive of a sufficient diversity. A further challenge lies in using the totality of these cases to construct a framework that will enable learners to develop their own inferential approaches since, fundamentally, inferential information behaviour involves forming a mindset, rather than acquiring a skills set. In order to appreciate the placement within this structure of real scenarios, the framework must not be too abstract; yet it must be sufficiently generic to accommodate the individual instances, which essentially form only examples.

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References

- Cooke, A. (2003) *Letter From America*. BBC Radio 4, 3 October. Transcript available at: http://news.bbc.co.uk/1/hi/programmes/letter_from_america/3167810.stm# (accessed: 25 May 2011).
- de Bono, E. (1971) *The Use of Lateral Thinking*. Harmondsworth, Pelican.
- Doyle, C.S. (1992) *Final Report to the National Forum on Information Literacy: Summary of Findings*. ERIC Document ED 351033.
- Durrance, J.C. (1984) *Armed for Action: Library Response to Citizen Information Needs*. New York, Neal-Schuman.
- Edwards, S. and Poston-Anderson, B. (1996) Information, future time perspectives, and young adolescent girls: concerns about education and jobs. *Library and Information Science Research*, 18(3), 207-223.
- Eisenberg, M.B. (2008) Information literacy: essential skills for the information age. *DESIDOC Journal of Library and Information Technology*, 28(2), 39-47.
- Kuhlthau, C.C. (2008) From information to meaning: confronting challenges of the twenty-first century. *Libri*, 58(2), 66-73.
- Large, A., Nasset, V., and Beheshti, J. (2008) Children as information seekers: what researchers tell us. *New Review of Children's Literature and Librarianship*, 14(2), 121-140.
- Lincoln, P. (1987) *The Learning School*. London, British Library.
- Lincoln, Y.S. and Guba, E.G. (1985) *Naturalistic Inquiry*. Newbury Park, California, Sage.
- Nehnevajsa, J. (1966) Information needs of society: future patterns, in: *Proceedings of the FID Congress 1965*. Washington, Spartan Books, 161-168.
- Pitts, J.M. (1994) *Personal Understandings and Mental Models of Information: A Qualitative Study of Factors Associated With the Information-seeking and Use of Adolescents*, unpublished PhD thesis submitted to Florida State University, Tallahassee, Florida.
- Shenton, A.K. (2009a) Inferential information-seeking. *Library Review*, 58(5), 353-361.
- Shenton, A.K. (2009b) *Young People's Information Universes: Their Characteristics and Development*. Saarbrücken, VDM.
- Voos, H. (1969) *Information Needs in Urban Areas: A Summary of Research in Methodology*. New Brunswick, New Jersey, Rutgers University Press.