



Intellectual isolation, geographical isolation and information overload of academics at a rural university: an information-seeking perspective

by John Mills

Abstract

This paper reports the results of a study of the information-seeking behaviour of academics for research and teaching at Charles Sturt University's Wagga Wagga campus. Thirty academics were interviewed about their information-seeking behaviour, a diary of impressions recorded from interviews was kept, and participants' reactions to draft transcripts of their interviews were noted. A key finding of this research was the way in which information-seeking behaviour was motivated. It was found that a range of influences was responsible for participants choosing which direction to take. Three influences are combining to make rural academics' information seeking for research and teaching more challenging. The first is a perceived reduction in information access is engendering feelings of geographical isolation. The second, intellectual isolation, arises largely from feelings of a reduction in expectations of self-efficacy. The third influence is information overload, which appears to be affecting both rural- and urban-based academics and is demotivating them from seeking information. Introduction

Introduction

This paper reports on aspects of recently completed research (Mills 2002) carried out on the information-seeking behaviour of academics at Charles Sturt University's Wagga Wagga campus in southern New South Wales, Australia. A broad definition of information seeking was used in the research: 'Individuals who consider or act upon a consideration of identifying or locating that which has the potential to modify their internal knowledge structures are engaged in information seeking' (Westbrook 1997: 319).

Thirty academics, purposively selected, were interviewed using a semi-structured interview schedule about their information-seeking behaviour for research and teaching. This qualitative, user-centred approach to data collection was considered the most appropriate approach for getting the participants to 'tell their own story'. It was also considered to be an approach that would yield rich, detailed information about the participants' information-seeking behaviour. Interviews were transcribed as they were completed and the collected data analysed and categorised. The first step in analysis

involved manual coding of the collected interview data into categories to describe the material. Continual revision of these categories was undertaken as interviews were completed. At the conclusion of data collection and initial analysis, a more in-depth analysis was carried out. In addition, a diary of impressions recorded from interviews was kept, and the reactions of participants to draft transcripts of their interviews were noted. In the gathering, coding and analysis of qualitative data this research followed a grounded theory method approach to analysing data and developing theory that emerged from that data.

A key finding of this research was the way in which information-seeking behaviour was motivated. It was found that a range of influences was responsible for participants choosing which direction to take. In particular, it was found that motivators and demotivators were responsible for energising or de-energising information-seeking behaviour. Influences, both motivating and demotivating, were taken into account in deciding whether to proceed or not with behaviour. Three factors were concluded to be motivating and demotivating influences that influenced the direction information seeking of academics at a rural university:

- geographical isolation
- intellectual isolation
- information overload and the role of information technology.

Technology is claimed to cross all boundaries; the world is becoming a global village as technology provides electronic and faster physical means of access for us all. Executives in a company can participate in global telecommunications linkups and engage in real time exchanges of views and policies, and this also has parallels

in the academic environment. Academics can participate in online conferences, engage in MOO (Multi-user Object Oriented environment) sessions, email, participate in discussion groups, post drafts of papers online to entice and engage comment, and can retrieve online full-text journal articles and other documents previously only available from a library's shelves or by document delivery. Technology has brought the libraries of the world to the academic's desktop, and there have been suggestions, especially with regard to academics, that the physical library as it is now known may largely disappear and be replaced by the virtual desktop library.

A closer analysis of the situation, however, reveals an information-seeking environment that is largely fragmented along discipline lines and is prey to the financial viability of the particular university in which the academic is employed. Academics in the sciences, for example, are more likely than an academic in the humanities to be able to rely upon an electronic library that provides most of what they require. But this could be considered rather simplistic, and seems to suggest that in terms of information-seeking behaviour an academic just needs to link what is perceived to be his/her information need with a title in a database or on the Web.

People prefer other people from which to obtain information (Chen and Hernon 1982) and communication between people is generally sought. In this research it was found that academics, on a day-to-day basis, still preferred other colleagues and their own resources to other, more formal, sources of information. This, combined with the increasing desktop availability of sophisticated electronic access to

geographically remote colleagues and databases would, on the surface, appear to suggest that, for academics working at a rural university, information seeking was less 'remote' and potentially more rewarding. It was therefore surprising to find that academics working at a rural university found that geographical and intellectual isolation were demotivators on their information-seeking behaviour.

Geographical isolation

Rather demoralising and frustrating for many academics was geographical isolation. It was most evident with regard to physical isolation from major city universities, academic staff and library collections. The intellectual isolation which resulted (discussed later in this paper) was also perceived as damaging or detrimental.

Geographical isolation is relative, and each academic perceives and responds to it differently. For example, academics working in the area of agriculture tended to be relatively less geographically isolated than academics in other areas. Major reasons for this are believed to be that much of their research can be done nearby, in the field, and there is usually a range of local conferences, workshops, seminars and other activities that can be attended, thus potentially lessening feelings of geographical isolation. Overall, though, it was thought that academics in a non-metropolitan university may feel this isolation more than their capital city counterparts.

Geographical isolation was perceived by many participants to be a problem that affects their research and teaching. Working at a rural university nearly three hours drive from the closest metropolitan universities in Canberra, and five to six hours away

from large metropolitan campuses in Melbourne and Sydney respectively, should not present, one would think, many difficulties given the widespread availability and academics' use of electronic communication and document delivery services. However a number of factors, when combined, appear to suggest that there are many difficulties. University budgets are falling, thereby influencing such things as availability of library resources and ability of universities to fund staff to attend conferences.

Many participants saw the library journal collections available to them, especially at the Wagga Wagga Campus compared to Charles Sturt University's other campuses, as not very good and had resorted to travelling to other campuses and to the larger cities to browse collections and seek out specific material. The cost in terms of stress, accommodation, travelling costs and time in using libraries in the capital cities to copy material was considered less stressful and financially cheaper than applying for inter-library loans or copies, waiting for them to arrive and paying for them. Basically, choice was reduced for academics in this study. As one participant said: 'If you were in Sydney, Melbourne ... you have several libraries you can go to, but we can't do that here. That's a particular problem of being in the country' (Participant 28). Electronic document delivery did provide some relief from the need to travel but was not considered a substitute.

Geographical isolation, whether this is caused by distance from large city-based universities, or distance from colleagues on other campuses in the same university, or by a reduced ability to fund attendance at conferences and meetings, can give rise to intellectual isolation.

Intellectual isolation

The need for academics to be creative and to engage in social interaction at work is accepted as necessary by Barry and Squires (1995: 181) and by more than three-quarters of the academics in this study. As one participant said: 'in any form of learning, we have to have interaction and reflective thinking and critical thinking' (Participant 12). A reduction in academic interaction on a face-to-face basis on campus was seen by another participant as a problem. He thought it was necessary for

peer review ... peer interaction before information seeking...and also ... after the information seeking activity has taken place. We don't have enough of that (Participant 12).

For many academics it is immediacy of contact, and geographical proximity to colleagues they can communicate with, that reduce feelings of intellectual isolation. The words of one participant illustrate this:

Occasionally they [other academics] might email me with a question or a comment and vice versa. I might use them, or [we might] telephone each other occasionally about certain issues in the discipline. And in the course of the conversation they may say, have you read that paper ... if you haven't, you say, no, can you give me the reference, and I will go and get it. And sometimes if they are really nice, they will actually photocopy it for you and send it to you in the post and vice versa ... I think that's a part of normal academic discourse. In that case that's a sense of isolation at CSU-Riverina. If you were in a metropolitan university you could

probably walk to the office next door and speak to the same colleague and have a broad discussion ... being the only ... academic on this campus [I cannot do that and]...I don't really work with any of my colleagues...at other campuses in this institution (Participant 24).

These sentiments were also echoed by other participants who were the only full-time persons in a subject area. They 'often feel quite isolated'; one academic noting 'I wish I had someone to run ideas by, and I often don't have' and

I don't have a lot of contact with other colleagues ... I really love it when I am doing my research and I am up at [University of] NSW, because I can talk to a whole cross section of people that have similar interests and, just even over a cup of coffee, sometimes it is amazing what you get ... like resolve issues, or points in another direction, or give you a contact, and I think that's really important. We don't have a very active seminar series in our school (Participant 20).

The fact that there were too few academics to provide support, for example in exchanging ideas, clarifying thoughts and using colleagues' resources, was a powerful motivator to seek sources outside the university. The following comment is representative of many academics in this study:

in the sense that not many people are doing research in my field or not many people are teaching the discipline which I teach ... therefore I have no interaction, but I do speak to colleagues from other universities (Participant 14).

This situation can also act as a stimulus to finding other sources, but such activity may contribute to feelings of inadequacy about their own institution's ability to service what might be considered normal teaching and research information needs. It is not easy for many academics to simply substitute a personal form of interaction with colleagues with an electronic form.

An additional contributing factor to the availability of kindred academics with whom one can interact has been the reduction in the number of academic staff in some subject areas. Staff numbers in terms of staff/student ratios are declining, especially in some discipline areas. As one participant said: 'These days it is very common to be the only full time academic involved in a subject' (Participant 23).

The problem of resource deprivation, caused either by lack of funds for the university library collection or by geographical isolation from other large library collections, and the lack of collegial support was of major concern to nearly all participants in this study. The reduction in interaction with colleagues has influenced what Bandura (1977) calls self efficacy, discussed later in this paper. But, rather ironically, too much information - information overload - was also a concern.

Information overload and the role of information technology

The third set of findings from this research related to the perception of information overload by many participants, resulting from information technology.

Toffler (1970) refers to this 'information overload' as causing cognitive over-stimulation and affecting our ability to think. To some extent this perceived problem by rural academics of information overload referred mainly to the large amounts of information coming from membership of listservs and discussion groups, and to filtering required material from Web resources and database searches. There seems to be less time to seek information and, although there is improved access to information, there is much more information.

This problem of information overload affects capital city universities as well as those in rural areas. At times the amount of information accessed is overwhelming leading academics to rely on colleagues for a quick response and generally spend time in extensive filtering (e.g. for currency and authority) of information once it has been obtained. This situation often leads to demotivation to access: as one participant noted, 'I've got a particularly heavy load this semester in terms of doing the email, voice mail, commitment to students ... I really don't have a lot of time to just sit at the computer' (Participant 8).

Since Toffler wrote his bestseller *Future Shock* in 1970, information supply has increased dramatically and information overload is more prevalent. Most probably,

the real problem for most people is that they are inundated with information and they have little chance of getting through it. Information is no longer difficult to come by. Rather than providing users with information maybe we should actually be sheltering them from it (*Journalism and the Internet* 2000: 4).

Lancaster (1999: 49) points to the problem of not enough filtering of information in this age of increasing access to information, rather than to the need for better physical access:

librarians have little justification for claiming that technology has greatly improved access to information ... it has produced huge improvements in physical access to published text and graphics. However, intellectual access to the contents of this text has improved very little, if at all.

In the landmark study *Dying for information* conducted by Reuters Business Information (1996) on the effects of information overload, the resultant generation of stress was considered a major problem. For example, the creation of stress caused by information overload was especially insidious. Major factors cited include the

threat of being overwhelmed by the sheer quantities of information that must be mastered if we are to do our jobs efficiently ... not knowing whether crucial information exists or if it exists, of not being sure where and how to locate it ... frustration stress caused when we know where some essential information is located but are not sure how to access it (Reuters Business Information 1996: 2).

A factor underlying and intensifying this information stress, the Reuters study found, was time pressure where the 'more information there is, the less effectively we take it in'.

For the participants in this study, very active listservs, discussion lists and routine university-generated emails, whose benefit was often

considered dubious by participants (and also by Barry and Squires (1995: 185), were key triggers of feelings of information overload. For some it related to information coming from everywhere and an inability to control it. One academic, for example, said: 'I actually delisted myself because I was getting swamped with so many hundreds of e-mails that I just couldn't keep up' (Participant 22). Pressure of time was a key reason for deleting listserv subscriptions with a participant saying: 'I have never found a lack of information to be a problem, it is always a problem getting the time to make use of the information' (Participant 6). Others found the information on listservs repetitive and often comprising low interest material, and gave this as a reason for lack of use.

Many participants found the amount of information available on the Internet overwhelming, were frustrated in identifying relevant material, and were concerned about the refereeing processes. Discussion on listservs was seen as often irrelevant or marginally relevant to main areas of research and teaching.

One participant, reporting on use of email and listservs, found that

it ... stresses me out just to have to read all the information ... it is probably too convenient, people overuse it and I don't want to be overloaded that way ... You had too much information that was irrelevant and I don't consider it worthwhile at the moment to be on one, to have information, get stressed having to read it all (Participant 17).

The Internet was cited as a major contributor to participants feeling a sense of information overload, of

having yet another access point for contact and information. But 'using the net' was now a necessary part of their every-day working life, the university required it for teaching and research, and it had the potential to be a remarkable resource.

Waddington (1998) suggests that:

Technologies for managing information are often the problem, not the solution ... more lanes just means more traffic. People create and distribute because they can, not because it's useful. Intranets can become like the Internet - full of homemade pages and dead links.

Information overload created stress for many academics in the present study, with reactions often personal perceptions of inability to cope. The following types of comments were made: 'I need to reduce the amount of information coming to me. How do I know what is important? How do I manage all of my other duties if I read all of this?'

According to many academics, the amount of information is more difficult to control with listservs and discussion lists, and a discussion of all of the potential contributors to information overload must include all of the sources of information to which an academic has access. Academics discriminate between sources depending upon the type of information required and their relative levels of motivation/demotivation towards different sources. When there are pressures, such as time constraints, academics are further encouraged to discriminate. Perhaps because of the relatively recent nature of communication exchange through listservs and subsequent lack of familiarity with this source, the

demotivation of the participants in this study to use listservs was stronger, and this source was more likely to be bypassed or not used. It may be that in times of information-seeking stress, there is an automatic reversal to more familiar and therefore personally justifiable means of information seeking, such as one's colleagues.

Other important sources that were seen to lead to information overload were databases. They have been especially valuable in providing some sort of control for academics over the vast amounts of information with which they have been faced, but at the same time they can present a problem of information overload, with the result that monitoring of continually new information falls behind (Barry and Squires 1995: 179). Sometimes time pressures and the expectation of having to undergo a potentially non-productive search on databases acted together to demotivate information-seeking. For example:

I might have only two hours to prepare a lecture and I need to be able to go straight to the source of what I want at the library ... if I am just mucking around with key words in the CD-ROM I am lucky to get ... 3000 articles on this or even 250. [It] is just too many for me (Participant 22).

The concerns expressed by this participant are what Bandura (1977: 193-194) refers to as self-efficacy (or sense of personal mastery), where

the strength of people's convictions in their own effectiveness is likely to affect whether they will even try to cope with given situations. At this initial level, perceived self-efficacy influences choice of behavioral (sic) settings. People fear and tend

to avoid threatening situations they believe exceed their coping skills, whereas they get involved in activities and behave assuredly when they judge themselves capable of handling situations that would otherwise be intimidating ... Efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences.

The increasing pressure on an academic's time, created by administrative duties, has seen the amount of time devoted to information seeking for research especially, but also for teaching, decline (Barry and Squires 1995: 183). Just at a time when much more information is accessible, there is decreasing time to access it and undertake research. The result is increasing feelings of information overload. Some academics found that this situation created frustration, and that time

to pursue my own scholarly interests and those things seem to be getting less and less...time is consumed by too many committees and other administrative duties...that does prevent me from doing research. (Participant 8)

For those involved in interdisciplinary research, there were further pressures to narrow down the area of expertise, lest the amount of information coming from many different subject areas became too overwhelming (Westbrook 1999).

Conclusion

This study cannot be generalised to include academics in larger city universities. It provides a snapshot of academics in a rural university in New South Wales at a particular point in

time. The data does suggest, however, that three forces are combining to make information seeking for research and teaching more challenging. The first is that feelings of geographical isolation are engendered by a perceived reduction in information access. The second is intellectual isolation, arising largely because of the feelings of a reduction in expectations of self-efficacy. Self-efficacy (or sense of personal mastery) is an increasing problem for many academics in their information-seeking behaviour. The reduction in collegial interaction through reduced numbers, especially in some discipline areas, geographical separation of academics, and a reduction in the general availability of academics to share ideas through increased workload pressures, suggest a potential for increasing intellectual isolation. The third force is information overload, which at the same time appears to be affecting both rural- and urban-based academics, and demotivating them from seeking information. These pressures are exacerbated by the increasing demands on an academic's time, created by the demands of multiskilling which means that less time is devoted to information seeking for research and teaching purposes.

Information overload, while it may lead to frustration and bypassing of information, can to some extent be challenged by limiting exposure to information and by making decisions about what to ignore. There is, then, a real risk in ignoring potentially useful information, but the results of this research suggest that this is already happening. The problems caused by geographical and intellectual isolation are not so easy to deal with, and it appears that just increasing access to information from the desktop is not a panacea. Academics require information, but they also require

meaningful interaction with colleagues for mental stimulation and idea generation.

There are dangers for the administrators of rural universities in ignoring the role played by the invisible college in information exchange and idea generation, and the need for academics to obtain access to timely and relevant information. For those working at rural universities the challenges in information seeking for research and teaching, but especially research, are greater than for those working at their city counterparts. A situation could arise, and I suspect it already has, where the best academics will not be attracted to universities in rural areas, and rural universities will continue to be seen as secondary to their city counterparts. Although this could be addressed by increased budgets for staff and resources at rural universities, this is unlikely to occur.

Further investigation into the information seeking needs of academics in rural based universities is essential. Such investigation may reveal that the current provision of information resources needs to be reassessed, alongside the needs identified by academics. Greater provision for academics to use resources at city-based universities may need to be provided. Current resources provision is inadequate for many academics, especially when their research needs are considered.

References

- Bandura, A. 1977. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84 (2), 191-215.
- Barry, C. and Squires, David. 1995. Why the move from traditional information-seeking to the electronic library is not straightforward for academic users: some surprising findings. In *Online Information '95: 19th International Online Information Meeting Proceedings*. Oxford: Learned Information, 1995. 177-188.
- Chen, C. and P. Herson. 1982. *Information seeking: Assessing and anticipating user needs*. New York: Neal-Schuman.
- Journalism and the Internet: A case study of the impact of the Internet on the information seeking behaviour of end users*. (online). 2000, http://web.cs.city.ac.uk/~pw/ji_desc.html [Accessed 5 April 2000].
- Lancaster, F.W. 1999. Second thoughts on the paperless society. *Library Journal*, 125 (15), 48-50.
- Mills, J.J. 2002. *Information-seeking behaviour of university academics*. PhD thesis, Charles Sturt University.
- Reuters Business Information. 1996. *Dying for information: An investigation into the effects of information overload in the UK and worldwide*. London: Reuters.
- Toffler, A. 1970. *Future shock*. London: Pan.
- Waddington, P. 1998. *Dying for information? A report on the effects of information overload in the UK and worldwide* (online). 28 January 1998. <http://www.cni.org/regconfs/1997/ukoln-content/repor-13.html> [Accessed 18 May 1998]
- Westbrook, L. 1997. User needs. In *Encyclopedia of Library and Information Science*, v.59 (Supplement 22). New York: Marcel Dekker, 1997, 316-347.
- Westbrook, L. 1999. *Interdisciplinary information seeking in women's studies*. Jefferson, N C.: McFarland.

Dr John Mills has been a lecturer in library and information management at Charles Sturt University since 1979. His main areas of interest lie in information-seeking behaviour and provision of distance education in an Asian context. He has authored several books and articles in the areas of third world bibliography, information seeking and distance education. He is currently Sub-Dean, International Affairs, in the Faculty of Science and Agriculture with special responsibility for programs in library and information management.
