Evidence Based Library and Information Practice

Meta-synthesis of the Research on Information Seeking Behaviour of Graduate Students Highlights Different Library Resource Needs Across Disciplines and Cultures

A Review of:
Catalano, A. J. (2013). Patterns of graduate students' information seeking behaviour: A meta-synthesis of the literature. *Journal of Documentation*, *69*(2), 243-274. doi:10.1108/00220411311300066

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Abstract

Objective – To synthesize research on the information seeking behaviour of graduate students.

Design – Meta-synthesis of quantitative and qualitative research.

Setting – Higher education institutions mainly in the U.S. and Canada, but including studies from other countries in Europe, Asia, and Africa.

Subjects – Graduate students (master's and doctoral level).

Methods – The *Library Information Science and Technology Abstracts (LISTA)* database was searched from 1997 to 2012. References of retrieved studies were reviewed and a Google search carried out. Studies were critically appraised using the Evidence Based Librarianship (EBL) critical appraisal checklist by Glynn (2006). The author extracted information from the included studies and took notes on the studies' findings. Notes were then grouped into themes according to relevant research questions that emerged. A critical interpretive synthesis approach used qualitative and quantitative information from the synthesis to answer these research questions. Small user surveys were summarized in the tables but not included in the synthesis.

Main results – The review included 48 studies. Most studies were rated as having good study

design and results, but many were thought to be weak when it came to their sampling and data collection techniques.

Students often initially look on the Internet for information. Many acknowledged that this information may be unreliable and turn to sources recommended by their advisors. Increasingly library resources are accessed remotely, rather than print versions. However, knowledge of library web resources and services is not always good, with many students using Internet search engines to find information.

It is suggested that accessibility of resources in different disciplines and familiarity with technology drives information behaviour. It is not always feasible for all sources of information needed in different subjects to be made readily available electronically. Professors, faculty members, and advisors were consulted most often by students, however this varied between disciplines and institutions. Librarians who demonstrated and promoted their expertise to academic departments were more highly valued by students.

Students used reference lists of articles to find other relevant material (citation chasing). Students were more concerned about the speed of accessing material rather than the quality or reliability of the content. Some students were put off by seemingly complex library systems and tools. Boolean operators and advanced search strategies were rarely used and if they were used, it tended to be by students with more computer expertise.

International students may not be as aware of the library services that are available to them. Differences in culture and language can affect whether a student feels comfortable asking for help with library resources.

Conclusion – Different types of students, such as master's and doctoral level students or those from different disciplines, access different types of resources in different ways. Graduate students may benefit from training offered in a variety of different formats to address these different needs. Other people are important in helping students begin their research and therefore institutions should ensure those advising students are aware of information services and training available. It is suggested that further research should be done looking into cultural differences in information behaviours. It is also recommended that researchers should increase their use of standardized, validated questionnaires to improve consistent measurement of information behaviour.

Commentary

Critical Interpretive Synthesis (CIS) was adapted from meta-ethnography by Dixon-Woods et al. specifically to synthesize a large number of studies that are a mix of qualitative and quantitative research (2006). This approach differs from conventional systematic reviews of quantitative studies, in that it is more dynamic, iterative, and responsive and is very much based on qualitative research methods such as grounded theory. Therefore, experience in qualitative research methods is an advantage when undertaking this type of review. This type of synthesis does not follow a step-by-step predefined method and, as much of the process is driven by the author-generated theory, it is often difficult to report in a clearly reproducible way. This seems a suitable method to use in this review, because a variety of different quantitative and qualitative studies are included. It is useful to have examples of this method being used in the library and information science literature for others to refer to.

Catalano begins her review with a broad search for research studies on the information-seeking behaviour of graduate students in one database, the library and information science database *LISTA*. In this type of review less formal search strategies are often used, with one article leading to another until no new ideas emerge and saturation occurs. This is different to the structured comprehensive literature search conducted in a quantitative systematic review, such as a Cochrane review. Catalano's choice of a library-based resource

influenced the type of studies that were retrieved in this review. Catalano explicitly states, however, that she is taking a service provision approach and intends to look at the literature from this perspective. As with primary qualitative research, this is a snap-shot taken from a particular point of view and not a complete summary of all the research on this topic.

Similarly, formal critical appraisal is not always thought useful in qualitative or mixed methods (including both quantitative and qualitative studies) reviews. In the original CIS review by Dixon-Woods et al. the methodological quality was assessed and only studies that were fatally flawed were excluded on this basis (2006). The assessment of quality forms the "critical" part of CIS along with the relevance of the studies in order to form theories. Catalano has used a critical appraisal tool specifically designed for information and library studies and reported studies as valid (>75%) and not valid (<75%) in the summary table and this is commented on in the methods section of the article. It would be helpful to have information on each section of the critical appraisal for each study to enable readers to judge individual sources of bias across the included studies. One source of bias reported by Catalano was that most studies were conducted in convenience samples. This means that the study participants may not be representative (however large the sample) and that statistical inferences in these studies are invalid, as these are based on probabilities from the larger population. Catalano goes on to report inferential statistics from convenience samples in the synthesis without comment on the error in these tests. It is unclear how the critical appraisal was incorporated in the synthesis. More details could help other researchers conduct similar reviews in the future.

The chosen method of synthesis reflects the voice of the author, possibly with other authors bringing out different themes or coming to different conclusions from the included studies. A concern with this review by Catalano is that she seems to be the only reviewer here with the exception of the critical

appraisal of her study that was carried out by someone else. Reviewing in a team can bring a variety of perspectives and, while reaching consensus can sometimes be problematic, this can result in richer and more robust conclusion.

This review has highlighted some important implications for library practice.

It is worrying that students find speed of accessing research resources more important than quality. Encouraging Internet use in itself is not a bad thing, but students should learn early on how and where to find information and how to assess its relevance and reliability. Once these skills become automatic, then the process of finding the most appropriate and trustworthy information is much quicker. Literature searching and critical appraisal skills are highly valuable and can be used on the Internet, as well as more specialist research databases, throughout a person's life. It is difficult to change this behaviour at a graduate/postgraduate level when bad habits have already set in. Perhaps this could be tackled by introducing good searching techniques earlier in undergraduate programs or even in schools when children first go online. In the meantime, higher education institutions must make learning searching and critical appraisal skills a priority and ensure that library staff are able to teach this effectively.

As more students are using the Internet as a research tool, libraries need to ensure that the library website is the preferred starting point for any research project by highlighting appropriate and reliable sources and useful research tools. More effort is needed to engage and teach students using the library's website and other tools, such as social media. Libraries should also find ways to help students from different cultures (e.g., providing some resources in different languages). Libraries have to respond to the needs of increasing numbers of remote users and find innovative ways to reach students that do not often physically visit library buildings. The resources and services provided by university libraries should be promoted more widely to

academic staff and students and instructions on their use embedded into research training.

Many academic libraries have begun to address several of these issues and they have an excellent range of resources for students from different disciplines. With the increased emphasis on evidence based librarianship, this good practice must be evaluated and shared with other information professionals.

References

Dixon-Woods, M., Cavers, D., Agarwal, S., Annandale, E., Arthur, A., Harvey, J., Hsu, R., Katbamna, S., Olsen, R., Smith, L., Riley, R., & Sutton, A.J. (2006). Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups. *BMC Medical Research Methodology, 6*, 35. doi:10.1186/1471-2288-6-35

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