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**“Ask, Acquire, Appraise”: A Study of LIS Practitioners Participating in an EBLIP Continuing Education Course**

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## Abstract

**Objective** – The project sought to examine the aspects of the question answering process in an evidence based library and information practice (EBLIP) context by presenting the questions asked, articles selected, and checklists used by an opportunistic sample of Australian and New Zealand library and information professionals from multiple library and information sectors participating in the “Evidence Based Library and Information Practice: Delivering Services That Shine” (EBLIP-Gloss) FOLIOz e-learning course.

**Methods** – The researchers analyzed the “ask,” “acquire,” and “appraise” tasks completed by twenty-nine library and information professionals working in Australia or New Zealand. Questions were categorized by EBLIP domain, articles were examined to identify any comparisons, and checklists were collated by frequency.

**Results** – Questions fell within each of the six EBLIP domains, with management being the most common. Timeliness, relevance, and accessibility were stronger determinants of article selection than rigour or study design. Relevance, domain, and applicability were the key determinants in selecting a checklist.

**Conclusion** – This small-scale study exemplifies the EBLIP process for a self-selecting group of library and information professionals working in Australia and New Zealand. It provides a snapshot of the types of questions that library and information practitioners ask, and the types of articles and checklists found to be useful. Participants demonstrated a preference for literature and checklists originating from within the library and information science (LIS) field, reinforcing the imperative for LIS professionals to contribute to EBLIP research.

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## Introduction

Questions asked by practitioners, whether they be health professionals, teachers, social work practitioners, or librarians, contribute greatly to our understanding of evidence based practice (Booth, 2006). They can provide a valuable insight into the nature of uncertainties encountered in day-to-day practice and the questions that such uncertainties provoke (Chalmers, 2004). They also permit researchers to calculate approximations for the frequency with which such questions arise (Ely et al., 1999). Taken further, studies of questioning behaviour frequently result in the production of classifications or taxonomies that allow examination of the characteristics of particular question types (Ely et al., 1999, 2002). At a practical level, real-life questions provide a basis

for evaluating the coverage and fitness-for-purpose of information resources (Ely et al., 1999). They also allow identification of barriers encountered when attempting to address an outstanding question (Ely et al., 2002). Finally, where such questions are pursued to eventual resolution, they can yield a pragmatic glimpse of the relative value of the evidence base, and of specific study types (Glasziou, Vandenbroucke, & Chalmers, 2004), in answering real-life concerns of practitioners (Ely, Osheroff, Chambliss, Ebell, & Rosenbaum, 2005). Outside of this practical context, practitioner questions that are either unanswered or inadequately and incompletely answered provide a rich vein for the generation of future research priorities.

This study sought to examine practitioner questions in LIS, in order to present a snapshot

of the current concerns for library and information staff working in Australia and New Zealand at the given time.

### **Literature Review**

The field of medicine has been very active in examining the characteristics of questions generated by healthcare professionals, particularly in the course of delivering clinical care. The research literature makes the frequent assumption that such studies successfully reflect the information needs of those being studied (Smith, 1996). However, several commentators observe a significant attrition in the numbers and types of questions in the stages that precede articulation, and then pursuit of an information need generated from a patient encounter (Gorman & Helfand, 1995; Booth, 2005; Glasziou & Haynes, 2005; Wimpenny, Johnson, Walter, & Wilkinson, 2008). Within an educational context, where practitioners identify, prioritise, and select from a range of questions that have occurred during their recent practice, the likelihood that the resultant questions are representative is further compromised (Hersh et al., 2002). Nevertheless, such questions have particular value in modelling the technical aspects of the evidence based practice process (Grefsheim & Rankin, 2007; Grefsheim, Rankin, & Whitmore, 2007), particularly in focusing the question, identifying the source of a potential answer, matching that source article to a suitable appraisal checklist, and then conducting a structured appraisal of the retrieved study (Gray, 2010).

Evidence based library and information practice (EBLIP) similarly recognizes the importance of a well-formulated practitioner-led question as the stimulus for subsequent inquiry (Eldredge, 2000; Kloda, 2008). It has witnessed several noteworthy attempts to capture the questions asked by practising librarians and information specialists. Typically such studies focus only on the point of question generation and have not pursued the likelihood of finding a satisfactory answer. For example, Eldredge (2001) conducted

an opportunistic international survey of the “most relevant and answerable research questions” facing the health library profession. However, close examination of survey results reveals an emphasis on their relevance with no formal criteria used to identify the degree to which they were answerable. Lewis and Cotter (2007) revisited questions identified by this 2001 survey (Eldredge) and compared them with those asked at an educational EBLIP workshop 5 years later. They identified a gap between those questions being asked by library and information practitioners and those being addressed by researchers. A 2011 study (Eldredge, Ascher, Holmes, & Harris, 2012) identified the top-ranked research questions specifically for the medical library profession building on a previous study (Eldredge, Harris, & Ascher, 2009) but upgrading the methodology to improve answerability. A previous study has taken the “demand-supply chain” for EBLIP question-answering further by asking “what studies do practitioners actually find useful?” (Booth, 2004) An alternative approach is to work from the opposite (i.e. the supply) end and to examine the characteristics of the literature in connection with its question-answering potential. Crumley and Koufogiannakis (2002) created a taxonomy of six domains (i.e. broad subject areas) within which library and information practitioner questions might be framed. They subsequently revised this taxonomy in the light of the characteristics identified from a significant sample of the library literature (Koufogiannakis, Slater, & Crumley, 2004).

### **Aims and Objectives**

The objective of this study is to extend previous research by examining five interlinked aspects of the question answering process, namely:

- 1) the questions posed by library and information practitioners (Booth, 2006; Kloda, 2008);
- 2) the assignment of questions to domains (Wilson, 2009a);

- 3) the articles retrieved to attempt to answer such questions (Wilson, 2009b);
- 4) the study designs of such articles (Lorenzetti, 2007; Wilson, 2009c); and,
- 5) the selection of appraisal tools used to scrutinise such studies (Booth, 2007; Wilson, 2010).

This study aims to provide valuable insights into the practical realities of attempting to pursue evidence based practice in a library setting. It will present the questions asked by a small sample of library and information professionals working in Australia or New Zealand and undertaking an online continuing professional development (CPD) course in 2010. In addition, the articles selected to answer these questions and the checklists used to appraise the articles will be presented. The data will be collated in order to reflect on the types of questions asked by library and information practitioners, the articles selected, and the most commonly used checklists.

## **Methods**

The study draws upon responses from an opportunistic sample of Australian and New Zealand library and information professionals from multiple sectors involved in an EBLIP educational opportunity. It therefore does not claim to be representative of the wider LIS population. An opportunistic sample is not random; respondents are selected based on convenience (McGraw-Hill Higher Education, 2001).

ScHARR Information Resources Group (School of Health and Related Research, The University of Sheffield) designs and delivers a program of continuing professional development online courses for library and information professionals in Australia and New Zealand in association with the Australian Library and Information Association (ALIA). In 2010, the "Evidence Based Library and Information Practice: Delivering Services That Shine" (EBLIP-Gloss) course was delivered to twenty-nine library and

information professionals working in those countries. The course was designed and delivered by the authors of this study.

Of the twenty-nine library and information practitioners included in this study, fifteen were drawn from the academic sector, six worked within health services, four were public librarians, two were employed in government, and one identified him or herself as "technical." One practitioner did not specify the library and information sector he worked in.

The EBLIP-Gloss course consisted of readings, podcasts, tasks, and exercises relating to the evidence-based library and information practice process. The course was structured around the five EBLIP elements: "Ask," "Acquire," "Appraise," "Apply," and "Assess." This article focuses on the first three elements. The course tasks relating to these were as follows:

- 1) Ask** – Course participants identified a "burning question" relating to their own library and information service. Participants were asked to focus their question using the "SPICE" framework (Booth, 2006), that is, to identify the **Setting-Perspective-Interest (phenomenon of)-Comparison-Evaluation** for their specific topic in order to facilitate identification of relevant evidence. Participants were also required to locate their question within a specific EBLIP domain (Management, Information Access and Retrieval, Professional, Collections, Reference Enquiries, Education) (Koufogiannakis et al., 2004).
- 2) Acquire** – Course participants were asked to identify an appropriate article to help answer their burning question.
- 3) Appraise** – Course participants were asked to identify a suitable critical appraisal checklist in order to appraise their chosen article.

Course participants collated their work into a portfolio for submission at the end of the course, and the information for the Ask, Acquire, and

Appraise tasks was later extracted into tables by the researchers. The questions and articles selected by participants were categorized by the domain allocated by the LIS practitioners. One of the researchers (PE) did this by grouping the questions by domain and collating them into Table 1 (see Appendix). The researchers then analyzed the questions and articles to see if any recurrent themes were present.

Course participants were asked to indicate whether they *“agreed to the FOLIOz team using material from my portfolio for training, sharing good practice, course evaluation or publicity.”*

Participants who had previously withheld their consent for generic use of their portfolio received a follow-up email outlining the purposes of this article and seeking consent for their anonymous contributions to be included in the analysis. All participants subsequently gave their consent.

## Results

The questions were divided into six domains (management, information access and retrieval, professional, collections, reference enquiries, and education) and categorized by sector to identify trends. There were no clear patterns linking sector and domain. However, all sectors reflected the wider recurring themes of innovation and efficiency.

### *The “Burning Questions”*

The questions harvested by this EBLIP course reflect the significant variety of issues being faced by library and information practitioners. Recurring themes include efficiency (especially of staff time), the development of innovative services, and improving existing services. Participants were asked to categorize their question into one of the six EBLIP domains (Crumley & Koufogiannakis, 2002; Koufogiannakis et al., 2004): Management, Information Access and Retrieval, Professional, Collections, Reference and Enquiries, and Education. Examples from each are included

below in Table 1. The full list of burning questions categorised by domain and sector can be found in the Appendix. The questions are presented exactly as the participants posed them and with the domain(s) the participants assigned to their own question. Some participants assigned more than one domain to their question if they felt it crossed domains. One question was not categorized into a specific EBLIP domain, but the participant defined it as “Marketing and library promotion.” As the Management domain includes marketing, the question has been included as a Management question for subsequent analysis.

“Management” was the domain that contained the largest number of questions. Questions concerned staffing, customer services, and the use of library spaces. Another issue emerging from the management domain was difficulties in trying to engage users with online resources through marketing. Engaging users with online resources also figured prominently in the information access and retrieval domain, alongside more traditional questions relating to classification schemes.

Two questions fell within the professional issues domain. The first concerned the use of dedicated software for capturing data on librarian workflows. The second was specific to participation in the FOLIOz EBLIP-Gloss course.

The collections domain encapsulated some wider questions facing libraries: outsourcing expertise, e-books and budgets. Two questions whether employing these services is wise, while another is posed at a more operational level.

Five questions fell within the reference and enquiries domain; again, the quest for improved efficiency was an underpinning theme.

The questions that fell within the education domain could be divided into three categories: online resources, information literacy, and referencing and plagiarism. Whilst effectiveness is an important issue, being able to prove this

Table 1  
Examples of Burning Questions Categorized by Domain

Domain	Number of Questions	Sample question
Management	10	<i>"What evidence is there that pre-tertiary student conduct and learning improves with the provision of social networking spaces and areas to assist the use of personal digital equipment within the library?"</i>
Education	6	<i>"Are the students transferring the skills learnt in that [library training] unit to the other units they are in enrolled in 1) in the same semester? 2) Are the skills used in the second and following semesters?"</i>
Reference and Enquiries	5	<i>"Is the information desk at [the] library meeting its objectives in providing a service to students that helps them use the library and its resources more effectively when looking for information for their assignments?"</i>
Information Access and Retrieval	4	<i>"What are alternative options in making use of technologies and/or web-based platforms to use for presenting, organising and facilitating access to technical data, manuals and other documentation for users?"</i>
Collections	4	<i>"What evidence is there that the breakdown of the collection budget is allocated to various collections appropriately?"</i>
Professional Issues	2	<i>"What terms/terminology other than 'evidence-based' can the librarians look for when researching and looking at articles to determine whether they are evidence based?"</i>

effectiveness is key in justifying support for library services.

#### *Articles Chosen to Answer the Questions*

A further point of interest was the nature of the articles chosen to address the original burning questions. Participants were given a briefing to read that provided guidance on acquiring evidence and listed suggested resources (FOLIOz, 2010). Participants then searched for and selected their own articles, although advice

was given from the course facilitators if the course participants emailed with queries.

This study confirmed the characteristics of the library and information literature in that the majority of studies (n=19) used by course participants were either surveys or case studies. Qualitative methods were generally well-represented although the abstracts for such studies generally revealed pragmatic use of a qualitative methodology rather than existence of an underpinning paradigm. Two literature

reviews and two conceptual/theoretical papers revealed that background questions can be advanced by more overarching discursive works. Only a small number of studies were comparative, either using a case-control retrospective design (2 studies) or internal comparison (before-after, 1 study; interrupted time series, 1 study). There were no randomized controlled trials or systematic reviews present in the articles used.

Generally, articles were of recent origin, with the year of the course (2010) being well represented in the chosen selection. The oldest article was dated 1996. A large majority of the articles were subsequently found to be available as free full-text via either online journals or article repositories. Australasian journals and authors were also well represented. Only one study figured in more than one response (Korah & Cassidy, 2010).

### *Checklists Chosen for Critical Appraisal of the Articles*

Course participants were given a list of suggested checklists (see Table 2) in order to appraise their chosen “burning question” article. They were also given a worked example using the ReLIANT checklist (Koufogiannakis, Booth, & Brettle, 2006) and asked to read a book chapter on appraising the evidence (Booth & Brice, 2004). Alternatively, participants could identify a checklist for themselves if they felt none of the checklists listed were appropriate to appraise their chosen article. Most participants (n=28) chose one of the suggested checklists, with only one participant identifying his or her own checklist. If participants contacted the course facilitators with queries, advice on selecting a checklist was given.

Table 2  
Critical Appraisal Checklists Chosen

<b>Checklist</b>	<b>Reference</b>	<b>Number of course participants</b>
CriSTAL Checklist for Appraising a User Study	CriSTAL (2010b)	10
ReLIANT	Koufogiannakis et al., (2006)	5
Critical appraisal checklist for a questionnaire study	Boynton & Greenhalgh (2004)	4
'A critical appraisal tool for library and information research'	Glynn, L. (2006)	3
CASP Appraisal Tool for Systematic Reviews	Critical Appraisal Skills Programme (2006)	3
CriSTAL Checklist for Appraising an Information Needs Analysis	CriSTAL (2010a)	2
Critical Appraisal Checklist for an Article on an Educational Intervention	University of Glasgow Dept. of General Practice (n.d.)	1
CASP Qualitative Appraisal Tool	Critical Appraisal Skills Programme (2006)	0

The most commonly used checklists were those produced for the CriSTAL initiative, with 12 participants choosing either the Information Needs Analysis/Audit (CriSTAL, 2010a) or User Study checklist (2010b). These checklists were employed for articles derived from multiple domains – Marketing, Information Access and Retrieval, Collections Management, and Reference. Many of these questions focused on user aspects and services or on some form of published standards (e.g., classification).

The ReLIANT checklist (Koufogiannakis et al., 2006) was used by 5 participants, mostly in the domain of Education (n=4), with one in the domain of Management. The BMJ questionnaire checklist (Boynnton & Greenhalgh, 2004) was used by 4 participants, mostly in the domain of management (n=3), with one in Collections Management. The EBL (Glynn, 2006) and CASP (Systematic Reviews) (Critical Appraisal Skills Programme, 2006) checklists were each used by 3 participants. One participant used the checklist on educational interventions and one used an alternative published checklist (Markville Secondary School, 2009) due to their article being a literature review, which was not specifically one of the studies covered by the suggested checklists.

In most cases, the choice of checklist was heavily influenced by its relevance and appropriateness to the article chosen to address the “burning question.” It was further affected by the domain within which the question appeared – e.g., the educational intervention checklist (University of Glasgow Department of General Practice, n.d.) matched questions appearing under the Education domain. The format also influenced some participants, with reference to checklists being clear and logical. The fact that checklists such as those from CASP use screening questions to check whether it is worth continuing with the appraisal was also noted as a positive. A further positive feature was inclusion within a checklist of a section on applying the article to one’s own setting

(applicability), a key facet in evidence based practice.

Choice of checklist was also influenced by the checklist authors’ affiliation, for example, if they were affiliated with an organization in the same sector as the participant it was more likely to be used. One participant also noted that the ReLIANT checklist was specifically designed for use by library and information professionals, considering this a positive in terms of its appropriateness.

Most participants found that the checklist that they had selected met their requirements, but some made adjustments where necessary, using the published checklist as a guideline. It was noted that sometimes it was difficult to assess the appropriateness of a checklist, so some participants trialled several checklists on their chosen article before making a final decision.

## **Discussion**

Course participants generated a wide range of questions, demonstrating the numerous areas facing the modern library and information professional. The questions, although grounded in the context of the service where the library and information practitioner works, cross contexts and provide a snapshot of the current issues facing the LIS profession. This contrasts with a volume of Library Trends journal which asked researchers to identify questions that could and should be answered (Lynch, 2007).

Questions fell within each of the six EBLIP domains, with Management being the most common. Similarly, research on questions asked by librarians found that the most commonly asked were in the domain of Management in both 2001 and 2006 (Lewis & Cotter, 2007). This could be due to the testing times we find ourselves in: library and information managers have to prove the worth of their services more than ever, and come up with the evidence to support existing services and to make bids for new developments. Eldredge et al. (2012) also



found that the fifteen top-ranked research questions for the medical library profession reflected “a high level of anxiety with respect to the financial future of health sciences libraries.”

The variety of articles selected reflects the variety of the questions asked. There appears to be a preference for direct applicability (Booth, 2004): for example, most of the literature fell within the library and information science domain. The choice of study design depended both on the type of question (for example, background questions tended to be answered by overview type articles such as literature reviews), and on the availability of types of study design within a given field. For example, no RCTs were selected, but this is more telling about the types of study designs published rather than the selection choices of the course participants. Eldredge et al. (2012) recommend the types of research designs which could answer the top ranked research questions in the medical libraries field, the majority being cohort study. The Medical Library Association Research Agenda Committee is co-ordinating systematic review teams to identify the current evidence on these questions as a first stage (Eldredge, Ascher, Holmes, & Harris, 2013).

Participants demonstrated a preference for recent literature, again affirming applicability, e.g., the article can be applied to the current context. Similarly, local articles within Australasia were well-represented, again demonstrating a preference for applicability. Convenience also figured prominently: articles tended to be those where the course participants could access the full-text immediately, at no extra cost. This is to be understood in terms of the short timescale available in the constraints of the course.

No single checklist was appropriate to the needs of all the library and information practitioners participating in the course. The wide range of questions was reflected in a correspondingly wide range of checklists used. A key consideration in selecting a checklist was

relevance to the article, which participants identified as their main reason for selecting the checklist. The LIS professionals studied proved themselves to be resourceful, flexible, and adaptable, in editing existing checklists to suit their needs, or sourcing their own checklists in addition to those suggested by the course team. This is an important skill to have when appraising the evidence.

### Limitations of the study

As stated, the study was a “small-scale” study of a specific group of LIS practitioners, and generalizations are not possible. Ideally, such a study would capture a representative sample of questions asked by library and information practitioners. Participants in the FOLIOz course were self-selecting, indicating at least that they possessed a motivation for trialling the steps of evidence based practice and may well have already had an issue in mind to work with during the course. The political, economic, social and technological context of Australasia at the time of the study will likely have shaped pervasive themes encountered within and across sectors. Nevertheless, an increasingly global economy, common flows of professional knowledge across boundaries, and, above all, a shared evidence base are reasons to expect the presence of common concerns engaging the profession more widely.

Furthermore, questions were identified, or even generated, in response to a specific educational task instruction. We cannot ascertain whether an individual participant selected their question because of its priority for that participant or because of its viability for subsequent stages of the process. Such uncertainty is shared with other educational assignments where integrity in pursuing genuine questions may be challenged by a desire to perform well in the assessment. It would be particularly interesting to examine the frequency with which participants changed their original question by the time they had to complete their subsequent

tasks – although in fairness, some participants did qualitatively describe this in their portfolio.

Selection of articles may also be determined by factors other than their genuine suitability for addressing the original “burning question.” For example, under time pressures a course participant may settle for an article that superficially meets the question topic but which may not represent the best available article or the best answer to the question. Indeed, prescribed evidence based practice procedures such as working down a hierarchy of evidence until one finds the highest study type relating to the question may similarly be compromised by time pressures. A possibility even exists, although more likely in a credit-bearing rather than vocational course, of selecting a suitable article for appraisal and then working backwards to generate an appropriate question.

Ideally, a future study would explore the progress of EBLIP questions, not simply as far as a *potential* answer, as in this case, but in reaching an actual resolution of the originating problem. Nevertheless, this study advances understanding of the links between question generation and the subsequent stages of the EBLIP process: For example, how an initial question is translated into an information need and the extent to which that information need is subsequently met by a retrieved article. We can similarly identify the extent to which the type and study design of the identified article is accommodated by the available checklists, whether generic or library-specific. The study also alerts us to some of the difficulties encountered in identifying or obtaining a relevant article and in selecting and locating an appropriate checklist. In reality, however, as the EBLIP process was undertaken in an educational situation, it is likely to be extensively “sanitized.” Although course participants are encouraged to be reflective, they will not necessarily describe “false starts,” in formulating and then changing their question, or “false hits,” in identifying an article that subsequently fails to address their question. It

would be interesting for future research to investigate the same process in a practical rather than theoretical context in order to draw comparisons and contrasts.

## Conclusions

This study demonstrates the ask, acquire, and appraise components of the EBLIP process for a self-selecting group of library and information professionals working in Australia and New Zealand, by presenting the five inter-linked aspects of the question answering process. It provides a snapshot of the variety of challenges the LIS profession faces both day-to-day and from a future planning perspective. It has built on previous research, by analyzing EBLIP questions by domain and identifying that the area of management in LIS is still a key concern. There is no link between LIS sector and EBLIP domain; themes are cross-cutting across the domains. The recurrent themes of the EBLIP questions are efficiency, innovation, and service improvement. Within the theme of efficiency, proving this to justify support for library services is important. In the analysis of articles and checklists, the course participants demonstrated a preference for literature and checklists originating from within the LIS field, as opposed to seeking transferable research from other disciplines. The articles chosen were mostly surveys or case studies, but this is to be expected as it is characteristic of the LIS literature.

The study found that convenience and applicability are key issues for LIS professionals wanting to employ EBLIP. In terms of article selection, LIS domain, locality, and currency were key determinants. Affiliation of the article author was also a deciding factor. Positive elements of checklists were noted as domain (again demonstrating a need for direct applicability), clear and logical structure, the existence of screening questions, and the presence of a section on applicability. There is an ongoing need for the library profession to explore these areas, particularly in conducting

research with rigorous study design where appropriate. In the short term, there could also be some mileage in demonstrating how generic checklists and research in other areas could be adapted to the EBLIP process.

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