

Evidence-Based Librarianship: A Case Study of a Print Resource

Cancellation Project

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Library using Evidence Based Librarianship Principles

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Introduction

This article sets out the background, operation, challenges and opportunities entailed in providing access to Management Information System (MIS) data to the subject librarians to enable accurate profiling of print resource usage in a time of severe financial cutbacks in the Library of University College Dublin (UCD), Ireland's largest university

¹. Evidence Based Librarianship (EBL) provided the framework within which the Library could make these hard decisions as well as providing an iterative process within which decisions could be critiqued, stress tested and ultimately accepted. As the literature shows, flatter, team based organisational structures can be linked to successful implementation of EBL processes and a discussion of a serials review between Jan 2009-May 2009 using EBL principles is provided to illustrate the link between EBL and active, effective use of management data².

Evidence Based Librarianship: a review

Evidence based librarianship provides a context within which to formulate questions which require the gathering of evidence in order to successfully answer the question posed. It is praxis-orientated and provides a practical application of the librarian's knowledge of the decisions making process to facilitate and drive service development. Most definitions of evidence-based librarianship in the professional literature focus on a specifically investigative model that foregrounds a classical scientific method: data is gathered from particular sources, a viable model is developed based upon the available data, and decisions or actions are made on the basis of the data-driven model. Booth draws attention to more rigorously, structured forms

of data used to make decisions through evidence-based librarianship³. This evidence though is always tempered by the needs and preferences of users and is aimed at clarifying professional librarian judgements⁴. Kougiannakis & Crumley describe a three part approach where questions are formulated, evidence is gathered to answer the questions and the resulting knowledge is applied to actual library practice⁵.

Data used to support evidence-based librarianship is often linked to advances in library automation and the resulting increase in available forms of evidence produced by such systems. However, despite such increases in available data, identifying what were the most appropriate data and how to use them still proved problematic⁶. Booth maintains that evidence-based librarianship “includes both the systems used to deliver the information and the services (i.e. staff and processes) that provide it”⁷. Gumilar & Johnson warn that management information data only proves effective “if people look upon MIS as an integral part of the framework of management in the academic library and not as a peripheral system which has been installed for the benefit of an individual or a single department”⁸. In the context of organizational change, Lakos describes collecting and analyzing data as crucial to the process of delivering services to the library customer base⁹. Baughman also writes, “Teams allow libraries to involve employees in the full spectrum of work processes from conceptualization, goal creation, design, implementation, and evaluation. Other advantages of teams focus on empowerment in the decision-making process...”¹⁰ Other research suggests that flexibility of both work practices and staff allow for better decision making across the organisation¹¹. Indeed data produced by management information systems and effectively used by librarians can be seen to directly influence the decision making process in the context of evidence based librarianship. Gulimar and Johnson describe decision-making as “the conversion of information into action”¹². The factors contributing towards the value of management information include information content, information form and presentation, and timing of presentation¹³. Information can be processed in various ways to meet different information needs and a variety of reports produced to meet those needs¹⁴. In summary, evidence based librarianship, as an approach in an academic library, offers the opportunity to:

- use research gathered from external and internal sources to support decisions
- addresses issues relating to a dearth or excess of information through evaluative processes

- quantify the benefits of library services, as EBL is an outcome-based practice.

The literature, specifically Eldredge, summarily situates evidence based librarianship in the realm of research, placing a decided emphasis, however, in its application to everyday problems and issues and this makes it very pertinent to resource review in a time of financial cutbacks¹⁵.

Data Gathering in the UCD Libraries

Arguably, any data supporting evidence-based librarianship is subject both to the systems storing the data and the methods employed for extracting the data from the systems. Previous to the academic year 2008-2009, the UCD Library provided MIS data from a vertically oriented model that relied on a small number of staff requesting and extracting information from the systems. Specifically, the Systems Librarian acted as a conduit for all requests for data from the Library Management System¹⁶ (using vendor supplied scripts and reports) and Talis Decisions, the proprietary system used to extract management data. Such a model makes a tacit assumption that the person responsible for running the systems (i.e. the Systems Librarian, traditionally located in an operational unit) is best situated to formulate and extract data required for service development within the Library. Such a vertically-oriented system also risks overlooking contributions from other staff responsible for managing, running and developing the service from the public service perspective.

The types of reports and data that may be extracted are also subject to the overall design of the Talis' LMS and accordingly, staff expectations must be managed as to what data can and cannot be extracted. In some occasions, data that cannot be extracted via the LMS or Talis Decisions processes (for instance, data based on specific MARC fields) is extracted directly from the LMS database via custom Perl scripts and SQL queries. Such data extraction involves a considerable amount of database expertise. This practice represented a major failing of the current method of data collection as the reports' efficacy relied on the liaison librarians requesting the relevant information – as many liaison librarians were not familiar with the background workings of Talis, the queries often had to be redone as the resulting Talis Decisions reports did not yield the relevant information based on the criteria supplied. Lastly, reliance on a vertically-oriented model risks producing MIS data for evidence-based scenarios under ad-hoc or a deadline driven

basis only. If data is produced under such circumstances, its last-minute, as-required, details might not support hypotheses for evidence-based research. Funnelling queries through a small pool of staff, as tends to happen in the vertically-oriented MIS model, establishes a limit on time allocated towards such work.

A recent organisational realignment within the UCD Library inserted another layer of operational managers, known as Deputy Heads, into a number of Library work areas. This realignment provided an opportunity to review the use of management data as a driver of service improvement and change. The Deputy Heads work closely with the managers of Library operational units to standardise operations and systems and improve decision making and part of this was the creation (in some cases) and maintenance of systems and processes aimed at providing point of need data to the relevant staff. A coordinated training programme on the use of Talis Decisions was offered to relevant library staff to ensure that management data could be generated in a timely fashion. Talis delivered on-site training and provided full access to the training modules.

Within the Humanities and Social Science team, a Deputy Head and paraprofessional staff supervisor (known as a Senior Library Assistant) were trained with the brief to roll out the training to other team members. The Senior Library Assistant's knowledge of systems and standards currently in use greatly enhanced the ability to extract the relevant data from Talis Decisions, and these skills were heavily used during a subsequent Library-wide subscription review. The Deputy Heads were to co-ordinate the creation and delivery of reports to relevant librarians by ascertaining exact requirements of the liaison librarians, negotiating a deadline and then delegating report creation to the relevant staff member.

Evidence based librarianship in action: Subscription review

During 2008, a financial crisis resulted in the Irish University sector struggling with deficits and mounting costs¹⁷. On top of the national economic crisis, the spiralling costs of subscriptions and the number of resources reliant on a special, government funding stream known as "IReL"¹⁸ meant that the resource budgets had to be aggressively trimmed in a very short period of time. A method of transparently identifying titles for cancellation had to be devised which involved our academic colleagues but also allowed the library to make key, value for money decisions based on getting maximum amount of access for maximum number of people. Using the

evidence based librarianship framework, the question that drove the Library was therefore “what would assist the academics in making informed cancellation decisions?” A number of challenges faced the Library in making these decisions:

- How to manage academic perception of the library services during cancellation
- How to promote existing resources as alternatives during this period
- How to provide key information which will inform decision making to the academics in a readable and timely fashion
- How to identify what information to provide?

Within the Library itself, the Information Resources Management unit (managing acquisitions, periodicals, ebooks management, resource description, subscriptions and invoice management), Academic Services (managing liaison, information skills training and collection development) and Library IT (providing Systems support) had to co-operate successfully to ensure that accurate listings of subscriptions and resources were quickly available to the librarians on a fund by fund basis for circulation to relevant academic contacts within the University.

The Approach to Cancellation

Based on the drivers identified through the evidence based approach, the following method was adopted, focusing on three primary factors, each consisting of multiple elements:

1. Extract relevant data	2. Identify key, school-specific data	3. Sell it to the academics via:
a. MIS reports listing journals by fund via Talis Decisions using trained library staff	a. Impact factor ratings by subject (ISI Web of Knowledge)	a. Consistent message
b. SFX (Ex Libris ejournals management product) searching to identify eversions of existing print subscriptions	b. Business School:– Equis Business Schools Libraries – comparisons of journal resources of the other business schools accredited by Equis	b. Clear subscriptions listings
c. Remove duplication from subscriptions by cancelling titles which		c. Support from School heads

have a print and electronic version		
d. Remaining titles to form basis of further cut to the value of 10% of each fund's total		d. Attendance by Library unit head at School meetings
e. Calculations to identify how much a 10% cut would remove from each fund		e. Address individual concerns
f. Reformat information into easy-to-read, jargon free spreadsheets for distribution to School academics		

Table 1 –Approach to cancellation

D3		4136							
	A	B	C	D	E	F	G	H	I
1	Rankings by impact factor	Abbreviated Journal Title	Impact	Total Cites	Immediacy	Articles	Cited	Print in UCD Lib	Electronic UCD Lib
2		<i>(linked to journal information)</i>	Factor		Index		Half-life		
3	1	HARVARD LAW REVIEW	5.858	4136				Current	Academic Search Premier, Business Source Complete, General Business File, Open J-Gate, & LexisNexis Butterworths
4	2	COLUMBIA LAW REVIEW	3.363	2447	0.919	37	>10.0	Current	LexisNexis Butterworths, Academic Search Premier, & Business Source Complete
									Wilson OmniFile, Academic Search Premier, LexisNexis

Figure 1. Overview of Information Compiled and Provided to Schools¹⁹

As this information had to be drawn down for 21 schools across the Humanities and Social Sciences Schools (business and law represents only 2 of the 21 schools), the requirement for access to MIS data becomes clear and as School of Law's Library Liaison Officer, and PhD Director in an email to the authors specifically says:

“Having objective data presented by expert librarians allowed me as library officer to ensure that the input of my colleagues in the process was governed by data and information inasmuch as possible so that we could make wise decisions that would have the least impact possible on both the research and pedagogical agendas of the School.”

Benefits of increased access to MIS data

A variety of cogent benefits resulted from the increased distribution of Library MIS data. The sections below detail these benefits.

Devolving workloads and standardisation

This devolution of responsibility from the Systems Librarian to the academic services team has meant that the liaison librarians can interact with Talis Decisions and exact report needs can be ascertained based on the liaison librarians requirements. The fact that the team handling the generation of these reports is based in the same team as the liaison librarian makes ascertaining exact report criteria far easier. Standardisation of reporting (which previously had not been done) has also become an achievable goal as each report can be changed to fit different class mark ranges. As School annual reports are currently also being produced, it is hoped that a standardised dataset of information and statistics, derived from Talis Decisions, will be produced for all Schools within the Humanities, Social Science, Business and law units, which will provide usage data on collections and assist with identifying future areas for development based on School research and teaching needs.

Developing a cross library team and increasing knowledge of LMS

The co-ordinated and streamlined use of Talis Decisions reports seeks to “increase the proportion of more rigorous applied research... so the results can be available for making

informed decisions.”²⁰ The need for data management and analysis skills requires support and involvement from across the library and, in common with many public sector areas, the realisation that skills may lie across the team, rather than at a particular grade, meant that the involvement of the para-professionals was both necessary and organisationally desirable²¹. Training on Talis Decisions allowed the skills to be cascaded throughout the team to staff with the interest and capabilities to perform effectively. By spreading the knowledge throughout the team to facilitate quick turnaround of information requests, peer support for staff involved in this work was provided and queries could be resolved quickly. Drawing on the knowledge of the staff intimately involved in the service, means that the relevant data will be pinpointed more accurately and the reports will reflect the key service drivers. The very fact that relevant staff were often bypassed in formulating queries, means that, under the previous model, the data is potentially incomplete. Particularly in the case of Talis Decisions, which utilises a graphical interface displaying data fields available for queries, paraprofessional staff, as well as professionals, are often best positioned to make use of the data. Additionally, given long-term employment and position mobility, staff that have served in a variety of functional units often have a deep understanding of how data produced by one area affects another area. For example, staff with significant cataloguing experience whose current position is within an academic services or circulation unit might be able to formulate ways to extract patron data using bibliographic data (circulation by class mark ranges, etc.). The graphical interface of Talis Decisions means that staff members do not have to be expert in the mechanics of constructing queries (SQL, etc.) and may formulate queries on their own behalf as a result of a particular service initiative or development requiring statistical data, rather than relying on systems’ experts to extract data. Due to increased collaboration and trouble shooting, closer co-operation between the liaison staff, systems librarian and the acquisitions and cataloguing staff developed naturally thereby fostering improved relationships between the different work areas of the Library.

Cementing Academic Partnerships

As the academic’s quote above shows, the involvement of the School was required and appreciated. All schools were struggling under the same financial pressures and (with the exception of a small number of academics), most appreciated the detailed information, tailored to their school needs, provided to them at point of need by their support librarians. This has had a considerable incidental effect as the knowledge that such detailed data was available to

academics meant that the Library was able to supply them with collection data relating to book use and collection size. The Library's commitment to information provision for this exercise can be best summed up by the School of Law's Library Liaison Officer in an email to authors:

"As library liaison officer in a time of extreme economic stress when decisions as to cutting costs in our library budget the input of the librarians was invaluable to me. The librarians presented data for the journals that we subscribed to as well as indicating where we had de facto duplicate subscriptions because we paid for hard copy and online versions of certain journals. The librarians then followed this up by attending at a School meeting where the views of academic members of the School could be countered by hard data. This kind of information-based input by the librarians was extremely important. The subject librarians have and had no agenda in this painful process: they had no subject areas to protect or sentimental investment in certain titles. They simply had to affect a cut in costs and preferred to do in full consultation with us as a School so that we could control where those costs were felt. Having objective data presented by expert librarians allowed me as library officer to ensure that the input of my colleagues in the process was governed by data and information inasmuch as possible so that we could make wise decisions that would have the least impact possible on both the research and pedagogical agendas of the School."

Socialising Knowledge Management

Relying on the advice and subject matter expertise of the staff responsible for producing data used in MIS queries both increases the training opportunities for staff and provides a number of ancillary benefits. For many of the staff involved in the coordinated MIS effort this meant those most familiar with the data were given direct access to MIS functionality. The training provided a sense of ownership by extending involvement with the data from day-to-day operations to more management-oriented administrative functions. Staff involved with the new MIS model had the opportunity to see data in its full "life-cycle" - from its inception at a circulation desk from patron interactions to its influence on significant decisions. Also, educating staff in the use of new systems such as Talis Decisions assists in raising skill levels.

Conclusion

The access to better MIS data meant that each School received a full picture regarding resource use. Increased access entailed a number of practical benefits, including a listing of items on the

open shelves in different loan categories and with each item's borrowing/circulation data. Such lists facilitated stock maintenance and detailed weeding of class mark ranges, systematic moving of stock between loan collections based on usage, and identification of items suitable for disposal or move to the Library Store. Additionally, journal spending was rationalised and itemised title matched by corresponding work on electronic coverage of each print title. This information was then brought to school meetings by the liaison and department head or deputy and used to reinforce arguments for retention or cancellation of individual journal titles in particular. Older items could be pinpointed and removed to Special Collections if they met the criteria. Relevant data was used in School Quality reviews and illustrated the strengths of the School's research and teaching activities, as evidenced by the support provided by the library. Finally, the data was used in accreditation processes to provide comparative figures on funding sources.

Within the specific Irish academic library context described previously, such a fully informed view of the many uses of data promotes acceptance among staff of the aims of evidence-based librarianship. It fosters a sense of investment not only in the processes of producing data (i.e., one's day-to-day tasks) but also final dispositions of data as library "evidence." It also works to provide acceptance of decisions made in the library and can assist in flattening the library structure. If a paraprofessional at an information desk produces a detailed Talis Decisions query that is then used to support an important management decision, the investment in and commitment to that decision is more effective. Deployed to the staff who have the best knowledge of the service, MIS data becomes a powerful yet simple tool in the development of the entire library service.

Notes and References

1 Known as liaison librarians within UCD Library, these librarians have responsibility for information skills delivery, collection development and resource promotion/ use.

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- 6 S. Hiller and J. Self, "From measurement to management: Using data wisely for planning and decision-making," *Trends* 53, no. 1 (2004): 129.
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- 12 Gumilar and Johnson, "Management information systems in some academic libraries in Britain."
- 13 Ibid.
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15 J. D Eldredge, "Evidence-based librarianship: an overview," *Bulletin of the Medical Library Association* 88, no. 4 (2000): 289.

16 Also known as an Integrated Library System in US parlance.

17 John Walshe, "Colleges 'face closure' if funding is not increased," *Irish Independent*, April 16, 2010, sec. National News.

18 Irel stands for Irish Electronic Research Library, is jointly funded by a research foundation called Science Foundation Ireland and the Irish government and is designed to fund the purchase of key resources and provide them to Irish universities see www.irelibrary.ie/

19 The layout and information in this figure was originally derived from ISI's Journal Citation Reports product.

20 E. Connor, *Evidence-based librarianship: Case studies and active learning exercises* (Chandos Pub, 2007).

21 Anat Arkin, "Credit to the nation.," *People Management* 14, no. 14 (July 10, 2008): 28-31.