

CHAPTER 13

Evidence-based practice: Information professionals' experience of information literacy in the workplace

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Evidence-based practice is founded on the premise that professional 'practice should be based on up-to-date, valid and reliable research' (Brice & Hill 2004, p. 13). Evidence-based practice is increasingly being recognized as an important issue in a range of professional contexts, including education (Trinder & Reynolds 2000), occupational therapy (Dysart & Tomlin 2002), nursing (Brown 2009) and librarianship (Booth & Brice 2004). Many of these professions have observed a relationship or interface between evidence-based practice and information literacy.

Information literacy has been conceived to be 'part of' (Pravikoff 2003), a 'foundation for' (Jacobs 2003), or even a 'prerequisite to' (Shorten, Wallace & Crookes 2001) evidence-based practice. In the context of nursing, Jacobs noted that 'evidence-based practice hinges on the ability to identify, obtain and evaluate information which comes in many different forms and formats' (Jacobs 2003, p. 322). A 2006 paper by Nail-Chiwetalu and Ratner proposed the existence of an even stronger connection between the two concepts when they provided examples of how the steps of evidence-based medicine, as articulated by David Sackett (2000), overlap almost exactly with the five standards of the Association of College and Research Libraries' *Information Literacy Competency Standards for Higher Education* (ACRL 2004). What then *is* the relationship between evidence-based practice and information literacy?

In 2005, Annemaree Lloyd noted that 'our understanding of information literacy in the workplace context is still emerging' (Lloyd 2005, p. 234). This chapter presents the findings of preliminary research into evidence-based practice, which sought to explore how this concept is experienced among one group of professionals—librarians. Using a phenomenographic approach, the research aimed to determine variations in how library and information professionals are experiencing evidence-

based practice as part of their work practices. The findings of the research provide a basis for arguing that evidence-based practice represents the professional's enactment of information literacy in the workplace.

The chapter begins with a discussion on the two key concepts. It provides an overview of evidence-based practice and its growing application in many disciplines and then establishes the information literacy framework that informs discussion in this chapter. As it is beyond the scope of the chapter to provide a detailed and exhaustive discussion on the two concepts, only a brief introduction is provided to set the scene for the research. The chapter concludes with a detailed description of the research study and a discussion of key findings as they relate to articulating a relationship between evidence-based practice and information literacy.

Key concepts

Evidence-based practice

Evidence-based practice has risen to prominence in the last twenty years. It is derived from the domain of evidence-based medicine, which has been described as 'an approach to decision making in which the clinician uses the best evidence available in consultation with a patient to decide upon the option which suits the patient best' (Gray 2001, p. 17). Many other disciplines have also adopted the 'evidence-based' tag, including health care, management, executive coaching, career development, public policy, education and librarianship.

The arguments for evidence-based practice within professional practice have been widely discussed in the literature of many disciplines. Supporters and advocates of evidence-based practice claim that employing this approach results in the best practice and the best use of resources. Lowe (cited in Williamson 2002) proposed that research allowed professionals to add value to their work practices and that the use of research in practice clearly differentiated between '[those] professionals who maintain the status quo without question and those who strive to develop their work practices through continual evaluation and investigation' (Williamson 2002, p. 12). Ross Harvey built upon this idea by arguing that 'research and professional practice are inextricably linked' and, consequently, that 'research skills are a *prerequisite* [italics added] for those who want to work successfully in information environments' (Harvey 2002, p. xiii). Although Harvey may be referring specifically to the library and information profession, his words are equally applicable to many other professional groups (for example, nursing, management, health care) if they are to function effectively in diverse and changing information environments.

Harvey postulated that research skills represented an 'essential set of tools which enable...workers to become...professionals' (Harvey 2002, p. xiii). He proposed that the 'work of professionals is being transformed' (p. xii), meaning that professionals could not be effective unless they had a working knowledge of research and its many tools and techniques. This view is echoed by Joanne Gard Marshall (2003) who argued that the health and future of any profession depended on the members' ability to evaluate both themselves and their professional practice.

But just as there are as many advocates for evidence-based practice, there are an equal number of challengers. Greenhalgh (2002, p. 396) noted that evidence-based practice 'has drawn both passionate criticism and undisguised mirth'. Hunsucker (2007) provides a survey of the literature from a number of fields that have introduced evidence-based practice and has identified several key criticisms for the concept. One of the first points of concern is that there appears to be no evidence that evidence-based practice actually works (Cohen, Stavri & Hersh 2004); existing evidence suggests that evidence-based practice can, in fact, lead to worse professional practice (Learmonth & Harding 2006). Related to this is the issue of 'evidence'. For many professions embracing an evidence-based practice approach, there is a lack of understanding of what is acceptable evidence within their disciplinary context, with qualitative data devalued or even completely rejected in favour of the more 'scientifically sound' quantitative data (Cohen, Stavri & Hersh 2004). For many, evidence-based practice is not about using the best evidence to establish a sounder basis for more effective and efficient practice; it is about establishing and maintaining authority (Hunsucker 2007). Traynor (2002) refers to the 'evangelical' style of the evidence-based practice movement, noting that it does not allow room for alternative viewpoints. Others strongly reject evidence-based practice on the basis that, rather than being a genuine attempt to improve decision-making or service, it is a poorly disguised effort at economic rationalism and is conceptually underdeveloped, over-simplistic and constrains professional autonomy (Hunsucker 2007).

Little is known, however, about how evidence-based practice is understood within professional practice by the professionals engaging in it. This research fills this gap. It explores the way evidence-based practice is experienced or understood by professionals, specifically library and information professionals, within the context of their day-to-day work.

Information literacy

Information literacy has been seen by research and professional communities in varying ways (Bruce 2000). Several library organizations and institutions have developed information literacy standards or frameworks. These include the *Information Literacy Standards for Higher Education* (ACRL 2000); the Australian New Zealand and Institute for Information Literacy (ANZIIL)

Information Literacy Framework (CAUL 2001; Bundy 2004) and the Seven Pillars Information Skills Model developed in the United Kingdom by the Society of College, National and University Libraries (SCONUL 1999). These frameworks and guidelines are based on the view that information literacy is an amalgam of skills, attitudes and knowledge. It is, however, the relational view of information literacy that will inform the work presented here. Over the last ten years, Christine Bruce has been researching and advocating a unique approach to understanding information literacy. The relational approach to information literacy is grounded in the user's perspective and depicts the interaction between users and their surroundings. From this perspective, an information-literate person is one who 'values information and its use, approaches information critically and has developed a personal information style' (Bruce 1997, p. x). Bruce (2008, p. 6) defined information literacy as 'being able to draw upon different ways of experiencing the use of information to *learn* [italics added]'. She proposed that it is the focus on 'learning' that distinguishes information literacy from other related fields of enquiry such as information seeking and use research or information behaviour research (Partridge, Bruce & Tilley 2008). More recently, Bruce (2008) introduced the concept of 'informed learning', which extends further her existing work into information and learning. Defined as 'using information to learn' (Bruce 2008, p. 6), 'informed learning' is based on the idea that information is anything that an individual experiences as informing. Learning is coming to experience the world in new ways. Information practices (that is, the practical processes and contexts within which information is used) are employed by individuals to use information. Information literacy is, therefore, being able to draw upon different ways of experiencing the use of information to learn.

Grounded in this paradigm, an argument could be made that evidence-based practice is a 'vehicle for informed learning' (Bruce 2008, p. 98). It reveals how information is being used by professionals to learn in their professional life. The research presented in this chapter explores the relationship between evidence-based practice and information literacy by investigating how evidence-based practice is experienced by library and information professionals in their daily work practices.

The research project

Aim

The aim of the research project was to explore the various ways library and information practitioners experience and conceive evidence-based practice.

Research approach: Phenomenography

Phenomenography is a qualitative and interpretive research approach that explores the different ways that people experience and conceptualize a given phenomenon (Marton & Booth 1997). The phenomenographic approach arose out of educational research carried out in Sweden in the 1960s and 1970s that sought to view and understand the world from the perspective of the student.

There are a number of fundamental principles underlying the phenomenographic approach. First, phenomenography is grounded in the premise that the person and the phenomenon that person is experiencing are connected in a relationship (Marton & Booth 1997). A phenomenographic study will, therefore, focus neither on the person per se nor on the phenomenon, but on the relationship between these two; that is, it focuses on understanding the varying experiences that people have of the phenomenon. It is for this reason that the approach is sometimes referred to as a relational approach.

Furthermore, phenomenography is based on a second-order perspective rather than a first-order perspective (Marton & Booth 1997). Rather than making bold statements about the world, phenomenographic researchers attempt to make statements about the way others experience their world (Cope 1997, p. 77; Marton 1981). For instance, in the context of the current study, rather than asking 'what is evidence-based practice?' (first-order perspective), the study asks 'how do *library and information science practitioners experience evidence-based practice?*' (second-order perspective). A major assumption in phenomenography, then, is that people differ as to how they experience the world (or more specifically a given phenomenon in their world) and that these differences can be described and communicated by them and understood by others (Marton & Booth 1997). Phenomenography is a descriptive approach to looking at and describing in different categories the ways of experiencing the phenomena being studied (Edwards 2006).

Phenomenography is also grounded in the premise that the number of critically or qualitatively different ways in which people experience a phenomenon is limited. The goal of a phenomenographic study is, therefore, to reveal the finite range of qualitatively different ways in which a group of people experience a phenomenon at a given moment in time. A further principle of phenomenography is that it is the collective experience of the phenomenon that is the focus, not the individual's experience (Marton & Booth 1997).

Participants

As this is a study exploring the experiences of library and information science practitioners in regards to evidence-based practice, it was important that the

participants in the study had experiences of evidence-based practice that were as rich and diverse as possible. This would help demonstrate the range of views and experiences that exist about evidence-based practice. It is important to note that diversity refers to the diversity of experiences among the participants and not the diversity of a single participant's experiences. As noted by Ashworth and Lucas, the 'selection of participants should avoid presupposition about the nature of the phenomenon or the nature of the conceptions held by particular "types" of individuals while observing common-sense precautions about maintaining "variety" of experience' (Ashworth & Lucas 2000, p. 300).

Nine subjects participated in the study. All were professional librarians with industry experience ranging from ten to twenty-eight years (18.5 years average). Candidates' age range was 36 to 61 years. All library sectors (academic, public, school and special libraries) were represented in the sample. Only one of the participants was male. Participants were Queensland residents from metropolitan and regional centres. Two criteria were used in recruiting study participants: experience with evidence-based practice; and accessibility to participate in the study. A combined convenience and purposive sampling approach was selected as the most effective option for recruiting study participants. The researchers were all active members of the Queensland library and information science community and, as such, they drew upon their networks to recruit study participants.

Data collection

Semi-structured interviews are the most commonly used data-collection technique in phenomenographic studies. Ashworth and Lucas (2000) note that, in undertaking phenomenographic interviews, the researcher must 'bracket' or set aside his or her assumptions and theories and focus instead on the research participants' points of view and their unique lived experience. If this does not occur, the description of the participants' experience and the overall outcomes of the research will be unsound.

The goal of the interviews in the current study was to understand the variations in each participant's experience of evidence-based practice. One of the first challenges in developing the data-collection approach for the current study was in deciding how to introduce what the interview was 'about' without unduly influencing the participants' conceptions or experiences of the topic. Evidence-based practice is a very specific term and one that potentially few library and information science practitioners would be familiar with, given that it has only become a concept of discourse in the mainstream library and information science professional literature within the last five to ten years. A decision was made not to use the phrase 'evidence-based practice'. Instead, phrases such as 'using research', or 'undertaking research' within the work context or in professional practice were employed. The authors acknowledge that the concepts of 'research' and 'evidence-based practice' are not synonymous; however, it was crucial to find a clear way to

communicate the topic so that the 'everyday' library and information science practitioner could engage with it. Ashworth and Lucas note that 'the researcher and the researched must begin with some kind of (superficially) shared topic, verbalised in terms which they both recognise as meaningful' (Ashworth & Lucas 2000, p. 299).

A pilot study was conducted, which allowed testing of the interview questions, as well as interviewing style and approach. There were no changes to the data-collection instrument as a result of the pilot study. One researcher conducted all the interviews. This helped to reduce interviewer bias and to limit variation in interview technique.

The general aim in the interviews was to see through the participants' eyes by having them explain their experiences. Open-ended questions were used to orient the participant to the phenomenon being examined. Unstructured follow-up probes were used to further explore points as they arose during the interview. Every effort was made to create a comfortable and non-threatening approach. The interviews were conducted in an emphatic and conversational style (Ashworth & Lucas 2000).

As well as responding verbally to questions, participants were invited to write and draw about their experience or conceptions of the phenomenon. This approach helped to put the participant at ease and allowed them time to begin to reflect about their experiences. It also allowed participants to use different channels of communication to stimulate their thinking. Participants were asked to explain what they had drawn or written, which enabled the researcher to probe further to attempt to understand the experience from the participants' perspective.

Two kinds of data were made available through the interview questions: reflected understandings; and reconstructions of experiences. The interviews were thirty to sixty minutes in duration and audiotaped. Full ethics clearance was obtained from the Queensland University of Technology Ethics Committee.

The final interview guide used was:

1. Describe some time recently when you have felt you needed to undertake research as means, or a way, to solve a problem in the workplace. [Pen and paper were provided for the participant to make notes]. Can you describe/explain what you have written?
2. Please draw a picture that explains your experience of using research (your own or others) as part of your professional practice [pen and paper provided]. Can you describe/explain what you have drawn?
3. If you came to work one day and found a problem that you need to solve, or a decision you had to make, how you would go about dealing with it?

Analysis

The aim of a phenomenographic study is to describe and organize the various ways of experiencing a phenomenon by a group of people into a limited number of categories. All categories can be described in the way in which they portray or reveal a number of common aspects of the phenomenon, called 'dimensions of variation'. Each category, therefore, represents a particular 'awareness structure' that is constituted by the dimensions.

Phenomenographers themselves were originally influenced by the work of Gurwitsch (1964). Gurwitsch devised the idea of representing fields of consciousness to describe what individuals are aware of and how they are aware. One phenomenographer (Booth 1992) borrowed this idea and expanded upon it in her work on conceptions and included the following illustration (Figure 13.1) in her work (Booth 1992, p. 266).

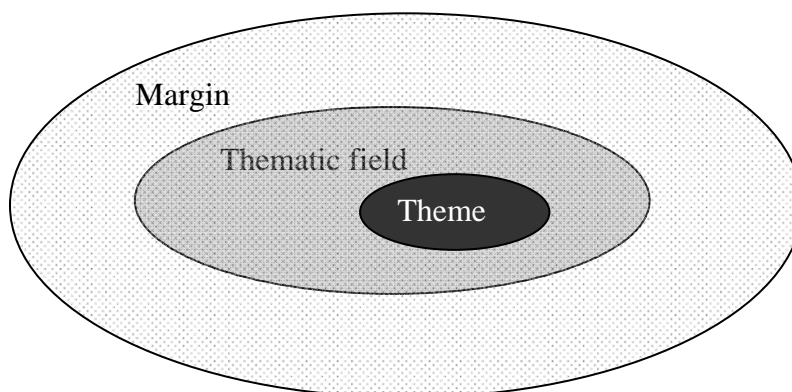


Figure 13.1: Gurwitsch's structure of consciousness, as depicted by Booth

She described the above figure in terms of the theme being the way an object is perceived. This theme is the central focus of the awareness, at a particular point of time in a person's consciousness (Booth 1992, p. 267). That is, while the object may have many essential aspects or features, it is one aspect of the experience that has drawn the individual's attention. The other aspects of the experience are clearly perceived, but they are not the central focus and are represented in the 'thematic field'. The 'margin' represents the other aspects or features of the experience that may, in fact, be relevant, but they are not perceived to be so from this person's particular point of view (Edwards 2006).

Consequently, some aspects will exist in the awareness structure in one way in one category and in another way in another category. It is important to note that the categories do not represent any one person; rather, they represent the experiences of many people. Therefore, 'individuals are seen as the bearers of different ways of

experiencing a phenomenon...in that sense individual voices are not heard' (Marton & Booth 1997, p. 114). Finally, the set of categories that are formed are arranged into an 'outcome space'. The outcome space shows the relationship between the categories and should help to shed light on the similarities and differences between the categories. Hence, the categories do not have meaning separately; rather, they have meaning when viewed as a related set.

The interview recordings were transcribed verbatim and these transcripts were the primary tool for the analysis of the data. They were de-identified and each participant was given a participant number which was used during the subsequent analysis and presentation of the findings.

The tasks undertaken during phenomenographic data analysis include: becoming familiar with the data; identifying relevant parts of the data; comparing parts of the data to find sources of variation or agreement; grouping similar segments of data; articulating preliminary categories; constructing labels for the categories; and determining the local relationship between the categories (Marton & Booth 1997). The data analysis process undertaken in the current study was an iterative one that was constantly grounded in the interview data. All members of the research team spent time reading and re-reading the complete set of interviews. In reading the transcripts the research team was seeking 'meaning' (how the phenomenon is experienced) and 'structure' (the relationship between different ways of experiencing). The advice of Ashworth and Lucas (2000, p. 298), to concentrate initially on meaning and later move on to structure and subsequently move between the two aspects, was followed. This approach helped the research team not to settle on a specific structure too early.

The analysis process is one of both discovery and construction. Phenomenographic analysis is a 'bottom-up' inductive way of working from the data to the results. Because of this, the categories of description may change several times during the analysis process. It is important, therefore, that the research team keeps an open mind during analysis. This is achieved by the researcher focusing on the interview transcripts as the only source of evidence. It is also important that the researcher focuses on the transcripts and categories as a whole set, rather than on individual transcripts or participants. The research team followed the advice that each category needed to be distinct from the others and that the aim should be to capture collective variation as completely as possible, but parsimoniously (Marton & Booth 1997, p. 125).

Maintaining quality

The question of credibility or maintaining quality in a phenomenographic study focuses on the relationship between the empirical data and the categories for describing the 'ways of experiencing' a certain phenomenon. The research has to show that a chosen way of describing differences and similarities is well supported

by the empirical data. This can be done via excerpts from interviews. It can also be done by providing a precise description of each part of the research process, from outlining the interviews to describing the analysis process and how the conclusions were established. In addition, Sandberg also raised the issue of 'interpretive awareness'. That is, the researcher must 'acknowledge and explicitly deal with and understand his/her subjectivity' (Sandberg 1997, p. 209). Working as a team, the researchers discussed the subjectivity of each team member and hopefully controlled it as much as possible during the research process. The research team sought to describe rather than explain the phenomenon, to treat all participants' experiences as equally important and to remain open to alternative interpretations of the data (Sandberg 1997).

Results

Analysis of the data revealed five categories that capture the different ways library and information professionals experience evidence-based practice.

1. Evidence-based practice is experienced as not relevant.
2. Evidence-based practice is experienced as learning from published research.
3. Evidence-based practice is experienced as service improvement.
4. Evidence-based practice is experienced as a way of being.
5. Evidence-based practice is experienced as a weapon.

Each category is associated with different awareness structures that are differentiated in terms of different foci, meaning and different ways of seeing the following four aspects within the 'dimensions of variation' (explained above):

- Internal environment consisting of (i) work colleagues; and (ii) corporate context
- External environment consisting of (i) other services; and (ii) need for change
- Planning and implementation consisting of (i) how; and (ii) why
- Decision-making

The five categories are described in the tables and text below, with specific reference given to each category's meaning, focus and the four dimensions of variation. The information in the tables represents the authors' summary of the categories and the text provides direct quotes from the interviews to illustrate or support the interpretation and analysis.

Category 1. Evidence-based practice is experienced as not relevant

Meaning: In this category (see figure 13.2) librarians see evidence-based practice as a professional accident that happens by default because they are library and information professionals. They do not have a clear understanding of what it means.

Evidence-based practice is experienced as not relevant			
Meaning		Evidence-based practice is a professional accident that happens by default because I am a library and information professional but I don't know what evidence-based practice is or what it means	
Focus		Doing my job	
Dimensions of variation	Internal environment	Work colleagues	I work alone but use others' expertise when required
		Corporate context	Policy and governing drivers force me to work within corporate parameters rather than library and information science parameters
	External environment	Other services	I consider wider industries other than library and information science and seek external expertise
		Need for change	Reactive if governing body drives direction
	Planning & implementation	How	Through serendipity and experimentation
		When	When directed by others
	Decision-making		No power or influences (worker-bee mentality). I hand evidence over to others to make the final decision.

Figure 13.2: Category 1. Evidence-based practice is experienced as not relevant

Focus: In this category the primary focus is on doing their job.

Int. 2 (p. 10): Using practical experience to carry out your day to day job
(Please note: "Int. 2 (p. 10)" means Interview 2 (page 10 of transcript), etc.)

Dimensions of variation: In this category the practitioners' focus is on their own abilities within their work environment. They use the expertise of others, either from within or external to their organization, only when required. The corporate

context, policy and governing drivers have a strong influence and the practitioner's focus is on working within corporate parameters rather than within a library and information science domain. Evidence is gathered through surveys, by conducting experiments, or even by chance, and only when the practitioner is instructed to gather evidence.

Int. 8 (p. 5): Experimenting as in scientific experiments, or talking or trial and error

In this category, identifying drivers for change is predominantly reactive and it is the parent organization that defines the strategic directions. Decision-making is the sole reason for gathering evidence; the practitioner, however, does not have the power to make the decision. Evidence is handed over to others to make the final decision.

Int. 7 (p. 1): We made, as a group, the senior librarians made recommendations about what we wanted to do, and it was actually people, it was directors and councillors outside of the library service who made that decision.

Category 2. Evidence-based practice is experienced as learning from published research

Meaning: In this category (see figure 13.3) librarians see evidence-based practice as learning from and using published research. It is relying on what has been previously proven to be right.

Focus: In this category the primary focus is on collecting evidence to demonstrate their worth.

Int. 3 (p. 10): Being able to prove what we do in libraries or how it's done in libraries, or why we do things or how we do things, but be able to prove that by either statistics or understanding of what's been done before.

Dimensions of variation: There is a strong awareness in this category of the practitioner's need to continually justify their existence within the workplace and to prove their value to their parent organization. Within the internal environment, the practitioner sees their colleagues as people who require justification of their worth and the practitioner needs approval of their governing bodies and stakeholders before making or implementing any decisions. Beyond the immediate workplace, the focus is primarily on other library and information services with little or no consideration of other industries. Their attitude to change is reactive but responsive to dealing with genuine problems. The application of research leans towards using the output of others found through literature reviews and a reliance on published material rather than conducting their own empirical research.

Int. 10 (p. 5): Have I seen this before? Has it happened before? Do I know of it happening to somebody else even if it hasn't happened to me before? Or is it something completely new?

Evidence-based practice is experienced as learning from published research				
Meaning		Evidence-based practice is learning from and using research. It is relying on what has been proven right.		
Focus		Gathering evidence		
Dimensions of variation	Internal environment	Work colleagues	People I have to justify to	
		Corporate context	Needing approval by governing bodies	
	External environment	Other services	I am focused on other library and information services with little or no consideration of other industries.	
		Need for change	Reactive to support a genuine problem	
	Planning & implementation	How	Tends towards a literature review approach to data gathering	
		When	When directed by others or when I perceive a need	
	Decision-making		If I gather evidence and present it in the right way I might be able to influence the decisions which will be made by others.	

Figure 13.3: Category 2. Evidence-based practice is experienced as learning from published research

Evidence is gathered not only when the practitioner is instructed to but also to scope a perceived need in order to influence the decision-making process. The practitioner is conscious of presenting evidence in ways that might influence the decisions made by those in power, by using of precedents in the literature or other library and information services.

Category 3. Evidence-based practice is experienced as service improvement

Meaning: In this category librarians see evidence-based practice as an activity undertaken in order to improve what they do or what their library offers.

Evidence-based practice is experienced as service improvement			
Meaning		I undertake evidence-based practice in order to improve what I do or what my library and information service offers	
Focus		Best practice	
Dimensions of variation	Internal environment	Work colleagues	We're a team when we are on a project. I am alone apart from that.
		Corporate context	Corporate body drives evidence-based practice
	External environment	Other services	I am focused on benchmarking against library and information services and other industries. Tendency towards wanting to perfect the service, to be the best at what we do.
		Need for change	Proactive to be better, to stay ahead of the game.
	Planning & implementation	How	Best practice project management approach, highly structured strategies
		When	When directed by others or when I perceive a need so that I can stay ahead of the game
	Decision-making		I understand what evidence is needed to influence decision-makers so that decisions are made in my favour.

Figure 13.4: Category 3. Evidence-based practice is experienced as service improvement.

Focus: In this category the practitioner's focus is on identifying, achieving and implementing best practice.

Int. 11 (p. 10): My focus is to provide the best library and information service I can.

Dimensions of variation: The category is driven by a project management approach. Within the internal environment, teamwork is valued when required by project work; however, the practitioner relies on their own strengths and knowledge when working on other non-project tasks. The governing body drives the implementation of evidence-based practice. There is a strong focus on benchmarking against other library and information services and other service industries, with a tendency towards achieving near-perfect levels of client service and customer satisfaction.

Change is embraced proactively as the practitioner strives to stay ahead of technological and other innovations.

Int. 11 (p. 9): I'm always looking for ideas, another way to do things or a better way to do things. I don't like standing still.

Implementation of projects is highly structured with set goals and milestones to monitor achievement. Research is a part of this project management approach and evidence-based practice is applied as required to establish best practice. In this category, the practitioner has a high awareness of how evidence can be used to influence decisions in their favour as part of a continuing improvement approach.

Int. 7 (p. 7): Everything can be labelled and broken up into a workflow or a chart or a system.

Category 4. Evidence-based practice is experienced as a way of being

Meaning: In this category librarians see evidence-based practice as being an integral part of their job which cannot be switched off. They see their job as being evidence-based practice.

Focus: In this category the practitioner's focus is on being their job.

Int. 5 (p. 16): It's very people oriented and my role as a liaison librarian, as soon as I hit anywhere near the campus and I'm identified by somebody, my switch is on and I've got to be this entity and this role and so until I get in my car and close the door and turn on my radio really loud I'm there to receive feedback. There is no switching it off because feedback is directed to me.

Dimensions of variation: In this category, the interviews suggest that the practitioner is team-oriented and heavily reliant on colleagues and peers when engaged in decision-making. The practitioner sees their role as influential and contributes to the strategic direction of the corporate body and stakeholders.

However, their field of interest is restricted internally to their parent organization and there is little or no scanning of the external environment, library and information services or other industries. Within this internal environment, they proactively seek opportunities to improve their services and products by constantly seeking feedback from clients and colleagues.

Int. 11 (p. 12): That to me is more evidence that we've done something constructive together that was worthwhile because the teacher has also valued it.

Evidence-based practice is experienced as a way of being				
Meaning		Evidence-based practice is an integral part of my job. We all do it, none of us can switch it off. My job is evidence-based practice; evidence-based practice is my job.		
Focus		Being my job		
Dimensions of variation	Internal environment	Work colleagues	We're a team and I can't function without them.	
		Corporate context	I influence the strategic direction of my corporate body and stakeholders.	
	External environment	Other services	Some minor scanning of library and information services sector but predominantly internally focussed.	
		Need for change	Proactive to improve the internal environment	
	Planning & implementation	How	Very organic, tends to be unstructured allowing strategies to evolve by accident. I have numerous ideas and rough notes through cultivating relationship and being aware of everybody's needs.	
		When	Constantly	
	Decision-making		I can influence decisions in a variety of ways and will do so through my networks. My conversations are strategic but not necessarily premeditated.	

Figure 13.5: Category 4. Evidence-based practice is experienced as a way of being

The implementation of strategies to take advantage of these opportunities is unstructured and organic, possibly even haphazard, with strategies evolving by accident. Decision-making is based on feelings and hunches rather than evidence.

Relationships are a key factor, with the practitioner constantly gathering evidence to share with colleagues for decision-making as the need arises.

Int. 1 (p.6): Cyclical and organic in the sense that...the way I approach it is possibly a bit scattered, but the knowledge builds on itself. I haven't really thought about research.

Category 5. Evidence-based practice is experienced as a weapon

Meaning: In this category, evidence-based practice is viewed as a tool which is used when the librarian needs to attack or defend their position.

Evidence-based practice is experienced as a weapon				
Meaning		I am forced to use evidence-based practice when pushed into a corner		
Focus		Defending my case		
Dimensions of variation	Internal environment	Work colleagues	Majority rules and my voice is not heard	
		Corporate context	I am constantly fighting to prove my case	
	External environment	Other services	I consider library and information services and wider industries as needed to make my argument	
		Need for change	Resistance to change but I use research to resist change	
	Planning & implementation	How	Semi-structured searching of competitor sites and other online resources. Heavy use of anecdotal evidence and own opinion.	
		When	When a service is being considered by authorities or in order to resist change	
	Decision-making		It is 'us and them'—I am not listened to	

Figure 13.6: Category 5. Evidence-based practice is experienced as a weapon

Focus: In this category, the practitioner's focus is on defending their case.

Int. 8 (p. 2): It was just statistical information to counter the argument that everybody else does it because I didn't feel that that was true.

Dimensions of variation: In this category, the professional is driven to use evidence-based practice as a way of resisting change. Evidence-based practice is viewed negatively, as a tool or weapon that is used only when needed to debate an issue.

Int. 10 (p. 4): I know my manager is really threatened anytime I walk up the back with a journal article going, 'read this it will help you stop reinventing the wheel'.

Research is conducted through anecdotal observation and literature reviews with some consideration of what other competitors are implementing. Evidence is gathered but presented without the conviction that it will convince decision-makers. The practitioner feels disempowered in relation to decision-making with decisions made by others who do not consider the evidence presented.

Int. 6 (p. 13): They're the stakeholders. You're not the ultimate decision-maker in a lot of things.

Discussion

This research lays down the foundation for the first model of evidence-based practice as experienced by professionals—specifically library and information science practitioners. The data has revealed that library and information professionals have five different ways of experiencing evidence-based practice. A closer examination of these five ways gives interesting insights into the relationship between evidence-based practice and the lived or actual experience of information literacy. Each of the different ways is grounded in the 'information practices' employed by library and information professionals to use information. These information practices can be seen in two aspects of the categories—the different kinds of known and available 'information' that can be admitted as 'evidence', and the different kinds of 'processes and contexts' that make up the experience (see Figure 13.7). By exploring more carefully these two aspects, it soon becomes apparent that the five categories represent the qualitatively different ways that the library and information science practitioner 'values information and its use, approaches information critically and has developed a personal information style' (Bruce 1997, p. x). In short, evidence-based practice is 'a vehicle for informed learning' (Bruce 2008, p. 98).

Categories	Information Practices	
Evidence-based practice is experienced as...	Known and available 'information' to be submitted as 'evidence'	Different kinds of 'processes and contexts'
1. ...not relevant	Data gathered via surveys and experiments	Focus is on the practitioner as competent professional and the expertise of others (internal and external to the organization) is used only as a last resort. Focus is on supporting the information needs and decisions of the governing body. Information is gathered only when directed. The practitioner does not use the information to make decisions but hands it over for someone else to do so.
2. ...learning from published research	Published research	No focus beyond the practitioner's own service and there is a strong reliance on literature review approach for obtaining information. Information is gathered when directed or when there is a perceived need. The practitioner does not make the decision per se, but if they present the information in the 'right way' they can influence the decision (that is, sway how the information is used)
3. ...as service improvement	Benchmarking data or standards	Information is gathered in a highly structured project management approach with set goals and milestones. There is a strong focus on scanning and comparing to external agencies and services. Information is gathered when directed to and when they perceived a need. The practitioner knows what information is needed to influence how decisions are made.
4. ...as a way of being	Feedback from clients and colleagues as well as own feelings and hunches	Information gathering and decision-making is collaborative, with strong reliance on relationships with internal colleagues and peers. Information is gathered continuously in an unstructured and organic way with strategies evolving by accident. Practitioner is influential and can contribute to the strategic direction of the governing body.
5. ...as a weapon	Anecdotal evidence and own opinion	There is consultation with other library and information services and other professions and there is a strong reliance on online sources such as web sites for seeking information. Information is gathered only when forced to do so by management or as a means to resist an imposed change. The practitioner feels they are not listened to, and the information gathered will not be considered by the decision-makers and is being gathered as a means of self protection.

Figure 13.7: The information practices of the categories

There is broad variation among the categories as to what constitutes 'appropriate or acceptable' information or evidence. Categories 1, 2 and 3 have a stronger focus on

formal information that is obtained externally, for example, published research, or benchmarking and standards. In contrast, categories 4 and 5 favour more informal information, such as feelings, hunches and anecdotal evidence, as the primary information source.

In addition, each category draws upon very different 'information practices' for gathering and using information to make decisions. Categories 1 and 3 use more formal and structured approaches to obtaining information. Category 1 gathers information via surveys and experiments. The information is gathered only when the practitioner is directed to and is handed over to the decision-maker to critique and use. Category 3 uses a project management approach for obtaining information. Goals are set and milestones used to monitor the information-gathering process. Information is gathered when the practitioner is directed to and when there is a perceived need. The practitioner knows what information to gather to influence the decision-maker.

Online resources are the primary vehicle for finding information in two categories. Category 2 has a literature review approach to information seeking. Databases are used to locate the 'right' information that can be used to influence decision-makers. Information is gathered when the practitioner is directed to and when there is a perceived need. Category 5 uses web sites to locate the information that is needed to support the practitioner's argument or viewpoint. Information is only gathered when the practitioner is forced to defend a position or to resist change and it is assumed that the information is unlikely to be used by the decision-makers.

Information gathering and decision-making in category 4 is highly collaborative, with a strong reliance on relationships with internal colleagues and peers. Information is gathered continuously in an unstructured and organic manner. The practitioner can directly influence decisions.

In addition to giving new insight into the relationship between evidence-based practice and information literacy, the study contributes to the discourse and knowledge on evidence-based practice generally. The research reveals that there is no one way for a professional to experience or engage in evidence-based practice. Instead of defining evidence-based practice as 'an approach to decision making' (Gray 2001), it is perhaps more accurate to describe it as 'an array of approaches'. Further research should be undertaken to establish the effectiveness of each approach in bringing about any real change to the quality of professional practice, decision-making and/or problem-solving. In addition, further studies should determine if the array of approaches identified in the current study with library and information professionals are the same as the approaches used in other professions.

The current research also highlights the breadth and depth of information that can be used as evidence within one profession. Replicating this study in other professions would help to identify the way 'evidence' (or perhaps more accurately

quality evidence) is interpreted across the professions. The research also suggests that the practitioner and the practitioner's environment will also influence what evidence can and should be used within a specific situation or context.

The results lend some support to Hunsucker's (2007) observation that evidence-based practice is about establishing and maintaining control. The five categories reveal that practitioners can be involved in the decision-making process in very different ways. For example, in category 4 the practitioner is an integral part of the decision-making process and can directly influence strategic direction via their evidence. In contrast, category 1 has no, or limited, power or influence in decision-making, with the governing body solely responsible for the critique, interpretation and use of the information in making decisions. Hunsucker's (2007) view that evidence-based practice constrains economic rationalism and professional autonomy is present in category 5. In this category there is an 'us and them' perspective, where the information or evidence is obtained to defend the practitioner's position or resist change. The practitioner is, however, aware that the evidence is not used by the decision-makers. But how much of this is actually about evidence-based practice or about the individual practitioner and their ability to negotiate within their own corporate context? Further work exploring this would be beneficial.

There does not appear to be a relationship or hierarchy among the five identified categories of experience. That is, no category appears to show that awareness of aspects of the experience changes, or develops more, with a person's growing experience of the phenomenon. In many phenomenographic studies hierarchical experiences are evident, but in others, as with this study, they are not interrelated. In phenomenographic terms, each category is valid, reflecting the lens through which some library and information professionals may view the world of evidence-based practice. While it is suspected that, with this phenomenon, the categories are unlikely to be hierarchical in nature, this cannot be confirmed from the findings of this study. Further research and a larger sample are needed to determine whether relationships exist between the categories. The data gathered from participants so far hints that an awareness structure relating to the sharing of research or communication might be teased out, but this will need to be investigated further in a later phase of the study. Future research will also focus on interviews with library and information professionals at senior management levels and with recent entrants to the profession, as they may offer a different diversity of experience with evidence-based practice from the experience of the predominantly middle management participants of the current study.

Conclusion

Evidence-based practice has progressively become an important topic of discussion within a growing number of professions. Analysis of data collected from semi-

structured interviews has revealed five different ways that evidence-based practice can be experienced by library and information professionals. The results of the research provide interesting insights into the relationship between evidence-based practice and the lived or actual experience of information literacy in the workplace. Bruce's (2008) concept of informed learning is based on the premise that information practices are used by individuals (or groups) to bring about learning. As noted earlier, information practices are the practical processes and contexts we engage in to interact with our information environments, and it is in these practices that information literacy finds expression. Information practices can be experienced in different ways. The research presented here suggests that evidence-based practice is an example of a professional information practice that can be experienced in five qualitatively different ways. Therefore it is through evidence-based practice that information literacy within a workplace setting finds expression. It is in this way that evidence-based practice 'is a vehicle for informed learning' (Bruce 2008, p. 98). The research outlined in this chapter therefore offers new insights into the way people use information to learn in the workplace.

The research also contributes to the current discourse on evidence-based practice. The study's findings suggest that evidence-based practice is a complex and multi-dimensional and multi-layered concept. Within the library and information professions, evidence-based practice can perhaps best be viewed as an 'array of approaches' used for decision-making and problem-solving. It can also be said that the practitioner and their environment will influence what approach can and should be used within a specific situation or context. More research is needed to understand more about the impact and effectiveness of these different approaches and to determine whether these approaches are the same for other professions. This in turn would also shed light on whether evidence-based practice is a 'vehicle for informed learning' in the same way in other professions.

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