

The emergence of hybrid professionals: new skills, roles and career options for the information professional

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Introduction

The online networked environment continues to challenge the information profession. Easy access to masses of information via search engines has given business people, students and many others false confidence in their ability to find what they need. Subject librarian posts in universities have been lost as institutions restructure to create 'headroom' and/or focus information support on new priorities. Industrial and commercial libraries have been downsized or outsourced and information services have been shifted offshore, along with call centres, IT and other operations. While these trends are not new, the current economic downturn presents further challenges. Industry experts repeatedly emphasise the need for info pros to add value – to move up the value chain (Foster, 2008) – and to make sure senior managers understand how much value they add (Kennard, 2008). Putting more effort into end-user training is one significant example of a specific service development in this context; being proactive, rather than reactive, is another general response.

Info pros are not the only ones under pressure. Other professions are also being challenged. Research in the 1990s found many professional roles were changing: specialists were being expected to work at higher levels, to get more involved in the business and do more networking within teams; all this requires continual upskilling and means more specialization within an already specialised field. At the same time professionals were increasingly expected to broaden their sphere of operation and develop 'cross-functional skills', to enable them to negotiate and communicate with other professionals and more significantly 'to make decisions outside the immediate confines of their original specialism' (Watkins et al., 1992: 61). Later research confirms this picture, anticipating further blurring of boundaries between professions and 'an increasing requirement for multi-skilled professionals and a growing incidence of multi-disciplinary working' (Cheetham & Chivers, 2005: 278).

A key trend here is that the knowledge economy is driving large parts of the workforce into information-intensive roles and moving other professions closer to our territory. Our own professional body, CILIP (2002: 30), noted this several years ago, observing that 'information management and specialisation is not the exclusive preserve of the information profession', having identified an extended 'knowledge and information specialist community' (2002: 14) where info pros are part of an "information continuum" that includes everyone engaged in managing information. Professional knowledge bases are expanding and new technology is

infiltrating and enriching most if not all professions. Cheetham and Chivers (2005: 279) make this vital point in unambiguous terms:

‘Not only will continuing professional development become vitally important for everyone, but many professions will need the ability to access and utilise stores of dynamic (changing) knowledge and information on a continuous basis. This suggests the need for enhanced skills in the areas of information handling, and both knowledge acquisition and knowledge synthesis/transfer.’

They go on to point out that professionals are therefore faced with not only expansion of their specialist skills and competencies, but also the addition of extra generic attributes, including several central to our own competence and expertise, namely:

- knowledge synthesis and knowledge transfer skills;
- knowledge acquisition and knowledge management (KM) skills;
- information handling skills;
- ICT literacy (and confidence in its exploitation).

A related trend is towards ‘increasing sub-division and specialisation within professions [which] has important implications for what should be included within initial development programmes’ (Cheetham & Chivers, 2005: 280). Info pros have similarly had to develop more specialised roles to make a distinctive business contribution. Examples of new specialisms identified include ‘microspecialties’ within our domain, such as content management, information architecture and competitive intelligence (Lachance, 2004), in addition to, more significantly, the emergence of hybrid professional specialisms, which combine information expertise with extensive in-depth knowledge drawn from one or more other professional disciplines, e.g. the health library manager, the legal info pro and the subject-specialist teacher-librarian.

Research methods and data

This paper draws on a series of research studies conducted/supervised by the author over the last four years into the activities, roles, competencies and development needs of library and info pros, including:

- a review of research and opinion on the roles, competencies and specialisms of library and info pros, supplemented by an analysis of UK and US job advertisements (Corrall, 2005);
- a mainly qualitative study of the roles, competencies and relationships of subject librarians in three disciplines (Hardy, 2005; Hardy & Corrall, 2007);
- a primarily quantitative investigation of the activities, competencies and development needs of academic librarians with teaching roles (Cox, 2007);
- a mixed-methods survey of the education, training and development needs of info pros in law firms (O’Brien, 2007).

The study of subject librarians (Hardy, 2005; Hardy & Corrall, 2007) used a questionnaire to collect data about postholder’s activities, competency requirements, involvement in information literacy and communication with client departments. The questionnaires were distributed electronically as email attachments and most were returned via email, with a few paper

responses. The target population was subject/reference/liaison librarians supporting Chemistry, English and Law. Random sampling was used to identify relevant library postholders in 10 'old' (established pre-1992) and 10 'new' (post-1992) UK universities. The questionnaire generated 32 responses, representing 53% of the 60 contacts approached, achieving a good balance across the different disciplines and institutional types. The design used mainly closed questions (tick boxes and rating scales) to facilitate quick completion and encourage participation, but also allowed respondents to insert answers other than the specified responses and invited additional comments. A literature review informed the question content, particularly in specifying subject-support activities and professional competencies. Responses were analysed using qualitative techniques in an iterative process as the datasets were too small for statistical analysis.

The study of teaching librarians (Cox, 2007) used a questionnaire to collect data about the teaching roles, specialist knowledge, professional development and educational preferences of subject librarians in UK higher education institutions. The questionnaire used the Survey Monkey tool and was administered online to a sample of subject-specialist librarians from 137 institutions, selected systematically from a comprehensive national listing. It generated 82 responses, representing 60% of the institutions targeted. The design again mainly used various types of closed multiple-choice tick-box questions, but also included open questions and comment boxes, enabling participants to expand and explain their responses. Quantitative data were analysed using statistical software (SPSS) and qualitative data were analysed, categorised and sorted using a spreadsheet (Excel). Two electronic interviews with expert practitioners and a review of relevant literature were used to inform the questionnaire design and contextualise the findings.

The study of legal info pros (O'Brien, 2007) also used an online questionnaire to collect data about competency requirements, knowledge needs, development methods, educational preferences and professional relationships, notably with professional support lawyers. It employed a form of purposive sampling, using relevant email lists (BIALL, LIS-LAW and SLA-Europe) to reach the target population. It generated 64 responses and achieved balanced representation in terms of both levels of responsibility (entry-level, mid-grade, senior management) and size of firm. The design again used predominantly closed questions with pre-determined answers to facilitate completion and analysis, but around a quarter of the questions were open and a similar number included comment boxes. Eight semi-structured interviews (six conducted face-to-face and two via telephone) and one focus group were also used to explore key issues in more depth. The quantitative data were analysed using Excel and the qualitative data from the questionnaire and interviews were coded at two levels, with partial and selective transcription as necessary to establish the main categories, reflecting the pragmatic approach of this study. A literature review again informed the questionnaire design and contextualised the findings.

Hybridization of professional specialists

The notion of the 'hybrid manager' gained currency in the late 1980s as commentators recognised a need for people combining knowledge of IT with business acumen to ensure firms made the most of their technology investments. Earl (1989: 205) defines hybrids here as 'people with technical skills able to work in user areas doing a line or functional job, but adept at developing and implementing IT application ideas'. Despite efforts by the British Computer

Society and other IT bodies to meet this need, subsequent research suggested that people with non-technical backgrounds might be more suited for such roles on the basis that in practice it was often easier for managers from other backgrounds to develop adequate technical competence than to find IT professionals with the required interpersonal, managerial and organisational competencies (O'Connor & Smallman, 1995).

In the library world, hybridity became particularly associated with the marrying of print and electronic information resources in the 'hybrid library'. During the 1990s many academic institutions reconfigured their library and IT operations to form large unified information service organisations. Some members of our profession argued that the jobs of information and technology specialists had become so similar that these two professions would merge. Norry (2004) discusses 'hybridization' of staff roles in the UK university library context, identifying new roles spanning or crossing traditional professional boundaries, that were driven by changes in learning and teaching. Describing developments associated with the convergence of IT and information/library support, sometimes extending to media services, she notes 'This results in broader roles, encompassing several job types which were previously undertaken by separate individuals or teams, consequently involving multi-skilling' (Norry, 2004: 60).

Examples of hybridization at Leeds Metropolitan University included Information Officers providing face-to-face support across the full range of IT and information facilities and resources, in addition to a new Online Learning Centre team, led by an Electronic Services Development Manager, whose responsibilities comprised departmental systems, e-services development and delivery, copyright clearance, acquisition and processing of material and projects such as a student information portal and a skills-for-learning website. Norry (2004: 77) reports that hybridization meant that 'all staff had to broaden their skills portfolio', but at Leeds Metropolitan 'the greatest change was felt by those in hybrid roles on support desks, those responsible for managing them, and those whose role changed entirely from computing to information support' (Norry, 2004: 87).

Subsequent developments have shown that the situation is more complex than previously assumed. We have seen continuing convergence of professional roles, both within the information content profession (e.g. librarians, archivists and record managers) and between the content and conduit (technology) specialists. This reflects the more general pattern identified of professional regrouping, continual upskilling and organisational repositioning. Contemporary 'hybrid professionals' typically sit on the boundaries of established professions, occupying the expanded territory representing the overlaps among different domains. These boundary-spanning roles require a wider skillset and broader knowledge base than the hybrid managers of the past: organisational understanding and management abilities must usually be supported by competence in two (or more) distinct, often diverse, specialist fields.

The model underpinning our current research builds on earlier work specifically related to the university sector (Corrall & Lester, 1996) but has evolved to reflect the complexity of a Web2.0 information world characterised by multiple perspectives and an unsettling mix of the private and personal with large-scale and commercial activity (Corrall & Cox, 2008). Figure 1 presents our current model, which differentiates three traditional specialist groups, namely library/information science specialists, IT/media specialists and academic/professional discipline specialists, which can conveniently be labelled 'content', 'conduit' and 'context' specialists respectively. We can then identify three broad categories of emergent hybrid specialists whose

work spans the boundaries between these domains, which in their turn include distinct sub-specialisms:

1. *E-content and digital library specialists*, e.g. digital initiatives developers, digital library project managers, directors of digital collections, electronic resources co-ordinators, heads of e-strategy, intranet/web managers and repository librarians;
2. *Discipline-based information and knowledge specialists*, e.g. data scientists, geographic information systems specialists, health library managers, information literacy co-ordinators, instructional design librarians, know-how managers, law librarians and professional support lawyers;
3. *Context-specific technology and media specialists*, e.g. instructional/learning technologists.

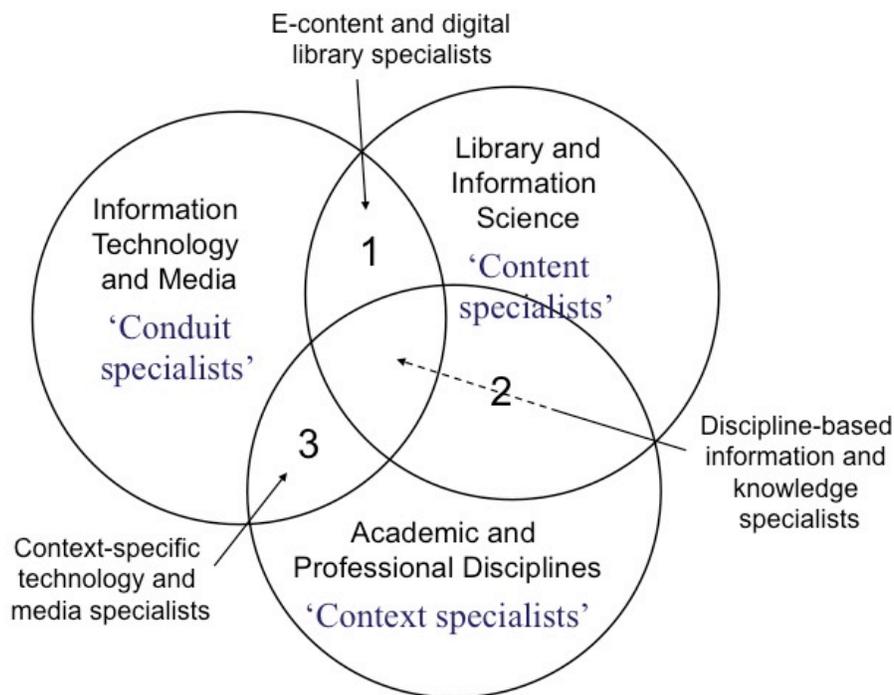


Figure 1. Hybrid information specialisms

Thus, learning technologists draw on the theories and practices of the educational domain, in addition to IT and media competencies, while instructional librarians combine educational competencies with expertise in library and information science. However, this model simplifies the situation, as in practice most roles require some level of competence in all three domains, e.g. Bell and Shank (2004: 374) use the term 'blended librarian' to describe professionals who 'combine the traditional skill set of librarianship with the information technologist's hardware/software skills, and the instructional or educational designer's ability to apply technology appropriately in the teaching-learning process'. The main point here is that roles are increasingly demanding high levels of competence in at least two specialist areas, in addition to an expanded generic skillset.

Maturity of hybrid species

There is a growing body of evidence (in published literature, job advertisements and empirical research) confirming that hybrid professionals have not only arrived, but are now firmly established in the information world. A key feature of these hybrid domains is the different sub-species that have emerged reflecting the backgrounds of postholders who can enter the shared territory from either side of the professional divide. Notable examples include the specialist fields of digital libraries, information literacy, legal know-how and health informatics. While some hybrid information roles have arrived on the scene relatively recently, others have been around for longer and are now comparatively mature specialisms. Indicators of their maturity include the existence of specialist hybrid positions at progressive levels of the organisational hierarchy, from entry level to senior management; the emergence of distinct communities of practice with their own dedicated professional networks and associations or formal bodies to support their work; and the development and accreditation of specialist training and postgraduate education programmes for both new entrants and experienced professionals wanting to enhance their qualifications and skills.

Health informatics

The medical/health library field is an example of a long-established discipline-based information specialism. The US Medical Library Association was founded in 1898 and the UK Health Libraries Group of CILIP can trace its history back to the formal establishment of the Medical Section of the Library Association in 1949. Medical and health librarianship has been joined more recently by the much newer specialism of health informatics, which has evolved over the last 20 years and was defined recently as 'the use of information and ICTs to improve the quality of care and health and well-being of patients, their families and carers, and the general public' (Bath, 2008: 505). The Australian College of Health Informatics and the UK Council for Health Informatics Professions were both founded in 2002, but educational provision in the discipline goes further back, with several courses established around the year 2000 (Murphy, 2006).

Murphy (2006) reports that around 20 graduate-level programmes have been established in the UK and also notes a ten-fold increase in the size of the UK health informatics workforce over a 14-year period, from 2,500 in 1992 to 29,000 in 2006; though she observes that part of this increase comes from a broadening of the specialism, describing it as having become 'very heterogeneous', as it includes both technical information management and technology (IM&T) staff – the largest sub-group – and those responsible for collecting, analysing, coding and disseminating data, information and knowledge, as well as clinicians involved in designing and implementing systems. This heterogeneity is reflected in the backgrounds of students recruited to these specialist programmes, e.g. the University of Sheffield's MSc in Health Informatics by distance learning (founded in 2000) has attracted doctors, nurses, therapists and pharmacists, as well as ICT professionals and library/info pros, from both the National Health Service and academic libraries.

Legal know-how

Law librarianship is another long-established specialism in the information field, which has been professionally organised for more than 100 years, with the American Association of Law Libraries (AALL) dating back to 1906 and the British and Irish Association of Law Librarians (BIALL) formed in 1969. Unlike some sectors, law firm librarians have experienced a rise in status (and pay) as a result of broader roles associated with developments in new technology and KM (Trevelyan, 2004). Law librarians have been joined more recently by a new breed of legal information/knowledge manager, the professional support lawyer (PSL), typically a qualified lawyer who has forsaken a fee-earning role to take on a support role serving a particular specialist area of legal practice.

This new professional support role emerged in the early 1990s, along with the development of 'know-how services' in the sector and is now well-established in all but the smallest law firms, with some firms now employing as many as 50 such specialists, who are gradually establishing their professional identity, for example by creating support networks for sub-specialisms within their work (Hoult, 2003). This group of new information specialists is much more homogenous than the health informatics professionals, but the role is still evolving and its fluid unsettled nature has worried some legal info pros, but been welcomed by others (Barrow, 2005).

Although the development of specialist education has lagged behind specialist practice, tailored programmes are now starting to emerge: the Nottingham Trent University PGDip in Know-How Management for Legal Practice has attracted participants from various professionals backgrounds, including knowledge managers, librarians and support lawyers (Battersby, 2004) and the University of Sheffield MSc in Legal Information Management is due to recruit its first intake in 2009.

Information literacy

Librarians have been involved in educating information users for several decades, particularly in secondary and tertiary education, but their training/teaching role became more significant with the development of end-user access to CD-ROM and online databases in the 1990s. The Library Instruction Round Table of the American Library Association (founded in 1977) provided an early professional focus in this area, but numerous other fora, groups and networks emerged in the 1990s, including the Information Literacy Institute in the US and the SCONUL Task Force on Information Skills and the email list LIS-INFOSKILLS in the UK. Professional interest in information literacy teaching has continued to grow and evidence from job adverts, particularly from the US, shows specialist roles established both as add-ons to traditional jobs (e.g. Reference/Instruction Librarian) and as specialist positions (e.g. Instructional Design Librarian, Learning Support Librarian), including several with strategic and/or senior management responsibilities (e.g. Information Literacy Co-ordinator, Head of Library Instruction, Director of Educational Programs).

Nature of hybrid roles

A striking feature of the roles investigated in our most recent research is the array of tasks typically undertaken by many of the postholders and consequent implications for knowledge and skills acquisition. Our subject librarian samples reported a range of different job titles, which can be broadly characterised as generic (e.g. Assistant Librarian) or having a subject (e.g.

Chemistry Subject Librarian, Law Librarian), information (e.g. Information Officer/Specialist), liaison (e.g. Academic Liaison Librarians) or learning support focus (e.g. Learning Adviser). However, we generally found that titles were a poor predictor of operational responsibilities as despite their variety there was remarkable consistency in the work portfolios of postholders. The majority of respondents in our first study confirmed their involvement in 13 of 15 specified areas drawn from the literature, which covered client liaison, collection development, materials budgeting, enquiry work, e-learning support, information literacy teaching, user guides and web authoring; classification and (especially) cataloguing were the areas attracting fewest responses, reflecting the gradual delegation of technical services work to paraprofessionals reported elsewhere.

Although information literacy teaching was flagged as a growth area, estimates of the number of teaching hours per annum for this group were generally below 10% of their contracted hours, which contrasts with our later study, where the average proportion of work time spent on teaching activities was around 20% and one-fifth of respondents spent 40% or more of their time teaching. In our second study, we also asked participants about the types of teaching activity undertaken, which confirmed the specialist nature of their work as four-fifths of the sample confirmed their involvement in a range of pedagogical tasks, including preparation of teaching and learning materials, face-to-face teaching of small and large groups, pre-arranged one-to-one instruction and provision of *ad hoc* on-the-spot support (such as instruction at an enquiry desk, often referred to as exploiting a 'teachable moment'). Several respondents also mentioned preparing material for virtual learning environments (VLEs), confirming the growing significance of e-learning developments for this role. Our research here therefore confirms both the variety and complexity inherent in academic subject librarian work, with a range of traditional information-related functions continuing to be undertaken together with increasing involvement in a growing range of teaching activities.

Our exploration of information specialist roles in the commercial legal sector had a particular focus on the relationship between legal info pros and PSLs, including their formal organisational relationship in terms of management and reporting structures, the perceived clarity of role boundaries and the extent of co-operation and teamwork between these two groups of hybrid specialists. The vast majority of respondents (almost four-fifths of the sample) confirmed that their firm employed PSLs, but in nearly three-quarters of these cases they were not formally part of the information services unit. Most respondents judged their level of co-operation as moderate or better, but a significant minority felt there were role ambiguities and/or work overlaps. The roles of PSLs in interpreting legislation, updating and drafting precedents and carrying out in-depth research were considered appropriate and non-contentious, but other activities were more controversial.

Comments offered here suggested that some overlaps and tensions arose from poor understanding of info pros' competencies and expertise – on the part of both support lawyers and fee-earners – but others indicated that this situation reflected fee-earning lawyers' prejudices or preference for dealing with other lawyers, rather than info pros. The key functions common to both groups were current awareness, KM and training, but many participants cited these areas as examples of collaborative activity, explaining how their respective roles were differentiated, e.g. PSLs adding expertise by editing content provided by info pros; and library staff fulfilling a quality assurance role for a know-how database. Significantly, even though the particular contributions of the two groups to these services were different, it was acknowledged

that they both needed skills in the same areas (e.g. in appraising and selecting material, in organising information and in training) to apply and exploit their specialist expertise.

Knowledge and skills requirements

Hybrid professionals have often been defined in terms of the breadth of their knowledge base, which typically embraces specialist expertise from more than one professional domain. Thus subject librarians and information specialists will ideally have 'specialized subject knowledge appropriate to the business of the organization or client', according to the SLA (1997), which ranked this competency near the top of its list of 11 Professional Competencies in the first version of its *Competencies for Special Librarians*, second only to what is arguably our defining core competence, 'expert knowledge of the content of information resources'. There is less consensus on the level of knowledge needed: some commentators favour an academic degree or professional qualification in the relevant subject; others, notably Rodwell (2001), argue that the required subject expertise is a combination of client and resource knowledge, i.e. an understanding of the clients served, their needs and the information resources available to support them. Several writers observe that the benefits of subject knowledge go beyond the obvious practical advantages, by helping to win professional respect and establish rapport with clients (Hooper-Lane, 1999; Oakley, 1989).

Our survey of legal info pros confirmed the importance of subject knowledge for specialist information work. We asked them to rate the importance of 21 specific legal knowledge areas identified from the literature and all were rated at least 3 on a 5-point scale. The majority of our questionnaire respondents judged knowledge of statutes/legislation, case law, law reports, legal research methodology and citation practices as essential to perform their role effectively. They also identified gaps in their knowledge on entering the sector that impacted on their efficiency, such as a basic knowledge of the law, the legal system and its terminology. In additional comments, they highlighted the need for knowledge of business information and business research skills for work in this sector. Requirements are similar to those of subject-specialist librarians and info pros in other fields, in that the type of subject knowledge needed is the ability to negotiate the information resource base of the field, which in turn requires contextual understanding; but the distinctive nature of legal materials and citation methods, coupled with the additional need for business information competencies, suggests the specialist knowledge demands in this sector are more extensive and complex.

However, our study also showed that these info pros need a wide range of other competencies, including both information-related and generic knowledge and skills. When asked to rate 28 professional/technical, managerial/business and personal/interpersonal abilities, all the competencies specified were again rated 3 or higher. Interestingly, (inter)personal competencies dominated the list of those considered most essential, with communication, team-working, prioritisation and confidence rated as essential by the majority of respondents, along with professional/technical abilities in information literacy and database searching. The latter was seen as the most important competency overall by questionnaire respondents, but interestingly those who were interviewed identified the pre-eminent competencies for the sector as cataloguing and classification, information retrieval and research skills. The competency requirements for this specialism are therefore very demanding in terms of the breadth and depth of knowledge and skills considered necessary, underlining the particular challenges of

continuing professional development for professionals occupying such boundary-spanning roles.

Our surveys of academic subject librarians identified a similar pattern, confirming the need for a mix of professional/technical and personal/interpersonal competencies. There was less emphasis on managerial/business competencies in these studies, apart from project management and budget/financial management, reflecting the composition of the samples (which included relatively few people in managerial positions) and the context of their work (education, rather than business). Relatively few respondents mentioned knowledge of the relevant disciplinary field as important for their work and those who did typically linked this with knowledge of the relevant information resources.

In contrast, the specialist competency requirement highlighted by these info pros was pedagogical knowledge and teaching skills, seen by many as of comparable importance to their core competency in information searching and retrieval. Indeed, a substantial minority actually felt knowing how to deliver teaching sessions was more important than knowledge of information literacy. Other specialist knowledge needs identified included instructional design, coaching skills, learning theories and educational technology. This contrasts with legal info pros in the commercial sector, who valued teaching/training competence highly, but generally ranked it well below their top two information competencies and most of the personal competencies, as well as slightly below some of the legal knowledge areas. In addition, although subject librarians have similar pedagogical development needs to other teachers in higher education, they also have distinctive requirements because of often only having 'one shot' at teaching their students in the classroom (rather than having the chance of forming a conventional tutor-student relationship) and also needing to make the most of *ad hoc* opportunities at the enquiry desk and other one-to-one instructional sessions.

Education, training and development

In common with reports in the literature, the majority of the specialist practitioners surveyed had gained the knowledge and skills needed for their specialism on the job, but substantial numbers had also attended short courses and/or undertaken extended programmes to supplement informal learning. Examples in the legal sector included the specialist courses offered by BIALL (on legal foundations and legal reference materials) and the City Legal Information Group. Teaching librarians also reported attending short courses aimed specifically at info pros, such as those offered by CILIP and Netskills, as well as a module on Facilitating Information Literacy in Education commissioned by the National Library for Health. However, almost a third of our sample of teaching librarians had undertaken an extended education programme not targeted specifically at the information profession, such as a postgraduate certificate in learning and teaching or a City & Guilds qualification, with a fifth of respondents obtaining a formal qualification in teaching as a result. Although participants identified significant benefits from these courses, they also highlighted particular features of their teaching role – notably the 'one-shot' aspect of their activities – that needed special consideration and set them apart from most other teachers.

One of the most striking findings of our research to date is the level of demand identified among both teaching librarians and legal info pros for specialised professional education to prepare

them for their hybrid roles. Both groups stated a preference for programmes providing education in their specialist field within a library/information science context, rather than a standard programme in the discipline (i.e. a teacher training course/certificate or a law degree). Both also emphasised the importance of grounding such provision in current real-world practice, ideally building in practical work/employment experience as part of the package (e.g. teaching practice in libraries and internships in law firms). In addition, both groups favoured a blend of formal and informal learning, for example gaining a theoretical understanding in the classroom and then putting theory into practice in the workplace. For practitioners moving into their specialism after completing their initial professional education, the flexibility of education and training provision was also a significant factor, with members of both groups wanting affordable and convenient offerings in the form of either localised delivery or distance education (e.g. e-learning), with modular and portfolio-based qualifications mentioned as suitable approaches.

When presented with a list of qualification options, legal info pros identified a specialist law librarianship/legal information management programme as their top preference, also showing strong support for a generic information science programme with specialist legal information electives and (to a lesser extent) for one offering a tailored pathway for legal information specialists. Although the majority of respondents thought legal knowledge was important for their role and many indicated that they would have liked to have had more knowledge of the field when they entered the sector, most viewed information-related knowledge as more valuable and there was relatively little support for a law degree as suitable preparation, one argument being that the specialist competencies of info pros enable them to pick up the basics of a new field relatively easily, whereas people with only a legal training often had poor research skills. Although there were some criticisms of out-of-date content and insufficient coverage of some areas (e.g. cataloguing and indexing), interviewees generally valued the competencies that they had gained from their professional education, especially in areas such as search techniques and KM, in addition to skills in enquiry handling, information storage and retrieval, cataloguing and indexing, collection management, library planning/design and general management.

Teaching librarians also want their specialism to be incorporated within library/information science education. The situation here is slightly different to the legal information sector as there is a widespread view that teaching/training is now a core or at least a common activity for librarians in all types of library, not just academic subject librarians (Albrecht & Baron, 2002; Bundy, 2001). Indeed, Owen (2002) identifies the need for legal info pros to have teaching/training skills and the AALL (2001) places a lot of emphasis on this role, listing nine points under this heading in its formal statement of *Competencies for Law Librarianship*. The most favoured option here was a module on teaching as a core element of all library/information science education, but there was also substantial support for more extensive coverage in the form of a designated pathway/set of modules with a pedagogical focus or a whole programme aimed specifically at preparing info pros for teaching.

Additional comments suggest that an appropriate model could be to include a compulsory teaching/training unit in all initial library/info pro education, but also provide a specialist programme (at certificate, diploma or masters level) for those for whom teaching is a substantial specialism, as further post-experience education. The new MA in Information Literacy now offered by the University of Sheffield meets this need, with exit points at the Diploma and Certificate stages, but can be taken as either as professional preparation or as a professional

enhancement programme. This programme, along with the MSc in Legal Information Management and a new international version of our MSc in Health Informatics previously mentioned, is one of several modular postgraduate courses developed recently to meet the need for specialist professional education, another example being our MSc/PGDip/PGCert programmes in Electronic & Digital Library Management.

Conclusion

There are three key messages from this brief review of the phenomenon of hybrid information/knowledge specialists. First, it is evident from previous research that info pros need to develop a sensible blend of technical knowledge, contextual understanding and personal abilities to survive and thrive in the network world. In the contemporary knowledge economy, where large numbers of workers have information-intensive roles, info pros are becoming more specialised, exploiting their core competencies and applying information and KM skills in new ways to distinguish their specialist contribution. In common with other professions, they are having to 'upskill', become more involved with the business of their organisations and network more extensively with colleagues in and beyond their own specialism. Recent studies have confirmed that this often requires both higher-order information competencies and significant expansion of their knowledge base into other domains reflecting the business focus of their employer, often in combination with developing competence in using new information and communication technologies associated with the domain.

Secondly, evidence from job advertisements and professional literature indicates that there are many interesting and rewarding specialist hybrid career options available to people who are prepared to work at the boundaries of traditional professional domains. Most of these roles have evolved over time from early days of singleton posts whose scope, focus and status was often not fully understood or formally recognised by stakeholders to a situation where the numbers of such posts have led to the creation of identifiable teams, specialist units and career paths within their organisations, with positions existing at progressive levels of the organisational hierarchy, from entry grades to senior management. Recent research has shown that such roles continue to be characterised by fluidity and ambiguity, but support systems in the form of practitioner networks, special interest groups and formal professional associations are gradually emerging to consolidate their position.

Thirdly, another indicator of the maturity of these specialisms is the range of specialised development programmes now available to support new entrants and experienced professionals wanting to take their careers in this direction. While research indicates that the pioneers in these new roles typically learned on the job and by trial-and-error, or by taking generic courses that did not entirely meet their needs, current practitioners can more often now choose between generic and specialist provision, in the form of both short courses and extended programmes, with postgraduate education at certificate, diploma and masters level available for several specialties. Such education programmes typically contain sufficient library/information science content to gain accreditation by mainstream library/info pro bodies, thus enabling participants to keep career options open if they later decide not to pursue the specialist career path. Some extended programmes are available in e-learning/distance education mode.

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1

The Emergence of Hybrid Professionals: New Skills, Roles and Career Options

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The emergence of hybrid professionals

Presentation outline

- Introduction and background
- Research methods and data
- 'Hybridization' of specialists
- Roles, skills and education
- Summary – key messages



Online information today

- Easy access for business people, students et al. to masses of information via search engines
- False confidence among many Internet users in their ability to find the information that they need
- Downsizing, outsourcing and off-shoring of special libraries and information services
- Other workers with information-intensive roles



Professions in the modern world

- Working at higher levels with more involvement in the business and networking within teams
- Continual 'upskilling' and more specialization
- Also expected to have 'cross-functional skills'
 - to negotiate and communicate with other professionals/specialists in their organizations
 - to make decisions outside the immediate confines of their original specialism



Sources for the research data

- Review of related literature
- Review of job advertisements
- Surveys of academic subject librarians
 - electronic/paper questionnaire ($n=32$)
 - expert e-interviews, online questionnaire ($n=82$)
- Survey of legal information professionals
 - online questionnaire ($n=64$), interviews, focus group



Evolving 'hybridization'

- Hybrid managers (1980s)
 - people with strong technical skills and sufficient business acumen to work in user areas or *vice versa*
- Hybrid learner-support professionals (1990s)
 - people with advanced information searching/handling and good IT skills who advise users on both areas
- Hybrid information/knowledge specialists (2000s)
 - people with some or all of the above and more . . .



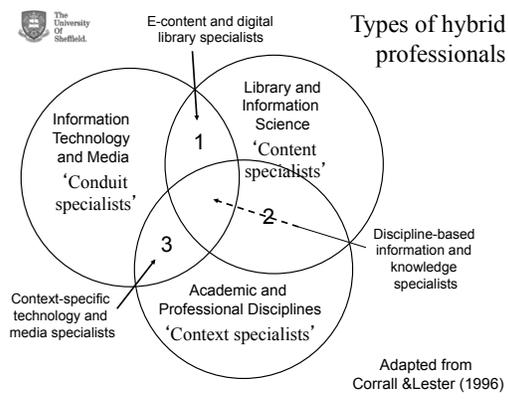
Evidence of maturity

- Creation of hybrid specialist positions at progressive levels of the management hierarchy
- Emergence of distinct communities of practice with their own dedicated professional networks and associations/formal bodies to support them
- Development and accreditation of specialist training courses and educational programmes



Contemporary hybrid roles

- Boundary-spanning niche sub-specialties which occupy the shared territory that represents the overlaps between formerly distinct domains
- Postholders can enter this shared space from either side of the professional boundary to fulfil distinctive roles reflecting their own backgrounds
- New roles may initially be viewed as technical with low status until their full value is recognised



Examples of specialist roles

1. E-content and digital library specialists
 - digital initiatives developer, digital library project manager, director of digital collections, electronic resources co-ordinator, head of e-strategy, intranet/web manager, repository librarian
2. Discipline-based information and knowledge specialists
 - data scientist, GIS specialist, health library manager, information literacy co-ordinator, instructional design librarian, know-how manager, law librarian, professional support lawyer
3. Context-specific technology and media specialists
 - instructional/learning technologist



Characterising hybrid roles

- Subject librarian roles evidence breadth + depth
- Most carry out a wide range of information tasks
 - collection development, e-learning support, enquiries, materials budgets, training, user guides, web editing
- Information literacy education is big growth area
- Most carry out informal + formal teaching tasks
 - one-to-one instruction, teaching small + large groups, preparing training materials and e-learning resources



Working in shared territory

- Some legal IP tasks also undertaken by PSLs
 - current awareness, knowledge management, training
- Most felt roles were clear, some noted overlaps
 - examples of co-operative provision/joint management
 - PSLs add expertise to content provided by legal IPs or legal IPs have QA role for PSL database content
 - some PSL information work attributed to limited grasp of IP expertise and/or prejudice of fee-earning lawyers



Specialist knowledge requirements

- Like other info pros, IL teachers need knowledge of the info resources and methods of their field and understanding of the operational context
- Like other teachers, they also need knowledge of educational theories, instructional design, teaching techniques and learning technologies
- But their pedagogical needs are distinctive
 - IL teaching is often one-off, informal and/or individual



Specialist knowledge requirements

- Like other info pros, legal IPs need knowledge of the info resources and methods of their domain and understanding of their business context
- But their needs are more complex and extensive
 - distinctiveness of legal terms, materials and citation
 - additional requirement for business research skills
- LIS knowledge is valued above legal knowledge
 - but some knowledge of the law is helpful for new IPs



Preferred development options

- Info literacy specialists favour teacher training tailored to library/information professional needs
 - core module on teaching in professional education
 - whole programme on teaching as CPD for specialists
- Courses must include practical sessions to complement and implement theoretical learning
- Practitioners need affordable, flexible delivery
 - eg e-learning, modular, portfolio-based qualifications



Preferred development options

- Legal info pros regard a specialist legal IM programme as ideal preparation for their jobs
- LIS education valued for search techniques, enquiry handling, collection management + KM
- Provision must strengthen real-world context
 - eg practitioner input, law firm internships, shadowing
- Practitioners want more flexible CPD offerings
 - eg regional provision and/or distance education



Summary

- Info pros need technical know-how supported by context-specific knowledge and personal abilities
- Rewarding hybrid careers await those ready to work across traditional professional boundaries
- Specialist education and CPD programmes are being developed to support new entrants and experienced practitioners attracted by this option



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