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The Role of library and information services in supporting learning

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Introduction

Healthcare LIS professionals have always supported students and those undertaking continuing professional development. Increasingly, they support statutory periodic refreshment and form collaborative partnerships with public and academic libraries. This chapter explores changes impacting on libraries as they evolve to accommodate emerging learning needs. It discusses problem-based learning, enquiry-based learning and 'clinical placements' before outlining a case study that typifies such changes. It concludes with the implications of these developments for the role of healthcare librarians.

Lifelong Learning

The knowledge society and the accelerating development of information and communication technologies (ICTs) are driving lifelong learning (Roes, 2001). Consumers are demanding greater flexibility with regard to learning pathways, qualifications and accreditation for learning. Cross-sectoral developments include the *National Grid for Learning*, a network for schools, connecting public and national libraries, further and higher education institutions and the workplace and the *University for Industry*, which provides an infrastructure to enable workers to identify learning pathways and providers who meet their needs (Department for Education and

Employment, 1998). Key players include LearnDirect (http://www.learndirect.co.uk/) and the People's Network (http://www.peoplesnetwork.gov.uk/).

Other sociological and technological demands are reshaping pedagogic models (Twigg and Miloff, 1998):

- Continual increases in student numbers.

- Widening participation to women, older students, and students from ethnic minorities.

- Increasing work-based learning requiring flexible delivery.

- Emphasis on "learning to learn" to combat obsolescence, and enable periodic "refreshment", of knowledge.

- Budgetary pressures for more efficient and effective education.

Twigg and Miloff (1998) identify the role of ICTs in meeting such challenges:

- Course materials can be offered independently of time and place, with modularisation offering flexible learning routes.

- Increasing availability of the Internet, at home, on campus or in halls of residence.

- More information via the web; either free or under institutional access agreements.

Increasing competition, across geographical boundaries, is already challenging the monopoly of institutional information services (Hughes, 2000). The learning environment of the future will be more student-centred, interactive and dynamic allowing group work on real world problems with students determining their own learning routes (Twigg and Miloff, 1998). With increasing emphasis on information literacy to support lifelong learning (Brahmi et al, 1999) students will take more responsibility for their learning goals (Roes, 2001). Such changes are mirrored within healthcare where, for example, *Making a Difference* (1999) requires increased access to ICTs, more flexibility with part-time study and step-on, step-off study modes, longer placements, lifelong learning, continuing professional development and evidence-based practice (Gannon-Leary, Wakeham and Walton, 2003). Approaches to this agenda are discussed below.

Continuing professional development

Continuing professional development (CPD) ensures that "health professionals keep updated to meet the needs of patients, the health service, and their own professional development. It includes the continuous acquisition of new knowledge, skills, and attitudes to enable competent practice" (Peck et al, 2000). The NHS recognises work-based learning as a way to deliver lifelong-learning for its workforce (Anon, 2002) and several documents are shaping the CPD agenda (Table 1):

Table 1

Year	Title	Summary
1997	*The new NHS - modern – dependable*	Began modernisation in the NHS and proposed 'clinical governance' to be reflected by all professional development programmes.
1998	*A First Class Service - Quality in the new NHS*	Proposed 'culture that values lifelong learning" in which CPD programmes identify and meet the learning needs of individual health professionals.
1999	*Continuing Professional Development - Quality in the new NHS*	Need for a locally managed, systematic approach to CPD with criteria to guide local health organisations.
1999	*Making a Difference - Strengthening the nursing, midwifery and health visiting contribution to health and*	Need for commitment to CPD and lifelong learning by individuals and organisations. Continuing professional development programmes should meet local service needs as well as patient needs and the personal and

	healthcare	professional needs of practitioners.
1999	*The NHS Plan - A plan for investment - A plan for reform*	Commitment to support CPD for professional staff, and an expectation that staff should receive support to fulfil requirements of clinical governance and revalidation. Emphasis on accredited workplace based systems of learning.
2000	*Meeting the Challenge - A strategy for the Allied Health Professions*	How the government wants allied health professions supported in delivering The NHS Plan.
2000	*A Health Service of all the talents: Developing the NHS Workforce.*	Importance of postgraduate education and lifelong learning and of ensuring that skills of all professionals are deployed appropriately.
2001	*Working Together - Learning Together. A Framework for*	Proposes co-ordinated approach to lifelong learning supported by NHS University, covering continuing personal and professional development.

	Lifelong Learning for the NHS	Outlines changes to the way the NHS's £2.5 billion yearly education and training budget is spent.
2001	*Making the Change - A Strategy for the Professions in Healthcare Science*	Raises profile of "professions in healthcare science" and outlines how they are to be supported in delivering *The NHS Plan*.
2002	*HR in the NHS Plan*	Updates *Working Together - Learning Together* with respect to modernising learning and development.

In addition, the Audit Commission's *Hidden Talents* report highlighted inequalities in education, training and development for 600,000 NHS staff and looked at how trusts can obtain best value from training activities. Simultaneously, the National Audit Office's report *Educating and Training the Future Health Professional Workforce for England*, reviewed arrangements for educating pre-registration health students.

The role of library services

Many government documents recognise the role of LIS in supporting learning throughout life. Library services are 'the bedrock' of education and training (Department of Health, 1999), and increased emphasis on continual, self-directed learning poses a considerable challenge to NHS libraries:

> "library and IT strategies should provide a framework for ensuring equal access for all staff groups to the learning resources which support work based learning" (Department of Health, 1999).

Developments such as modernisation and clinical governance ensure that challenges facing health libraries are even more acute than those in other sectors. CPD should be purposeful and patient centred, participative, educationally effective, cross boundary, build on previous knowledge and skills, and be part of a wider organisational development plan (Department of Health, 1999).

Skills escalator

In setting out its vision of modernised services, redesigned around the patient's journey, *the NHS Plan* identified an imperative to develop its workforce. Such

thinking underpins the ambitious agenda of the NHS University (NHSU) (Fryer, 2002) to not only meet the needs of the existing workforce but also to build, reward and support the NHS workforce of the future. The resultant strategy is "the Skills Escalator", whereby staff pursue lifelong learning, constantly renewing and extending their skills and knowledge, enabling them to move up the escalator. At the same time roles, work and responsibilities are delegated down the escalator where appropriate.

Problem-based Learning

Problem-based learning (PBL) 'uses carefully constructed clinical problems as a context for students to learn problem-solving skills and acquire knowledge about the basic and clinical sciences' (Albanese and Mitchell, 1993; Bligh, 1995; Kanter, 1998). Interest in PBL (Connolly and Donovan, 2002) now extends beyond medical education where a didactic "chalk and talk" model had held sway (Johnson and Finucane, 2000).

PBL is claimed to improve student satisfaction as the focus shifts from *what* they learn to *how* they learn. The workload is heavy and many students find PBL time-consuming and exhausting. However, its added perceived relevance seems to justify the heavier workload. Several UK medical schools have accompanied a move to PBL with fast-track graduate entry programmes (GEP) to attract mature adult students with generic problem-solving skills. GEP students make heavier use of library facilities than traditional entry undergraduates (e.g. more use of journals, e-journals, photocopiers, printers, the library catalogue and databases) (Martin, 2003). In addition, there is increased pressure as students search for information on the same clinical problem at the same time. Increases in short loan collections and textbooks,

computer-assisted learning and provision of web resources (Myers et al, 2002) to

answer clinical problems are also required (Rankin, 1992; Rankin, 1993; Rankin,

1996). Such demands may be countered by developing e-journals, e-books, database

access and PCs in student halls of residence yet planning physical resources remains

important (Rashbass, 2000). Requirements include adequate tutorial rooms, access to

multiple copies of textbooks, adequate photocopying facilities and economic costs for

copying journal articles, computers and other technologies (Feuerman and Handel,

1998).

E-learning

E-learning figures prominently within the Government's education (Department for

Education and Employment, 1998; Cabinet Office, 2000; Dawes and Hanscomb,

2002) and health service (NHS Executive, 1998; Burns, 1998) agendas. The NHS's

framework for lifelong learning (Department of Health, 2001) is underpinned by an e-

learning strategy, which includes the NHS University (http://www.nhsu.nhs.uk/). E-

learning enhances learning by delivering content via the Internet, intranet, video and

audio-conferencing, email, electronic discussion groups and CDROM (Bargellini and

Bordoni, 2001; Joch, 2003; Roberts, 1999). Just because the future is digital does not

mean that less physical space is needed. Students and staff demand hard-copy

resources and access to facilities, services, staff and the learning culture of a physical

library (Haldane, 2003). Access to electronic resources may reduce students'

dependence on the physical library yet enquiry-based learning (learning in which

learners engage with a self-determined process of enquiry, accommodating divergent

thinking about problems and exploring different views of the world (Price, 2003)), requires increased resources and groupwork, increasing likely demands for support from professional librarians. On-site students typically access the library in self-service mode whereas providing documents to remote locations involves staff in retrieval and shipping. Staff and students require "start-up" training and ongoing support and maintenance (Banwell et al, 2003). Local collections, electronic reserve systems, document delivery software, and bandwidth to support image and graphical applications incur additional costs. Electronic information resources demand copyright clearance and attention to security and authorisation procedures. Geographical inequities pose additional challenges. Librarians are experienced in providing access to remote electronic resources but must now support newer mechanisms for e-learning (MLANET, nd), such as personal digital assistants (PDAs) (Whitsed, 2003a).

Clinical placements

Healthcare libraries must provide access to remote resources and negotiate services for their students at partnering institutions in distant locations. Although librarians have strong traditions of networking and outreach, meeting the resource needs of students who split their time between higher education and placements, clinical or otherwise, is a considerable challenge. Healthcare and academic library providers must ensure an optimal mix of physical and electronic services (Gannon-Leary, Wakeham and Walton, 2003). Such partnerships are also key to the success of the NHSU, since as many NHS staff work in the community as work in hospital.

Blended learning

Delivering learning electronically offers advantages in terms of speed, cost and scale (Beagle, 2000). However, electronic methods are only effective as part of an overall blend. "Blended learning" describes the increasingly common combination of asynchronous self-study with traditional classroom, face-to-face activity (Whitsed, 2003b). Education has employed such models for hundreds of years with "live" lectures supplemented with asynchronous homework and further reading. Blended learning addresses concerns of learners who feel that the social side of learning is lost in an online environment (Quinsee, 2001; Kazmer, 2003). Thus the NHSU, recognising that everyone learns in different ways, will deliver learning to the classroom, workplace or online as appropriate (Fryer, 2002). Not all identified training needs are best met by e-learning making it important to match a blended approach to preferred learning styles (Drury and Smith, 1999).

Blended learning requires blended services, exemplified by "the hybrid library" where electronic and paper-based information sources exist alongside each other. End-user resource discovery and use is encouraged, irrespective of format and source (Pinfield et al, 1998). The hybrid library brings "...technologies from different sources together in the context of a working library, and also [begins] to explore integrated systems and services in both the electronic and print environments" (Rusbridge, 1998). It is not the sterile compromise that its name suggests but an innovative approach to delivering services irrespective of physical environment.

Case Study

Flexibility in learning, support for learning, hybrid learning resources and inequities in the learning experience are addressed by the Health and Education Northumbria Students Access to Learning resources (HENSAL) project (Middleton, Rowell and Walton, 2002) which examined these issues in relation to their impact upon NHS Students on placements and their use of University and NHS library services and resources.

Northumbria University health students undertake considerable periods of learning within the NHS; those on pre-registration courses spend up to 50% of their time on clinical placement. Significant numbers of NHS nurses and allied health professionals undertake part time courses at Northumbria University for continuing professional development. Northumbria has also introduced problem-based learning for several courses. Hence, it was considered important to investigate students' experiences of accessing learning resources whilst away from the campus on clinical placement.

The Dearing report (NCIHE, 1997) noted a proliferation of flexible study methods, such as distance learning and e-learning, with increasing numbers of students unable to physically access their place of study. Provision of course materials and library and IT services via the Internet has increasingly addressed this, and Northumbria University has responded with a hybrid library service of broad-based print resources alongside innovative electronic resources. For example, the Hylife for Health gateway offers print and electronic services for students on health related courses,

supplemented by traditional services, such as books and journal articles, delivered via a postal service. However, no research had examined use of these services by students on placement.

Data collection employed a questionnaire to elicit students' views and perceptions and two focus groups to seek the views of health students and Practice Placement Facilitators (PPFs). PPFs are experienced nurses and midwives who liaise between the University and the host NHS trust to ensure that placements are of sufficient quality & quantity to sustain the commissioned numbers of pre-registration students. Out of a total number of 1990 health students, there were 415 questionnaires completed.

Theme 1: Flexibility of learning

Ninety-two percent of students felt that access to learning resources was either "important" or "very important" to their studies whilst on placement. Eighty-nine percent of students used the University library as their main library and 55% also used their NHS placement library. Public libraries were used by 28% of respondents. The University was used on a weekly basis by 45% of health students and the NHS placement library was used weekly by 27%.

Thirty percent of health students used the hybrid "Hylife for Health" and part-time and distance learning services. Twenty-five percent of students used the Blackboard Virtual Learning Environment, an electronic environment for online learning comprising resources, course materials and information. Access to the Internet is

fundamental to students on placement, facilitating direct access to such services as Hylife for Health and Blackboard in whatever limited time students have available.

Theme 2: Level of Sophisticated Use

When compared with other students who focus on teaching materials, health students are very sophisticated users of learning resources. They recognise the importance of e-journals and databases, reflected in their use of databases such as Medline and CINAHL and full-text e-journals.

Theme 3: Problems and Support

Health students faced a number of problems accessing and using the learning resources available to them on placement. Over 30% of health students reported difficulties accessing learning resources including:

- **Accessing study space**. Although study space was available to 59% of health students at their placement venue, 31% had problems accessing it. This problem was also identified by PPFs.

- **Physical access**. Opening hours proved problematic for 17% and the location of the Library for 16% of health students.

- **Type of placement venue**. Typically those on placement in community/primary care or in nursing homes and hospices were disadvantaged compared with colleagues in hospital/acute settings.

- **Awareness of resources and services**. Over 50% of health students had either "never heard of" or had "never used" distance learning services. A similar figure had never used Blackboard.

Such problems are exacerbated by health students' self-reliance in accessing learning resources. They do not seek or use available support from academic, library and IT staff in understanding and accessing learning resources. Workplace mentors were most likely to obtain support and information about accessing learning resources. (32% of students consulted their mentor on a weekly basis for support about learning resources). The mentor is responsible for helping the student to achieve the intended outcomes of the placement and works the majority of the time with the student. Mentors are not necessarily the most appropriate staff group to support students in this area. The movement of pre-registration health education into the higher education sector has meant the separation of learning resources for students and working practitioners. Although mentoring staff may be familiar with learning resources accessible through the NHS they will not necessarily be familiar with services available to University students. PPFs were more appropriate for supporting and guiding students on learning resources.

Theme 4: Inequities of access

Health students were based in a variety of types of placement location including hospital/acute (64% of respondents); nursing home/hospice (10%); learning disability

(8%); mental health (8%); and community/primary care (7%). The research compared and contrasted experiences of accessing learning resources, examining specific facilities at the placement venue.

- The local library/resource centre was accessible to 54% of health students at their placement venue but 31% reported access difficulties in accessing it. Whereas 74% of students at the main hospitals reported a library/learning resource centre for their use on site, over 80% of those in community/primary care and over 70% of those in nursing homes/hospices, had no access to a library/learning resources centres.

- Most students in hospital placements were able to access the Internet while those based in nursing homes/hospices and the community reported greater difficulties. The study reported extensive use of home computers by many students for their studies, a significant finding when coupled with the problems many students experienced in accessing a computer at their placement venue.

Access to learning resources is clearly not equitable for all students with those owning a home computer holding a clear advantage. Students without access to a placement/resource centre, (largely those in the community and nursing homes/hospices) are clearly disadvantaged and often have least opportunity to access a work based computer with the Internet.

The future role of health librarians in supporting teaching & learning

In the future health librarians will likely have quite different roles and responsibilities in terms of information literacy teaching; course & curricula design and development; and supporting access to services and resources.

Information literacy teaching

Problem based learning places great emphasis on information literacy. With PBL students being heavy LIS users, using the library earlier and more frequently and spending more time in the library than traditional students, there is a greater need for user education and for health librarian expertise to be harnessed in teaching information literacy. Librarians have a vital role in teaching users to identify, evaluate and use information efficiently and effectively, and to become self-supporting information seekers (Friden, 1996).

The impact of such shifts in the role of health professionals on the largely reactive traditional role of health librarians, where users came to the library to seek assistance or to locate resources, cannot be underestimated. The role of the librarian as teacher requires that librarians seek out users proactively in a variety of settings, provide instruction about information resources and assist users in locating and evaluating information.

Involvement in course and curricula design and development

Librarian involvement in user education and information literacy training is frequently viewed by academic staff as "useful if it can be fitted in but not essential". Librarians are often seen as "auxiliary staff" (Freiden, 1996). If information literacy training is to be integrated into formal education programmes, health librarians must be involved in developing and designing new curricula and courses. (Gannon Leary, Wakeham and Walton, 2003). Academic health librarians are increasingly being involved in curriculum planning, albeit to varying degrees. Librarians have an increasingly important role in supporting and advising academic staff as they explore electronic and print resources for redesign of curricula and assess resources that may be required.

Supporting access to services and resources.

Increasingly, not just secondary resources (such as bibliographic databases) but also primary resources (such as full text e-journals and e-books) are available electronically. Traditional library activities are changing to reflect these trends. The physical library collection is becoming less important, and the health librarian increasingly fulfils a gateway function, enabling the learner to access resources irrespective of physical location. The health librarian provides the appropriate navigational tools and ensures access to the appropriate resources, whether electronic or print. Yet the physical library environment remains essential to the learner. Future

libraries or learning resource centres will have ubiquitous data connectivity (either wired or wireless) and be the focus for teaching, access and support of the virtual learning environment.

Conclusion

The above roles require the health librarian to develop partnerships, with educationalists and technologists and between health service librarians and academic health librarians. The recent procurement of the Dialog Datastar system by the NHS, (a system not used extensively by Higher Education), exemplifies the need for co-ordinated joint information literacy teaching by health service librarians and academic health librarians. Librarians are essential to the education and training of health professionals. Education providers, such as the NHSU, must "recognise the potential for library staff to undertake other roles in the learning process, such as designing courses, developing learning materials, teaching information skills or acting as mentors." (CILIP, 2003)

Key points

- The concept of lifelong learning has had a major impact in health professionals
- Government policy has highlighted continuing professional development for health staff as key
- Problem based learning and e-learning has implicatiosn for health libraries

- There is an major demand for access to learning resources when a student is udnertaking clinical experience

- Librarians have a learning role around information literacy teaching, course design and supporting access to services and resources

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