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Healthcare Librarians and Learner Support; a review of competences and methods

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Abstract

London Health Libraries (LHL) are undertaking a project, in order to develop the role of their library and knowledge services staff in supporting learners within the NHS in the London area [LHL Learner Support Project]. This paper reports on the first phase of the project, a literature analysis to provide guidance on the skills and competences needed for library and knowledge staff to perform this function. A variety of competences are identified, and structured in a model incorporating both training skills and general professional competencies. Library and knowledge staff will need themselves to have a high-level of information literacy and to be active lifelong learners. A 'blended learning' approach, involving e-learning together with other methods, is identified as the most appropriate way for skills to be acquired.

Keywords

learner support; information literacy; healthcare libraries

Key messages

Policy

- Library and knowledge staff should be involved in learner support
- Blended learning, combining e-learning with other methods should be promoted

Practice

- Skills and competences needed by library and knowledge staff who support learners are described

Introduction

London Health Libraries (LHL) are undertaking a project, in order to develop the role of their library and knowledge services staff in supporting learners within the NHS in the London area [LHL Learner Support Project].

NHS-funded libraries in London are collectively referred to as London Health Libraries and collaborate in the carrying out of certain core functions that are deemed to be best undertaken at a pan-London level. One of these functions is the development of the library workforce, ensuring it is “fit for purpose” by:

- Developing capability and capacity
- Creating a “skills escalator” approach to development and career progression
- Fostering partnerships, especially with higher education, to encourage joined-up learning and working
- Engendering a strong learning culture among health library staff in London

A meeting between the corporate university of the NHS, the NHSU, and LHL’s Strategy and Development Group cemented the recognition by the NHSU of the importance to learners of libraries because they have the resources, both physical and human, which contribute to successful learning. In order that this capacity should be continued and enhanced, and so that skills available are aligned with learners’ needs, the NHSU commissioned and funded the Learner Support Project.

The NHSU has now been replaced by the NHS Institute for Innovation and Improvement. The momentum of the Learner Support Project remains just as strong, however, given that a key component of the LHL Strategy 2005 – 2008 is: “Supporting the development of the whole NHS workforce” in London, and given that a 2004 training needs analysis indicated that one of the most commonly perceived gaps in knowledge identified by library staff was in teaching skills, an understanding of the learning process in general, and e-learning and its implications in particular.

The first phase of this project was preparatory desk research, involving an analysis of published literature. This provided a basis for the stages to follow, by giving guidance as to best practice, and specifically by providing answers for the following questions:

- What do other organisations’ library and information services do to meet the needs of a diverse workforce?
- What skills and competencies are required by library staff to address the learning needs of the workforce they serve?
- What is the best way for library staff to acquire the skills and competencies needed to address learning needs of the workforce they serve?
- What examples of good practice in meeting the learning needs of a diverse workforce and developing the skills and competencies of library staff can be identified at present?

This paper presents a summary of the results of this first phase. The full analysis and set of references which this paper summarises can be found in Robinson’s project report¹.

Desk Research Methods

Literature searching was carried out using the following bibliographic databases:

LIS

- LISA
- Social Scisearch
- Emerald full-text journals collection

Education and training

- ERIC
- British Education Index

Management / training

- Management Contents
- ABI Inform
- UK newspaper databases

Biomedical (for subject specific examples)

- Medline
- Embase

An iterative search process was used, starting with free text searching and then using the controlled vocabulary of each database. References in relevant papers were followed up, and citation searching in ISI databases was used to follow relevant material forward. The most useful databases for producing relevant papers were LISA, Medline and ERIC. The full articles were consulted whenever possible. In some cases, only an abstract was available.

Some searching was carried out through Google, mainly to identify organisational statements and policies, unpublished conference presentations, and examples of online instruction.

The topic of the teaching and promotion of information literacy, in its wider sense, and of the support of learning, is a very broad one, and no attempt was made to analyse the whole literature of this topic. The searches focused on three aspects and contexts of specific relevance to the LHL project: information literacy and healthcare support in the healthcare context; learner support for diverse groups in the workplace; and the specific role of library/information staff in supporting learners and in promoting information literacy. Within these contexts, all relevant literature was examined.

106 retrieved documents were judged relevant and informative, and their content analysed and included in the report.

Information Literacy and Learner Support

Within the context of the project, 'supporting the learner' is taken to mean 'facilitation/teaching of information literacy'.

Information literacy (IL) is a widely-used phrase, though its exact meaning and significance is open to debate^{2,3}. In the UK, the Society of College, National and University Libraries 'seven pillars' model of skills comprising information literacy is often referred to⁴, whilst perhaps the most widely accepted and cited definition worldwide is that provided by the American Library Association (ALA) Presidential Committee on Information Literacy⁵:

"To be information literate, a person must be able to recognize when information is needed, and have the ability to locate, evaluate, and use effectively the needed information."

The symbiosis between information literacy and lifelong learning was recognised by the ALA in 1989:

"Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organised, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand."

Information literacy thus includes learning skills, although an exact definition of what constitutes learning skills is arguable. The need for members of the library profession to be competent lifelong learners was also recognised by the Library Association in their 2002 report on a National Information Policy⁶:

"LIS professionals need to be lifelong learners as much as the users they serve, and must remain abreast of current developments within their domain if they are to be effective in their work."

The International Federation of Library Associations' (IFLA) section on Information Literacy goes further, to include education and learning⁷:

".user education, learning styles, the use of computers and media in teaching and learning, networked resources, partnerships with teaching faculty in the development of instructional programmes, distance education and the training of librarians in teaching information and technical skills."

Here, explicit reference is made to the "training of librarians in teaching information and technical skills".

A definition given by the American Library Association takes the issue of literacy in a very broad sense, referring to 'learning to read' as well as to 'exploring the Internet'⁸:

"21st Century Literacy is one of five key action areas adopted by the American Library Association to fulfil its mission of providing the highest quality library and information services for all people. Helping children and adults develop skills they need to fully participate in an information society—whether it's learning to read or explore the Internet—is central to that mission. The concept for 21st century literacy reflects an expanded vision of what it means to be literate in a global information society. Attention to these issues pervades the work of the association and its divisions, with both literacy and information literacy the focus of many continuing education efforts."

This type of definition is preferred by the London Health Libraries Learner Support Project to more restrictive definitions of information literacy, and is used as the basis for the study reported here.

If 'supporting the learner' is equated with promotion of information literacy, it follows that staff must first be information literate themselves. This includes knowledge of topics falling within the broad domain of library and information studies, and of learning techniques. Expertise in education theory, practice and technologies is also needed, to communicate aspects of information literacy and learning to library users.

Information Literacy Programmes

Information literacy training was pioneered in formal education settings, and is only slowly gaining ground in workplace settings^{3,9,10,11}, despite various writers emphasising its importance here^{12,13}. Therefore the great majority of published examples come from educational environments. Exceptions are IL programmes in large science-based commercial organisations^{11,14,15}.

Where information literacy training is presented in the workplace, the term is often not used. Employers prefer to speak of 'basic skills', 'smarter working', 'internet searching', and so on. These programmes, which often take the form of coaching rather than formal training, and emphasise attitudes as much as skills, are rarely described in publications: Winterman, Skelton and Abell give some examples⁹.

Some insight can be gained from training programmes in educational settings where the student body is diverse, mature, and vocationally oriented, particularly towards healthcare work. Examples of this include the Open University where library staff developed an information literacy programme for the university's 180,000 students. An aspect of this was an effort to make library staff feel confident in their own information skills¹⁶.

An example from healthcare education is the information literacy program for medical assistants at Wayne State University Michigan, an instance of information literacy training for a group of entry level workers of less than undergraduate status¹⁷.

An issue of particular importance for a health library environment is the extent to which information literacy and learner support must be context (i.e. healthcare) specific. Many writers have emphasised the importance of making information literacy training specific to the subject or professional orientation, context of work or study, and level of sophistication and need of the trainees, if it is to be successful^{14,15,18, 19, 20, 21, 22}.

It is also important that training is given at an appropriate time – when it is needed in the job situation or the study curriculum²⁴. In the workplace this is more difficult to arrange than in formal education, and flexibility is essential, as it is likely that 'timing' will be geared to an individual, rather than a team. This implies that there will have to be a major element of independent self-study, and that resources and training methods must cater for this. E-learning, as noted below, may make an important contribution here.

Means of Learning and Training

A variety of methods are used in teaching and training for IL. Brettle's review²⁵ identifies the main methods used for the teaching of information skills in healthcare contexts as:

- lecture/presentation
- demonstration
- hands-on practice
- interactive web packages
- e-mail sessions

These were delivered variously as one-to-one sessions, or with large or small groups. Combinations of methods were sometimes used.

Other methods used for instruction in information literacy include videotapes, streaming-server multimedia applications, and practice-related assignments.

Information as to which of these methods is most effective is lacking. Although some convincing accounts in the literature suggest that one learning method was found better than another, there is no consensus as to which is 'best'. Brettle's systematic review²⁵ finds no firm evidence as to which of the methods used for information skills training in healthcare is superior. Similarly, Joint's thorough and detailed analysis of the literature on the use of e-learning for information literacy, as compared with more traditional methods, leads to no convincing evidence that either is 'best', due to the lack of careful comparative studies²³.

Russell²⁶ presents a lengthy annotated bibliography of studies in which a variety of 'technologies for distance education' are compared, for a wide variety of subject material, starting with correspondence courses in 1928, and up-dated to 2002. The later cases largely deal with variants of e-learning. Studies in which no significant difference in effectiveness was found outnumber those for which there was such a difference, though it should be noted that the collection is comprehensive, and has a wide range of methodology and rigour in the comparisons.

E-learning

E-learning is gaining very wide publicity, as an important component of almost all aspects of education and training. In an information literacy context, the most widely known form of e-learning is the publicly available online tutorial – for example Safari²⁷. Other forms of e-learning for this purpose are now being reported frequently. However, e-learning is still a new phenomenon, and experience as to its "great strengths but also undeniable weaknesses", as Joint²³ puts it, is only slowly becoming available in the literature. Booth gives an assessment of its value for NHS libraries²⁸.

Increasingly, these other forms of e-learning are based on standard virtual learning environments. In the UK, the most popular of these are WebCT and Blackboard, and numerous examples are available in the literature of information literacy training based on these. Although these widely-used learning environments predominate, there are examples of information literacy training provided through less well-known systems, including simple environments, such as those based on HTML. It is possible to provide an e-learning component to information literacy training through any of a variety of platforms, although there are many advantages of consistency, compatibility and exchange of experience and resources, if a well-established and widely-used learning environment is adopted.

E-learning has many demonstrable advantages, including

- training can be undertaken at the time and place of the trainees' choosing
- an ability to accommodate a large number of trainees efficiently
- trainees can learn at their own pace
- some trainees find independent e-learning more acceptable than classroom formats
- trainees can choose their own 'path' through the subject
- the training method is 'naturally adapted' to presenting material dealing with digital information
- training materials can be easily linked to external resources, and these links can be easily modified and updated
- generic and local material can be integrated 'seamlessly'

The first advantage is particularly important for information literacy training, since it meets the need for training to be provided at the time it is needed, rather than when a training schedule dictates. It is also helpful for staff who have time constraints and/or work in small units, when attendance at scheduled courses may be difficult, and can be used to reinforce face-to-face learning when time is limited for the latter: Bury²⁹ and Boucher³⁰ emphasise these points in the health service setting. Bury also notes that one 'side effect' of using e-learning is an increase in participants' confidence in using IT systems.

There is now a greater realism about the disadvantages of e-learning than was the case when it was first introduced, in particular the difficulty of producing good e-learning materials for this topic, and the time and resources required to do it well (see, for example, Calarco, Self and Turman³¹ and Farha²²). If librarians become involved with such developments, they will need to be familiar with issues such as page design and navigation, usability, copyright, and many other technical and instructional concerns, as well as with the content^{32,33}. This reinforces the need for partnerships with colleagues with appropriate expertise.

There are also several published examples suggesting the 'traditional' instructional methods can be still be worthwhile^{23,34,35}, and may, in some cases, be preferred to newer methods, specifically e-learning, or should be used as complements to them. (For comparison, it may be noted that the stated preferred learning methods for UK healthcare library staff for their own training were hands-on practice and workshop/seminar³⁶). However, as the previous section shows, no single method has been shown to be superior. E-learning - for all its merits - is not a panacea, and may not be suitable on its own in all cases. Booth²⁸ summarises experience of e-learning in the NHS by suggesting that:

- it should be one of several learning approaches used to provide 'blended learning'
- it suits some, but not all, learning styles, and hence trainees

- it provides a desirable complementary approach to face-to-face learning

As Skov and Sk◊rbak³⁷ bluntly put it:

"the role of the librarian as a consultant and facilitator of ... learning processes cannot be replaced by Web-based tutorials"

and Joint²³ is even more blunt

"technophile librarians should not be too disappointed if traditional, librarian-led classes emerge as a more effective if resource-hungry teaching method".

In summary, the published evidence suggests that a mix of teaching methods is likely to prove most effective: Booth's 'blended learning'. Farha²² makes this point strongly. In general, the most popular mix seems to be online tutorials and resource guides, supported by face-to-face instruction, demonstration, and coaching^{38,39}, though the evidence is so far lacking to show clearly that this leads to better learning.

This suggests that librarians involved in information literacy training will need three sets of knowledge and skills, within the two areas of teaching and e-learning:

E-learning skills

1. for working with e-learning materials, to customise them, and to support users, and to make some input to their creation

Teaching skills

2. for face-to-face interaction, to supplement e-learning: presenting, demonstrating, and coaching
3. for choosing and recommending the best combination of training methods for their local users

These complement their essential, professional knowledge of resources, content and searching methods.

Skills and Competencies Needed

Effective information literacy programmes are likely to share a number of qualities, which have implications for the skills and competencies required of librarians, if they are to play a leading part in such programmes.

Two points in particular can be singled out:

- the programmes must encompass both generic and context-specific aspects of information literacy
- the programmes must support a variety of flexible learning methods, including both e-learning and face-to-face presentations and coaching and advising.

These imply in turn that:

- librarians must be themselves be information literate, having a high degree of professional competence with both general and subject-specific information services and resources, so that they can be confident in their abilities to assist and advise others in their use.
- all librarians must have some familiarity with teaching and learning methods and resources, and some will need to developed advanced skills in these areas.

There are numerous versions of the list of necessary training skills for a role in teaching information literacy. They take two forms. Most common is an account of a training course or programme for librarians, the content of which is an implicit account of necessary skills; several of these are described in the following section, while their competencies base is included in the summary below. Less common is an analysis of the literature, or of a particular situation, leading to an explicit listing of skills.

Detailed lists of necessary competencies have been devised by, among others, Botts and Emmons⁴⁰ and by Ware⁴¹. Peacock⁴² gives an interesting listing of skills, based partly on experience of library instruction programmes, and partly on educational theory. She derives a 'teaching competency' model, with teaching skills of design, delivery and evaluation operating within a framework of professional competency, comprising content knowledge, technical competence and professionalism.

This model seems an appropriate one for the purposes of this study. A modified version is used below to structure a list of proposed competences for those healthcare librarians providing information literacy instruction to learners.

Professional competency

Content knowledge

LIS concepts and processes
personal information literacy
healthcare concepts, vocabulary, subject knowledge
good knowledge of relevant resources and systems

Technical knowledge

computer literacy
understanding of popular applications (e.g. MS Office)
fluency with relevant information systems, including learning environments

Teaching skills

Professionalism

positive attitude towards teaching

Basis of training

learning styles and teaching methods

Design

training needs analysis
deciding on learning outcomes

- planning of courses and sessions
- structuring material for delivery
- Evaluation
 - assessing of teaching effectiveness
 - assessing student learning

E-learning skills

- Creation
 - knowledge of e-learning tools
 - design or customisation of materials for e-learning
- Delivery
 - presentation skills for electronic environment
 - supporting e-learning
 - coaching independent learners

This is a substantial body of material. There may be a case for suggesting that this is appropriate for those librarians who will take a leading role in planning and designing training. For the remainder, a sub-set of the competencies, perhaps focusing on 'basics of training' and on 'delivery' may be appropriate.

Recommendations and future progress

From these literature analyses, several conclusions were drawn, and main themes identified, as set out below.

- Many skills and competencies are necessary for the teaching of information literacy. These can be encapsulated in the model above.
- A mix of generic and specific content is needed in the training, implying that librarian trainers must themselves be fluent in both aspects.
- It is not necessary for all health library staff involved in learner support to gain all of these competencies. Some will be needed only by those who take a leading role in designing and developing training. But all library staff should gain some of the basic competencies, as part of the 'self managed development' of both librarians and those whom they train.
- E-learning has many strengths and advantages, but it should not be used alone. Rather, it should form part of a 'blended learning' approach, together with face-to-face methods. There are several examples of effective e-learning approaches; those based on widely-used virtual learning environments offer many advantages.
- Accreditation of competencies is highly desirable, to encourage participation, both for library staff as IL trainers, and for those whom they train.
- Evaluation of the effectiveness of training and the extent of learning is essential if the programme is to achieve its aims.
- Library staff are well-placed to take the lead in IL training, but will need to form partnerships with other sectors, with relevant expertise.

Based on these findings, the following recommendations were made

- A detailed listing of the skills and competences which are necessary in an information literacy training programme for healthcare librarians should be drawn up, based on the model above.
- Based on these, a modular curriculum should be designed
- Recommended programmes should then be specified for library staff with differing needs for detailed understanding of these issues. At the simplest, this could be a two-level distinction, between those with a major involvement in supporting learners – including design of materials and face-to-face presentation – and the larger number whose role will be limited to supporting, coaching and recommending resources.
- A protocol for delivery of this material should be drawn up, based on a blending of traditional and e-learning methods. As an initial step, an evaluation should be made of current e-learning IL tutorials, to see if any are suitable for 'generic' information literacy instruction.
- A protocol for the evaluation and accreditation of competence following trainings should be prepared.
- One or more partner institutions should be identified, possibly to assist with the tasks noted above, and certainly to assist in the preparation and delivery of the resulting programmes.

London Health Libraries are now continuing to the next stages of the Learner Support Project. This involves an initial series of focus groups to clarify the skills and competences for which immediate training is needed. There will follow a series of cumulatively dependent phases:

- design of an outline for a modular pilot programme, including the identification of components that are best provided 'off-the-shelf', using the input from the focus groups to determine the detailed list of competencies
- provision of cost estimates for the programmes and determination of mechanisms for its evaluation
- securing of resources to progress the pilot programme
- rolling out of the pilot programme, including recruitment and management of candidates and implementation of evaluation mechanisms.

The life of the pilot will be, ideally, one year. Once the pilot phase is over, the aim is to:

- complete the evaluation process
- produce a report containing recommendations concerning the learner support development of library staff
- use the evaluation to enhance, re-design or consolidate aspects of the programme
- move from the pilot stage to permanence by embedding the programme in the regular LHL training schedule
- consider the feasibility of offering the programme to non-library staff

References

- 1 Robinson L. (2004), Supporting the Learner: facilitating the development of information literacy skills. Available from Ray Phillips: ray.phillips@swlha.nhs.uk
- 2 Bawden D., Information and digital literacies: a review of concepts. *Journal of Documentation*, 2001, 57 (2), 218-259
- 3 Virkus S., Information literacy in Europe: a literature review. *Information Research*, 2003, 8 (4), paper no 159, Available at: <http://informationr.net/ir/8-4/paper159.html>
- 4 SCONUL (Society of College, National and University Libraries) (2003), Seven pillars, http://www.sconul.ac.uk/activities/inf_lit/papers/Seven_pillars.html
- 5 American Library Association (1989). Presidential Committee on Information Literacy. Final report. American Library Association: Chicago
- 6 Library Association (2002). Policy Advisory Group report on a national information policy. Library Association: London
- 7 International Federation of Library Associations (2004), <http://www.ifla.org/VII/s42/Index.htm>
- 8 American Library Association Issues and Advocacy Literacy Section (2004), <http://www.ala.org/Template.cfm?Section=literacy>
- 9 Winterman V., Skelton V. and Abell A. (2003), Information literacy in the workforce: the skills gap, and how enterprises are planning to cope, http://www.tfpl.com/assets/applets/info/info_literacy_in_the_workforce.pdf
- 10 Johnson A.M., Library instruction and information literacy [an annotated bibliography], *Reference Services Review*, 2003, 31(4), 385-418
- 11 Oman J., Information literacy in the workplace, *Information Outlook*, 2001, 5(6), 32-43
- 12 Bruce C., Workplace experiences of information literacy, *International Journal of Information Management*, 1999, 19(1), 33-47
- 13 Lloyd A., information literacy: the meta-competency of the knowledge economy ?, *Journal of Librarianship and Information Science*, 2003, 35(2), 87-92
- 14 Bawden D. and Robinson L. , Promoting literacy in a digital age: approaches to training for information literacy, *Learned Publishing*, 2002, 15(4), 297-301
- 15 Donnelly A. and Craddock C., Information literacy at Unilever RandD, *Library and Information Update*, 2002, 1(9), 40-42
- 16 Needham G., Parker J. and Baker K. , Skills for lifelong learning at a distance: information literacy at the Open University, *New Review of Libraries and Lifelong Learning*, 2001, issue 2, 67-77
- 17 Spang L., Marks E. and Adams N., Health Science Information Tools 2000: a cooperative health sciences library/public school information literacy program for medical assistant students, *Bulletin of the Medical Library Association*, 1998, 86(4), 534-540
- 18 Brown J. and Nelson J.L., Integration of information literacy into a revised medical school curriculum, *Medical Reference Services Quarterly*, 2003, 22(3), 63-74

- 19 Jacobs S.K., Rosenfeld P. and Haber J., Information literacy as the foundation for evidence-based practice in graduate nursing education, *Journal of Professional Nursing*, 2003, 19(5), 320-328
- 20 Manuel K., Generic and discipline-specific information literacy competencies: the case of the sciences, *Science and Technology Libraries*, 2004, 24(3/4), 279-308
- 21 Sherwill-Navarro P., Nursing librarian: an educator of future nurses, *Reference Services Review*, 2004, 32(1), 40-44
- 22 Farha A., End-user training in a virtual medical library setting – a case study of an academic medical library in Lebanon, *Library Management*, 2001, 22(8/9), 351-356
- 23 Joint N. (2003), Information literacy evaluation: moving towards virtual learning environments, *Electronic Library*, 21(4), 322-334
- 24 Haraldstad A-M., Information literacy – curriculum integration with medical school's syllabus, *Liber Quarterly*, 2002, 12(2/3), 192-198
- 25 Brettle A., Information skills training: a systematic review of the literature, *Health Information and Libraries Journal*, 2003, 20(supplement 1), 3-9
- 26 Russell T.L. (2005), No significant difference [annotated bibliography], <http://www.nosignificantdifference.org>
- 27 MMU (Manchester Metropolitan University) (2004). The bigblue: case study: the Open University, <http://www.library.mmu.ac.uk/bigblue/oucs.html>
- 28 Booth A. (2004), E is for e-learning: essential ingredient or artificial additive, paper presented at CILIP Health Libraries Group conference, September 2004, <http://www.cilip.org.uk/groups/hlg/conf2004/presentations>
- 29 Bury R. (2004), Developing an online information skills tutorial for NHS users, paper presented at CILIP Health Libraries Group conference, September 2004, <http://www.cilip.org.uk/groups/hlg/conf2004/presentations>
- 30 Boucher C. (2004), Using e-learning to reinforce information skills training, paper presented at CILIP Health Libraries Group conference, September 2004, <http://www.cilip.org.uk/groups/hlg/conf2004/presentations>
- 31 Calarco P.V., Self P.C. and Turman L.U., Teaching a web-based course in health informatics, *Reference Services Review*, 2004, 32(1), 21-25
- 32 Zhang W., Developing web-enhanced learning for information fluency, *Reference and User Services Quarterly*, 2002, 41(4), 356-363
- 33 Germain C.A. and Bobish G., Virtual teaching: library instruction via the web, *Reference Librarian*, 2002, no. 77, 71-88
- 34 Coe J. and Hollister C.V., Current trends versus traditional models: librarians' views on the methods of library instruction, *College and Undergraduate Libraries*, 2003, 10(2), 49-63
- 35 Churkovich M. and Oughtred C., Can an online tutorial pass the test for library instruction ?, *Australian Academic and Research Libraries*, 2002, 33(1), 25-38
- 36 Maynard S., The knowledge workout for health: a report of a training needs census of NHS library staff, *Journal of Librarianship and Information Science*, 2002, 34(1), 17-32

- 37 Skov A. and Sk◊rbak H., Fighting an uphill battle: teaching information literacy in Danish institutes of higher education, *Library Review*, 2003, 52(7), 326-332
- 38 Herzberg J., Poyner A. and Wood A., A project to improve information technology skills for flexible trainees and overseas doctors, *Health Information and Libraries Journal*, 2004, 21(1), 57-60
- 39 Rosenfeld P., Salazar-Riera N. and Viera D., Piloting an information literacy program for staff nurses – lessons learned, *CIN – Computers, Informatics, Nursing*, 2002, 20(6), 236-241
- 40 Botts C. and Emmons M., Developing teaching competencies for instructors in the academic library: a case study, *Public Services Quarterly*, 2002, 1(3), 65-81
- 41 Ware S.A., IDNA for librarians: assessing instructional development needs, *Portal: libraries and the academy*, 2002, 2(3), 401-412
- 42 Peacock J., Teaching skills for teaching librarians, *Australian Academic and Research Libraries*, 2001, 32(1), 26-42