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Applying Evidence-Based Librarianship to Developing Countries Based ICT Training Programs

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Inservice Training

Evidence-Based Medicine

Developing Countries

Preamble~

Although the purpose of my talk is to propose the use of ‘evidence-based librarianship’ techniques to enhance, improve ICT training programs in developing countries, I think my thoughts may apply and assist those in the training activities in all countries. This presentation is specifically focused on the assessment of trainee’s ICT skills *prior* to the day or days of training, to produce the best outcomes for both the trainees and trainer, to assure the most efficient use of resources of money & time. I invite you to think of other EBL techniques that might apply to ICT training activities, and contribute them during the question and answer session at the end. Last winter, I spent a great deal of effort searching the literature and Internet for a pre-training assessment tool to use with professional librarians in a developing country, in ICT training. I didn’t find a tool, but I received several email messages that indicated interest in developing one. Furthermore, I found mention of organizations that are interested in or involved with doing pre-training assessments. The International Network for the Availability of Scientific Publications (INASP) – has goals of employing needs assessments and evaluations in regard to their ICT Training they do under their successful PERI program¹. A recent article in Australian Library Journal about in-service programs for librarians from developing countries noted the value of ‘...customizing the training of each individual or group, so that a match is achieved between what they need to learn and what they actually undertake during the training period..’² The lack of knowledge and indicated interest

inspired me to produce this presentation to raise awareness among my colleagues and encourage discussion and thinking. I hope today's presentation will inspire you to think about ICT training in a new light, as it relates to Evidence-based librarianship, as well as encourage the development of assessment tool which can be used in ICT training.

Introduction~

As information communication technology (ICT) continues to develop in all areas of the world, ongoing technology training is vital for information professionals to keep abreast of technological advances in their practice. United Kingdom researchers Linda Ashcroft and Chris Watts review these points effectively in recent issues of IFLA Journal and Library Review. Most of what they say is that information professionals are increasingly involved with communication technology as continual learners and educators; with their clients, ICT providers and intermediaries. They assert that the decision makers need to recognize the importance of continuing professional development and support staff in maintaining up-to-date levels of expertise^{3,4}. The United Kingdom's Chartered Institute of Library and Information Professionals (CILIP) and the United State's American Library Association (ALA) support Ashcroft's & Watts' perspective. I mention these points to emphasize the importance of continuous professional training, and its central role to our future, including the development of ICT in all areas in the world.

ICT Training~

Now, as we've established the need for ongoing training among our professionals everywhere, let's focus on the training specifically in developing countries. Presenting

training programs in these areas can be challenging even under the best circumstances. The trainer needs to consider many variables including: Internet connections, training facilities, trainee language skills, local Internet use, trainee ICT skills – in addition to the formal material to be communicated to and mastered by the trainees. All of these can have important impact on the training – for example, training with a translator effectively doubles the amount of time needed for training sessions. Another example: use of the Internet by local professionals – if the local professional has access to the Internet, say, at the local Internet Café and simply reads his/her mail weekly and occasionally searches the Web, this individual's limited experience will impact the training sessions. In fact, the trainee's skill level may be the most important of these to consider, as they can vary widely according to the individual. Obviously the individual's skills will impact the training experience in a large way if, say, the training workshop has two trainers and forty trainees. A bigger problem occurs in low-income and developing countries – the inconsistency electrical power and, correspondingly, access to the Internet.

In summary, the trainer must consider many variables as he/she begins to prepare for the training workshop(s). He begins to make backup plans in case the power goes out, or the computer projector doesn't work. He might try to learn some the native language of the trainees to help communicate his points in the workshop, or make his attendees feel more comfortable. But these preparations won't help him if his training outline doesn't take into account, for example, that one of his trainees has not used a computer mouse regularly, or typed web addresses or even read on-line. If he knew the of skill levels of the participants, he could adjust his training outline to meet the needs of majority of the trainees. If he knew that the skill levels varied widely among the participants, he could

break training sessions into novice, intermediate and advanced. Varied workshop exercises could be rewritten to accommodate the different skill levels. He might determine that an attending participant should be considered for a more advanced workshop on the topic.

Assessing workshop participant's skills prior to the workshop appears to a logical method to learn about trainee's skill levels. In brief, the training workshop could be enhanced, or improved by recognizing the trainee's skills prior to the days of training. Now, I will talk how Evidence-Based Librarianship could help in this process.

Evidence-Based Librarianship~

EBL, or evidence-based librarianship is a fairly recent development among medical librarians. Most articles in the literature are authored by or reference an academic librarian at the University of New Mexico, USA, Jonathan Eldredge. Dr. Eldredge proposed a conceptual framework for EBL in a 2000 article in the *Bulletin of the Medical Library Association*, first saying evidence-based librarianship seeks to reintegrate the "science" back into library science⁵. In a 2002 article in *Health Information and Libraries Journal*, author Crumley et al uses a working definition of evidence-based librarianship I find helpful⁶:

‘Evidence-based librarianship (EBL) is an approach to information science that promotes the collection, interpretation, and integration of valid, important and applicable user-reported, librarian-observed, and research-derived evidence. The best available evidence, moderated

by user needs and preferences, is applied to improve the quality of professional judgments.’

You may have heard an additional term, ‘evidence-based practice’ to encourage the use multidisciplinary sources of ...’theories, models, and, most importantly, practical examples that are continually emerging from within other disciplines’⁷ in the whole new area of librarianship. This term and evidence-based librarianship mean essentially the same thing to this presentation -- both have the same goal of finding and applying knowledge.

Coming back to the Crumley article, EBL defines the major areas of librarianship to study, that we deal with in our daily practice: reference, education, collections, management, information access & retrieval and marketing/promotion⁸. Of those domains, I believe ICT training fits best under ‘education.’

I would like to mention two recent studies to illustrate the relevance to EBL and education – the first one was published in the Bulletin of the Medical Library Association in 2000, entitled: *“A two-year experience teaching computer literacy to first-year medical students using skill-based cohorts.”*⁹ This study uses two types of EBL ‘evidence’ as presented by Eldrege in 2000¹⁰: first, a self-assessment survey to assess the incoming medical students and second, a cohort design study which employs the medical student as a user-population to gain knowledge about their success in teaching computer literacy. The second study is from June 2005 issues of Health Information and Libraries Journal, entitled: *“Undertaking an information-needs analysis of the emergency-care physician to inform the role of the clinical librarian: a Greek perspective.”*¹¹ This study uses descriptive survey evidence to gain knowledge about the information needs of the

emergency-care physician. This is the type of EBL evidence that I have chosen to use in learning more about ICT trainees skills prior to the workshop.

EBL and Descriptive Survey Use in ICT Training~

Dr. Eldredge tells us of nine EBL levels of evidence to consider as basic guidelines for comparison.¹² We will use ‘descriptive surveys’ as our evidence for this process.

- first, Eldredge defines a descriptive survey as one that

“seeks to ascertain individuals perspectives or experiences on a specified subject in a predetermined structured manner.”¹³

Turning now to the use of a descriptive survey in ICT training, let’s explore what type of questions should be included. As our subject is knowledge about our trainee’s knowledge in ICT, naturally the questions must include the different aspects of ICT, or subtopics that we are teaching. We have two surveys from the literature to serve as examples, the first from our previously mentioned cohort study¹⁴ and the second from a 2004 article reporting on assessing computer skills in Tanzanian medical students.¹⁵

Surveys should be tailored to the specific audience, in this case, trainees in an ICT workshop. There are resources for designing successful surveys in the literature but I will offer several points to consider in this context. First, in addition to the desired questions you need to know about their ICT knowledge, a survey tool should consider other aspects, primarily considering who the audience, or trainees are. Consider, for example, writing the questions for the intended audience, for professional librarians, health care providers, health care students, or members of the general public. If the trainees are second language English speakers, consider translating the survey into the

native tongue, in case they do not have a strong command of reading & writing English.

Consider also the comprehension level of your trainees when writing the survey. My advice is to keep the wording simple while communicating clearly what you mean.

Finally, make the survey simple to administer as well as easy to analyze objectively what your trainees know about ICT skills. A properly designed assessment tool should give the trainer practical information about their trainees' experience and skills in order to design an effective training outline, or curriculum.

Administering the Survey

The successful survey should be planned carefully in order to allow adequate time for the survey distribution to the individual trainees, survey completion, and return transmission to the trainer for analysis and possible workshop training outline adjustment. As it is essential to receive cooperation from the sponsoring organization that is arranging the training and the individuals involved, it would wise to build this process into the training schedule and discuss it with your training workshop contact to be sure she/he understands. Plan deadlines for each step of the process that allow for flexibility.

Finally, it may be possible to arrange to gather this information digitally, via an Internet-based survey tool such as 'Survey Monkey'¹⁶ or similar, the training site supports it and the trainees are comfortable with the online tool.

Applying Results~

After the trainer has received the completed assessment surveys, adequate time needs to be allocated to compile the results and analyze them with the training workshop outline in

mind. Changes to the workshop outline, to the organization of the entire workshop should be considered towards the goal of meeting the trainee's needs. As mentioned earlier, separate training sessions may be planned to accommodate the range of the skills of the trainees as well as adjustments in the actual outline to allow for the difference in trainee skills levels. Advanced or novice ICT skilled trainees may be considered for different workshops that meet their needs more completely.

Outcomes~

I would like to review some of the advantages in making the effort to undergo the process of assessing trainee's skills prior to training.

First, the trainer has better knowledge about the trainee's needs and has made all possible adjustments to the training workshop. The level of 'surprises' has dropped in the management of the workshop;

Second, the trainees will be presented with training material that is appropriate for their skill level, thus reducing frustration in the learning process from the trainees' perspective.

Third, the workshop can be managed as effectively as possible, given the resources available, for the most efficient use of workshop funds and resources. The key advantage here is the trainer and trainees time is spent largely on the workshop topic.

Those are the primary advantages to using a pre-training assessment tool to improve workshops that I am aware of.

Additionally, the use of **post**-assessment surveys will bring additional information about how successful the workshop has been from the trainee's perspectives, to improve future

workshops as well as provide administrators with the impact that training can have on personnel.

Conclusion

I have presented my suggestions for incorporating pre-training assessment surveys into the training process in ICT training in developing countries. Evidence-based librarianship techniques may offer support in employing this practice to improve the quality of ICT training. Producing successful training programs in developing countries can be challenging under normal conditions. The process that I have presented will help both the trainer and trainees achieve an enhanced workshop experience tailored to the trainee's needs. Additionally, the data compiled from the assessments can help measure the impact these training have made on the trainees, to support decision makers and potential funders about the value of ICT training. I look forward to your questions and comments.

¹ International Network for the Availability of Scientific Publications. INASP Annual Report and Accounts 2004, United Kingdom, Oxford: INASP, 2005.

² Jordan E. Cybrary Skills in the tertiary environment: in-service education for librarians from developing countries. *Australian Library Journal*, February 2003; 52(1) p.45-54.

³ Ashcroft L, Watts C. ICT Skills for Information Professionals in Developing Countries: perspectives from a study of the electronic information environment in Nigeria. *IFLA Journal* 2005; 31(1):6-12.

⁴ Ashcroft L. Developing competencies, critical analysis and personal transferable skills in future information professionals. *Lib Rev* 2004; 53(2):82-88.

⁵ Eldredge J. Evidence-based librarianship: an overview. *Bull Med Libr Assoc* 2000; 88(4) p. 289-302.

⁶ Crumley E, Koufogiannakis D. Developing evidence-based librarianship: practical steps for implementation. *Health Info Libr J* 2002; 19(2) pp. 61-70.

⁷ Booth A. From EBM to EBL: Two Steps Forward or One Step Back? *Med Ref Serv Q* 2002; 21(3) pp. 51-64.

⁸ Ibid.

⁹ Gibson K, Silverberg M. A two-year experience teaching computer literacy to first-year medical students using skill-based cohorts. *Bull Med Libr Assoc* 2000; Apr;88(2):157-164.

¹⁰ Eldredge J, Evidence-based librarianship: an overview. *Bull Med Libr Assoc* 2000; 88(4) p.289-302.

¹¹ Lappa, E. Undertaking an information-needs analysis of the emergency-care physician to inform the role of the clinical librarian: a Greek perspective. *Health Info Libr J* 2005; 22(2), p. 124-32.

¹² Eldredge J, Evidence-Based Librarianship: Searching for the Needed Evidence. *Med Ref Serv Q* 2000; 19(3):1-18.

¹³ Eldredge J. Inventory of research methods for librarianship and informatics. *J Med Libr Assoc* 2004; 92(1):83-90.

¹⁴ Gibson K, Silverberg M. A two-year experience teaching computer literacy to first-year medical students using skill-based cohorts. *Bull Med Libr Assoc* 2000 Apr; 88(2):157-64.

¹⁵ Samuel M, et al. Assessing computer skills in Tanzanian medical students: an elective experience. *BMC Public Health* 2004 Aug 12; 4(1):37.

¹⁶ Survey Monkey.com [homepage on the Internet]. Available from: <http://www.surveymonkey.com/>