

Preparing for Evidence-Based Practice: Revisiting Information Literacy

AS WE REDESIGN NURSING CURRICULA or develop courses for an evidence-based practice (EBP) world, it is important to consider the essential role of informatics. Recent work by colleagues affirms that an informatics infrastructure is an essential ingredient to EBP and patient safety. This work, as well as a national study conducted by Tanner, Pierce, and Pravikoff, has shaped my thinking and provides a foundation for my recommendations.

The study by Tanner and colleagues examined nurses' readiness for evidence-based practice, specifically, their information literacy knowledge and competency and their access to research information (1). Approximately 3,000 surveys were mailed to nurses with a 37 percent response rate. The results of the study were an eye-opener. The following synopsis of the results is reported according to the five components of information literacy established by the Association of Colleges and Research Libraries (ACRL) (2):

- **Acknowledge awareness of a need for information** About 64 percent of respondents stated that they needed information to support their nursing role regularly or often.
- **Identify and retrieve information** A large percentage (42.9 percent) reported that their information resources were totally inadequate; their most frequent source of information was consultation with a peer or colleague. Seventy-five percent stated that they did not search CINAHL, but 59 percent reported success in searching the Internet. As summarized by the authors, "Although there is an awareness, a large proportion is not seeking and using research or evidence to drive decisions" (1, p. 939).
- **Evaluate information for relevance** Sixty-six percent of respondents stated that they never evaluate research reports. Ten percent reported reading research at least three or more times a year.
- **Integrate information into practice** Over half of the sample never used research in their practice.
- **Evaluate the effect of the information on the problem or issue** Almost half of the sample was not familiar with EBP.

The authors conclude that the "value of research among individual nurses and organizations must first be established in order to pro-

mote EBP." They go on to say, "Data-driven informatics models developed to provide information and knowledge will be ineffective if nurses do not identify a need for information, have the resources to access the information, demonstrate knowledge and skills to retrieve and evaluate information and have the wisdom to integrate research findings to support their practice" (1, p. 939).

Information Literacy The results of this study guided me to the literature on information literacy. The American Library Association (ALA) first introduced the concept in 1989. Their definition states: "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 (2, p. 1).

Following the ALA report, many disciplines embraced the concept and incorporated it into their curricula. Nursing education was no exception. As early as 1989, Fox and her colleagues were designing information literacy pathways for an undergraduate nursing program in Colorado (3).

In 1998, the ALA reported on the progress of higher education's information literacy achievements and noted three unmet challenges (4): 1) The incorporation of information literacy in accreditation criteria was not achieved. 2) There was a need to encourage business leaders to foster information literacy skills in their workplace. 3) There was a need to create a research agenda that targets information literacy benchmarks and best practices.

Several schools worked with their libraries to ensure that information literacy skills were part of the curriculum. Two notable works were Rosenfeld, Salazar-Riera, and Viera's pilot

information literacy program for staff nurses (5) and Verhey's undergraduate information literacy program for nursing students (6). More recent works specifically advocate information literacy as a foundation for EBP. Shorten, Wallace, and Crookes describe their integrated curriculum approach for undergraduate students and the results of their evaluation study to examine nursing students' confidence in their information literacy skills (7). Jacobs, Rosenfeld, and Haber present a model for integrating information literacy in all master's degree core courses and cite their website, which contains their tutorials (<http://library.nyu.edu/research/health/tutorial/>) (8).

Despite these initial efforts, it is obvious from Tanner, Pierce, and Pravikoff's study (1) that we need to reexamine our commitment to information literacy. The need to revisit this concept becomes more evident as the health care delivery system becomes more informatics rich and as schools of nursing incorporate more technology tools into the curriculum. A recent assessment from the Educational Testing Service underscored the importance of what ETS defines as Information and Communication Technology (ICT) literacy: "...the ability to use digital technology, communication tools and/or networks appropriately to solve information problems in order to function in an information society. This includes the ability to use technology as a tool to research, organize, evaluate, and communicate information, and the possession of a fundamental understanding of the ethical/legal issues surrounding the access and use of information" (9).

The ICT literacy assessment does not focus on the knowledge of technology but, rather, on the student's ability to use critical thinking skills within a technological milieu. The ETS website lists critical thinking ICT skills as follows (10):

- **Define** The ability to use ICT tools to identify and appropriately represent an information need.
- **Access** The ability to collect and/or retrieve information in digital environments.

Sidebar. Online Resources on Information Literacy

National Forum on Information Literacy A wealth of information, including an extensive list of publications, can be found at www.infolit.org/publications/index.html.

Association of College and Research Libraries Information Literacy Standards Information on these standards can be found at www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm.

Online Journal of Issues in Nursing An article from March 2001 by Barbara Schloman, "Information Literacy: The Benefits of Partnership," is available at www.nursingworld.org/ojin/infocol/info_5.htm.

- **Manage** The ability to apply an existing organizational or classification scheme for digital information.
- **Integrate** The ability to interpret and represent digital information.
- **Evaluate** The ability to determine the degree to which digital information satisfies the needs of the task in ICT environments. This includes the ability to judge the quality, relevance, authority, point of view/bias, currency, coverage, or accuracy of digital information.
- **Create** The ability to generate information by adapting, applying, designing, or inventing information in ICT environments.
- **Communicate** The ability to communicate information properly in its context of use for ICT environments.

You will notice many similarities between the ACRL's five components of information literacy and ETS's critical thinking ICT skills. ETS added two skills — creating and communicating information within ICT environments — and its view of ICT is broader. It encompasses technology tools such as word processors, database search engines, email, instant messaging, web search engines, and concept mapping software. The ICT Literacy Assessment is a two-hour exam that contains scenario-based tasks.

Recommendations and Next Steps As we prepare for a new semester, it is a good time to take stock of what is happening on our campuses. Here are questions to ask and steps to take to ensure that your students have the necessary information literacy skills for EBP.

- What is *your* level of knowledge and skills in information literacy? Do *you* have the necessary skills to build upon and expand this concept within your courses? What resources are available on campus to help faculty main-

tain and expand their knowledge and skills? Are there resources or supports at the library that might benefit faculty and students? Are web resources available?


- Does your institution provide an information literacy course that highlights the five components recommended by the Association of Colleges and Research Libraries? If yes, are you familiar with the course? How are *you* ensuring that students maintain ICT knowledge and skills in your course or program? If students are not successful, approach your library and ask about developing an information literacy program for students. Ask your colleagues in other disciplines how they are addressing this need with their students.
- How does the nursing course/program build upon and/or expand upon information literacy knowledge and skills? Request a

References (See Sidebar for additional resources)

1. Tanner, A., Pierce, S., & Pravikoff, D. (2004). Readiness for evidence-based practice: Information literacy needs of nurses in the United States. In M. Fieschi, E. Colera, & Y. J. Li (Eds.). *Proceedings for the 11th World Congress on Medical Informatics*. Amsterdam: IOS Press. See also Pravikoff, D. S., Pierce, S. T., & Tanner, A. B. (2005). Readiness of U.S. nurses for evidence-based practice. *AJN*, 105(9).
2. American Library Association. (1989, January 10). *Presidential Committee on Information Literacy: Final report*. Chicago: Author. [Online]. Available: www.ala.org/ala/acrl/acrlpubs/whitepapers/presidential.htm.
3. Fox, L. M., Richter, J. M., & White, N. (1989). Pathways to information literacy. *Journal of Nursing Education*, 28, 422-425.
4. American Library Association (1998, March). *A progress report on information literacy: An update on the American Library Association Presidential Committee on Information Literacy: Final report*. Chicago: Author. [Online]. Available: www.ala.org/ala/acrl/acrlpubs/whitepapers/progressreport.htm.
5. Rosenfeld, P., Salazar-Riera, N., & Vieira, D. (2002). Piloting an information literacy program for staff nurses: Lessons learned. *Computers, Informatics, Nursing*, 20(6), 236-241.
6. Verhey M. (1999). Information literacy in an undergraduate nursing curriculum: development, implementation, and evaluation. *Journal of Nursing Education*, 38(6), 252-259.
7. Shorten, A., Wallace, M. C., & Crookes, P.A. (2001). Developing

information literacy: A key to evidence-based nursing. *International Nursing Review*, 48, 86-92.

- Do your accreditation organizations require information literacy as an outcome of higher education? Does your state board of nursing require information literacy? Should these boards be considering this? Dialogue with colleagues.
- How is information literacy assessed? How do librarians or other disciplines measure information literacy? Check out the ETS ICT Literacy Assessment at www.ets.org/ictliteracy/demo.html. There is a free demo, but you must have Macromedia Flash Player loaded on your computer.

Share your successes and your innovations with information literacy in the literature. If you have a program, course, or learning exercises you want to highlight, tell me about it (Diane.Skiba@uchsc.edu). 

8. Jacobs, S. K., Rosenfeld, P., & Haber, J. (2003). Information literacy as the foundation for evidence-based practice in graduate nursing education: A curriculum-integrated approach. *Journal of Professional Nursing*, 19(5), 320-328.
9. Educational Testing Service. (2005). *ICT literacy assessment*. [On-line]. Available: http://www.ets.org/ictliteracy/what_iscit.html.
10. Educational Testing Service. (2005). *Critical thinking ICT skills*. [On-line]. Available: www.ets.org/ictliteracy/assessment.html.

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