Information-Seeking Activity of Rural Health Practitioners

Sandra Matsuda

Joe F. Donaldson
University of Missouri-Columbia

Information-Seeking Activity of Rural Health Practitioners

Sandra Matsuda
Joe F. Donaldson

University of Missouri-Columbia

Abstract: Qualitative methods were used to identify the information-seeking activity (ISA) of rural health practitioners (non-physicians). Conditions shaping ISA were time, resources, and barriers. The primary strategy used was connecting with resources, particularly people. ISA led to consequences of problem resolution, greater competence, or more questions.

Objectives

This study identified how context influenced the information seeking activity of allied health practitioners as well as the strategies and resources commonly used in practice. How rural allied-health professionals acquired, filtered, and created information they needed in practice was examined from the perspective of information *seekers* rather than *providers.*

Summary of Problem

Discovering how rural practitioners learn and use information-seeking skills is needed to understand the competencies required of today=s rural health practitioners. This need to discover information-seeking behaviors used in practice is even more crucial today because of 1) increased patient expectations and 2) an explosion of health-related information. Historically, patients seldom questioned a practitioner's decisions. ">Today's consumers are demanding more--and more detailed--health information and are taking a more active role in making medical and lifestyle decisions" (Resources for Rehabilitation, 1998, p. 9). Rural practitioners today seldom have enough time to access and critically appraise all the information that is available and often do not have the technological tools or skills needed to access and manage information effectively. In an information-driven system, health professionals must be skilled in finding patient, scientific and technological information efficiently. Competencies needed by health practitioners were identified by the Pew Health Professions Commission (1995) as the ability to (a) use technology appropriately, (b) manage information, and (c) continue to learn. As the importance of information-technology grows, rural practitioners may have special challenges and opportunities in gaining competency in information seeking. Findings from this study can be used by both educators and practitioners to prepare students for rural practice and to strengthen the information-seeking skills of rural practitioners through continuing learning opportunities.

Theoretical Framework

Information-seeking activity was viewed as *situated learning* where context was an important part of the learning event, not peripheral to it (Rogoff, 1984). Practitioners used the knowledge, people and tools in their settings in seeking information. The activity was distributed over time, space, and people, not just an individual's thought process. This perspective placed importance on the *distributive* nature of learning and on the tools involved (Star, 1996). It drew together *what* was learned in practice with *how* and *where* it was learned and used.

Method

A grounded theory approach was used to discover the conditions, strategies, and consequences of information-seeking activity (Strauss & Corbin; 1990). One researcher spent a year working in two rural nursing homes as a practitioner and participant-observer. This allowed close examination of the events, questions, settings, tools and activities of information seeking among 16 practitioners who were physical, occupational, or respiratory therapists, radiological technologists, and speech and language pathologists.

Units of analysis included individuals as well as clusters of professionals working in the same nursing homes. Three data collection strategies were used: (1) participant-observation, (2) document collection, and (3) in-depth interviews including use of the critical incident technique (Flanagan, 1954). Observations and sixteen in-depth interviews were the primary data sources. Secondary sources, used to expand the scope and insure trustworthiness, included printed documents: manuals, newsletters, surveys and postings found in the work setting. The triangulation of data gave a variety of perspectives on the activity.

An inductive method was used to develop themes and codes around the primary research question of how rural health practitioners seek information (Boyatzis, 1998). Two questions emerged from the data: (1) what strategies, resources and tools do rural practitioners use and (2) how does the context of practice influence their information-seeking. Subject checks, and sorting by an outside coder were done to increase the trustworthiness of the interpretation.

Findings

"Making connections" emerged as a core information-seeking strategy. This strategy included making connections with internal resources of their own knowledge, skill, and ability to observe, remember, reflect, and frame questions. It also included making external connections with human and non-human resources. Human resources included professional colleagues, coworkers, supervisors, directors, consultants, patients and family, equipment providers, administrators and educators. Non-human resources included the tools of telephones, fax machines, and CB radios along with printed materials that were easily accessed and read. Computers and clinical literature were not observed to be primary resources but were perceived as potentially good sources. Practitioners often drew from one another's experience or previous situations in recognizing discrepancies, posing questions, and identifying solutions. A primary strategy used by everyone was talking with others, often by phone, when talking face-to-face was not practical. Faxing, mailing and computers were used in more limited ways. Practitioners spoke of "taking the technology with you" and "knowing how to get on the telephone and knowing who to call" as important strategies.

Conditions impacting information seeking included the urgency and importance of the questions, the time and resources required to answer them, and barriers encountered. Questions that were too complex, lacked importance, urgency or benefit were not pursued. Barriers to being able to access information fell into three categories: (1) internal barriers like pride, anxiety, resistance, and lack of skill or knowledge. (2) Intangible barriers like lack of time, long distances, bad weather, restrictive policies, and isolation sometimes required practitioners to rely on their own resources rather than seek outside information. (3) Tangible barriers such as lack of computers and access to e-mail and Internet, libraries and databases, equipment, money and space also restricted access. Barriers in the design of a facility, what is referred to here as the "setting space," also limited access. Practitioners expressed preferences for more computer-linked access to medical records, other people, and resources as well as more time and opportunities for continued learning and education "closer to home."

Consequences of information seeking led to resolving clinical problems, to gaining competence, and to generating further questions. Patients often benefited from practitioners successfully finding information that helped them resolve clinical problems. Successful seekers became providers of information and gained competence through using it in their practice. Sometimes seeking information resulted in not finding it or in identifying new problems that generated more questions and continued the process. These findings are summarized below:

Internal connections were made in the *problem space*, where conceptual connections were made when a discrepancy or problem was recognized, a question posed, and solutions or sources identified. The strategies used involved tapping into the personal, *process knowledge* of "know-how" as well as more codified knowledge (scientific and technical) of their professions (Eraut, 1994; Schon, 1987). External connections were made in a *setting space* by connecting to people and by using tools, resources, and events needed to access information.

Information seeking was tied to having both time and resources as illustrated below:

Locals and Travelers

"Local" practitioners lived and worked in one or two locations while "travelers" dropped in and out of many practice situations and carried their tools with them. Travelers were bound by employment contracts and sought information from outside the setting, such as from corporate specialists. Travelers had less time in a setting but broader connections and resources than did locals who had more time in one setting but fewer resources. Social bonds to their communities connected locals more than travelers. Having both time and resources and using a full spectrum of resources available tended to enhance effectiveness of information seekers.

How did context influence information-seeking activity of rural practitioners?

Rural practitioners' connections to (1) the communities and (2) the building, staff and work space in which they practiced influenced their information-seeking activities. Locals with stability and longevity in a setting accumulated not only material resources but "social capital" or an investment in relationships (Coleman, 1988) both within the facility and the community. For example, an occupational therapist knew what choir parts local physicians sang. Because the

physicians trusted him, he was able to get information quickly from them. He was also a meals-on-wheels deliveryman, a volunteer fireman, and a basketball coached. He was as likely to exchange information in those activities as in his office. Locals also had access to more interactions and resources within their buildings than travelers. When practitioners' work space and time overlapped with that of other practitioners, information was sought within the facility.

Traveling practitioners, on the other hand, commuted among as many as 90 different communities and were connected to a wider variety of resources, both human and non-human, than locals. They carried a limited number of resources with them and connected by phone, fax, or CB radio to central offices, corporate consultants, and fellow practitioners who were often miles away. They drew on resources at a corporate level and at a personal level removed from their work settings rather than engaging in face-to-face information seeking locally. A physical therapist, for example, would reflect on clinical questions while driving between assignments and later contacted his company's educational specialist or a classmate to access information.

Time pressure also increased the importance of the immediate setting. Practitioners tended to use human resources more because they were accessible. In "hot action" situations, rural practitioners would use resources immediately available (Eraut, 1985, p 128). In general, locals had a dense, close-knit set of resources that allowed them to make greater use of social and face-to-face community connections. Travelers, like "boundary crossers" described by Engestrom and Cole (1997), tended to make use of a geographically larger and loosely-knitted network resources. They often connected using communication technology rather than face-to-face interaction. Both locals and travelers developed support networks and connections but these differed by setting and the experience of the practitioner. Lemke, writing about networks of activities, suggests that "individual trajectories that move between these networks also knit them together, also open them up to change due to one another's influence" (1997, p. 307).

The content and location of a therapy room impacted the way information was sought. At Hollyhock, a facility staffed primarily by "locals", therapy rooms were personalized with files, books, and catalogues while Edgewater, staffed by traveling therapists, included fewer personal or informational resources. Those practitioners working near activity hubs, such as nurses' stations, were involved in more information exchanges and so had better access to certain information. Dana, an occupational therapist, went to the nurses station to ask questions and said she would "find out a lot ... by asking about one thing and they would talk about other things." A similar kind of "collateral learning," as opposed to "direct" learning, was reported among physicians by Slotnick (et.al., 1998). Travelers had fewer hallway conversations or curbside consultations with regular home employees since practitioners were not in the same place at the same time. However, they had more frequent communication with outside consultants and a greater variety of interactions in multiple settings. Travelers were "married to their beepers" and made heavy use of communication technology wherever they were located. They moved in and out of facilities and situations quickly, often engaging in fragmented work sessions. For both locals and travelers, "the ability to choose and locate relevant resources based on needs, availability and limitations of the situation" (Candy, 1991, p. 465) was a needed skill.

Conclusions

1. Information seeking activity is regulated by a work environment that dictates demands as well as resources. The work environment was a source of constraints as well as resources. The demands imposed by workload, time-pressures, the work space, the weather, conditions of traveling or mediating messages through imperfect technology all served as constraints to seeking information. Environmental stresses clearly impacted the type of information and method of information-seeking practitioners used. The phone and conversations took precedent over pursuing written information. Urgency and conservation of resources such as time and money often controlled to what length or expense a practitioner could go for information. The rural practice settings also offered resources that supported information-seeking activities. The rural work environment offered time, space, and relationships of stability and longevity for some locals and other broader connections for some travelers.

2. Rural practitioners are influenced by their environment and play an active role in modifying it as they engage in information-seeking activities. While the environment influenced practitioners, they also played an active role in modifying it as they engage in information-seeking activities. *Who* and *what* were available shaped the information-seeking activities practitioners engage in. Expertise often resided in the person who knew the most about the situation, regardless of status or job. Practitioners were extremely practical in using the people and resources in their settings. Practitioners also modified the environment through their information-seeking efforts. Practitioners needed to "take the technology with them," according to one interviewee. Travelers also drew on their experience in other places to bring fresh perspectives to bear on the information needs of a rural setting.

3. Rural practitioners can be empowered by their environments in seeking information. The important or determining factor may not be the *quantity* of resources but the *quality* of the one's that are available and the perseverance and commitment of the practitioner. The larger task may not be finding information, as much as filtering the information found. To be able to critically appraise the value and appropriateness of information used in solving a clinical problem may depend more on inner resources than external ones. Being good stewards and sharing the resources at hand can be as powerful a resource for information seeking as having the latest in computer technology on every desk. Likewise, having the "coping technology" to accompany the learning technology may be needed more than having the latest database on a computer and no skill in access it.

4. Investment in a community of practice can make it easier for rural practitioners to seek information and to serve as information resources. Those practitioners with an investment in "social capital," i.e., relationships within communities of practice, often were effective at getting the information they needed and in sharing it.

Implications and Recommendations

This study led to the following recommendations for practice, education, and research. Those in practice environments need to (1) value informal channels of seeking information as highly as more formal channels, (2) support appropriate technology use, recognizing the

need for information specialists, funding, and time for startup and ongoing training and (3) provide spaces and tools that encourage the creation, sharing, and use of information. Environments are needed that enhance natural, casual interactions, that facilitate information sharing by multiple means, that resolve tensions between what is public domain and what is private domain, that encourage development of alternative routes, and that acknowledge there are many paths to securing the salient information to resolve a clinical problem.

Educators need to: (1) reconsider assumptions about the optimal skills and tools needed in practice and how to teach the skills of using "the clues at hand," valuing and using inner resources, discerning when to use one's own judgment and when it is insufficient; (2) teach strategies that have not been taught directly such as how to recognize practice settings that support one's preferences in information-seeking, how to customize tools, and how to negotiate for technical support. (3) allow students enough time in practice settings to become "legitimate" participants (Lave & Wenger, 1991).

Further researchers needs to: (1) explore the information-seeking activities of groups of practitioners in work teams among and across professions; (2) replicate this study in comparable urban nursing homes; (3) evaluate the effectiveness of information-seeking activities identified in this study and (4) explore the internal process of how practitioners frame or define problems and the consequences of those decisions.

References

Boyatzis, R. E. (1998). Transforming qualitative information: Thematic analysis and code development. Thousand Oaks, California: Sage Publications.

Candy, P. C. (1991). Self-direction for lifelong learning. San Francisco: Jossey-Bass.

Coleman, J.S. (1988). Social capital in the creation of human capital. American Journal of Sociology 94 (Supplement): S95-S120.

Engestrom, Y., & Cole, M. (1997). Situated cognition in search of an agenda. In D. Kirshner, & J.A. Whitson (Eds.), Situated cognition: Social, semiotic, and psychological perspectives (pp. 310-308). Mahwah, New Jersey: Lawrence Erlbaum Associates.

Eraut, M. (1994). Developing professional knowledge and competency. Britol, PA: The Farmer Press.

Flanagan, J. C. (1954). The critical incident technique. Psychological Bulletin, 51, 327-358.

Lave, J., & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. New York: Cambridge University Press.

Lemke, J.L. (1997).Cognition, context, and learning: A social semiotic perspective. In D. Kirshner, & J.A. Whitson (Eds.), Situated cognition: Social, semiotic, and psychological perspectives (pp.37-56). Mahwah, New Jersey: Lawrence Erlbaum Associates.

Pew Health Professions Commission. (1995). Critical challenges: Revitalizing the health care professions for the twenty-first century. San Francisco: UCSF Center for the Health Professions.

Resources for Rehabilitation. (1998). Making wise medical decisions: How to get the information you need. Lexington, MA: Author.

Rogoff, B. (1984). Introduction: Thinking and learning in social context. In B. Rogoff & J. Lave (Eds.), Everyday cognition: Its development in social context. Cambridge, MA: Harvard University Press.

Schon, D. A. (1987). Educating the reflective practitioner. San Francisco: Jossey-Bass.

Slotnick, H. B., Kristjanson, A. F., Raszkowski, R. R., & Moravec, R. (June, 1998). A note on mechanisms of action in physicians' learning. Professions Education Research Quarterly, 19 (2), 5-11.

Star, S. L. (1996). Working Together. In Y. Engestrom & D. Middleton (Eds.), Cognition and communication at work (pp. 296-318). New York: Cambridge University Press.

Strauss, A., & Corbin, J. (1990). Basics of qualitative research. Newbury Park, CA: Sage.