Creating mosaics: The interrelationships between knowledge and context.

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Abstract: This qualitative study analyzed the interrelationships between knowledge gained in continuing education programs and the context in which professionals practice. Findings indicate that the process of constructing a knowledge base was affected by the structural, human resources, political and symbolic frames of the context of practice.

How do professionals develop their practice? What are the relationships between knowledge presented in continuing education programs and the use of that knowledge at the work site? The value of continuing education programs and the application of the knowledge generated in these programs has been studied, questioned, and analyzed. Evaluation of continuing education has traditionally consisted of studying if participants apply new information upon returning to their work site. These studies report mixed and often contradictory results. Evaluation studies traditionally remove the learner from the context in order to isolate and study how continuing education is utilized. However, it is this very isolation that can lead to confusion in evaluation results.

The purpose of this presentation is to describe a research study that emanated from questions raised about the value of continuing education programs. The intent of this study was to describe and analyze the interrelationships between knowledge presented in continuing education programs and the context in which professionals work.

Theoretical Framework

The interrelationships of two major concepts, knowledge and context, were explored in this study. Knowledge, was viewed as the social construction of information that occurred through a process of meaningful learning and perspective transformation. The work of Ausubel (1978, 1986), Mezirow (1990, 1991), and Novak (1984) was reviewed and synthesized to describe this view further. These authors were selected because their work frames a constructivist view of knowledge that provides insight into how professionals develop knowle dge in clinical practice. Constructivist's believe that individuals learn by linking new information together with past experiences.

Bolman and Deal's (1991) four organizational frames were selected as a framework for examining the context of professional practice. The four frames include the structural, human

resources, political, and symbolic frame. Bolman and Deal (1991) developed these four frames to provide different lens with which to view organizations.

The structural frame draws on concepts from sociology and emphasizes formal roles, defined relationships, and structures that fit the organizational environment and technology. This frame includes organizational issues such as a division of labor, rules, policies, and procedures (Bolman & Deal, 1991).

The human resource frame originates from organizational social psychologists. Within this view, it is believed that organizations have individuals with needs and feelings that must be taken into account so that individuals can learn, grow and change. (Bolman & Deal, 1991).

The political frame is based on the discipline of political science and views conflict as part of organizational processes. Within this view, the organization is seen as groups competing for power and resources. The tools of this frame are bargaining, negotiation, coercion, and compromise. (Bolman & Deal, 1991).

The symbolic frame originates from the discipline of anthropology. It abandons rationality and sees organizations as tribes with cultures propelled by rituals, ceremonies, stories, heroes, and myths. Bolman and Deal (1991) believe that organizations with ambiguous goals, uncertain technologies, and varied stakeholder groups tend to develop the symbolic frame more fully as a way to deal with the ambiguity.

Research Questions

This study used an interpretivist framework to search out the relationships and meanings that knowledge and context have for each other. The following research questions were advanced to guide this inquiry:

1. What makes knowledge meaningful in the context of professional practice? 2. How is the creation of knowledge affected by the different frames (structural, political, human relations, symbolic) of the context in which professionals practice? and, 3. What are the interrelationships between knowledge, context and professional practice?

Methodology

Forty semi-structured, tape-recorded interviews were conducted with registered nurses from hospitals, nursing homes and home care agencies. The interviews were conducted 9-12 months following participation in a continuing education program. Nurses were asked questions about their learning, their work environment, and their clinical practice. Three data analysis strategies were employed in this study. First, following each interview a concept map was created to represent the major themes and concepts discussed in the interview. Second, a computerized

category system was created for coding the transcribed interview data. Third, a system of matrices was developed to analyze what all participants in the study said about the specific research questions posed. Dependability and confirmability of study results were assessed using a qualitative data analysis audit (Lincoln & Guba, 1985).

Results

Making Knowledge Meaningful in the Context of Clinical Nursing Practice. Multiple factors identified in this study indicate how knowledge is made meaningful in the context of practice. A major finding of this research demonstrated that the information presented to nurses in continuing nursing education (CNE) programs is not transferred directly to clinical practice. Rather, nurses move through a process of thinking about the information, identifying their feelings about the information and acting on the information in a variety of ways. What makes the knowledge meaningful is the fact that nurses go through this complex process rather than simply adopting and applying the information.

Nurses construct their own knowledge base by linking and assimilating new knowledge with their past and previous knowledge and experiences. They link concepts together in ways that have particular meaning to them. For example, when asked how continuing education effects practice one nurse responded as follows, *"Well, I guess I don't think of it like that. I mean I can't really say what helps me deal with what. I think of it more like creating mosaics. I mean, you have all these little pieces that come from all over and in and of themselves they don't mean much, but when you put them together you have a beautiful picture. Continuing education and client care are more like that for me. I take little pieces of what I learn from many places and put them together until I have my own picture."* The metaphor of a mosaic depicts the idea of assimilation and integration of concepts.

Nurses reported that before knowledge presented in CNE programs becomes meaningful they must think about it, determine how the knowledge is relevant to their practice, and analyze how it meets the needs of their clients. Additionally, the knowledge must include enough specifics that they can draw on and link with their current practice.

An example of how knowledge is relevant to practice and plays a part in constructing the knowledge base comes from a nurse who described how the needs of her client in an emergency situation fostered her recall of leaning from a CNE program. She described, *"We had a chest trauma where the person hit the steering wheel, where eventually he did end up with a cardiac tamponade. . . We watched for signs and symptoms of that. It was very obvious with some of the things they talked about [in the CNE program]. . . Like the heart sounds, the hypertension, the tachycardia. Another big one that I noticed was pulse pressure. These are things that are brought out and you say, "Oh, I remember. [The speaker] talked about that."*

Participants also reported that their feelings about the information influence the construction of their knowledge base. Nurses reported that CNE programs reaffirm their knowledge, revitalize their professional development, increase their confidence and facilitate personal growth. The

following quote depicts the feelings nurses have in constructing their knowledge base. *"I wouldn't say there was a lot of new information in the program, but the program only reaffirmed what I think about dying. It reaffirms for people that it's important to do the right thing even though no one agrees with me."*

Finally, nurses reported that to construct a knowledge base they must take some action on the information. The action is necessary so that the new concepts are linked with previous or existing information. Nurses took this action through discussion and dialogue, by networking at the CNE program and by trying out new things presented and watching the results. Nurses reported that observable client results encouraged the use of new knowledge. For example, the following nurse described how her staff had tried a bladder retraining program learned in a CNE program with a resident in long term care. This nurse reported that the intervention worked. She went on to say, *"I think just with the proof the staff could actually see that there were some effective methods, certainly based on the individual resident, that worked. Now they're more willing and actually at times on new admissions implementing changes without a cue from any of the supervisory staff."*

Impact of Context on the Formation and Use of Knowledge. The findings of this study indicated that the context in which nurses practice had a great impact on their use of knowledge from CNE programs.

Structural frame. Nurses identified that the structural frame of the organization was seen as a hurdle. It was identified as a hurdle in the sense that nurses were very aware of its existence, they knew the location, it may stand in the way of the identified goal, and yet, they knew precisely how to get around it. Nurses reported that the structural frame often provided a temporary block to their use of knowledge, but they could usually figure out how to manipulate the rules and not let this frame stand in the way of their client's needs. One nurse described how she attended a CNE program and learned a new type of bowel regime that was effective for gerontology clients. She explained how she took this information back to her agency. *"Well, right now we're [trying] a bowel regime. Not officially because we think the agency would come in and say, "Oh, well, we have to get this approved first." But basically we are doing PO [oral] meds and Metamucil, in consecutive days. So we're just doing it on three patients to try to change from doing suppositories and enemas all the time. After the CNE program where this was suggested we all got together and figured it out and wrote it down, formalized it and did it. We don't want to go public with it until we do the trial because probably the agency might think, Well, this has to be approved by this and that committee."*

Another nurse described how she attended a CNE program on death and dying. In that program she learned how it is important at the end of a client's life to be able to assist that person in meeting their goals. She discussed how she implemented that learning despite the structural frame of the context in which she practiced. *"Well, [the hospital] is still pretty conservative. I'd like to tell them to lighten up a little bit. This young man who died in February we had a Harley Davidson motorcycle brought to his bedroom on his birthday because he loved motorcycles. We're pretty lucky in that [the unit] is located on a separate section of the hospital. [The unit] is on the ground floor and we have a separate entrance so you can sneak things like that by . . . this was a kid that you couldn't help falling in love with. I mean genuinely, wonderful young man. . . .*

we decided that he needed to have this Harley, and we actually let him get on it, and the man who loaned it, was taking him through the halls on it. Just because he needed it. We have been known to sneak pets in too. Sometimes you have to push the rules aside to do what the patient wants because this is the end of their life."

Human relations frame. Nurses reported that the human relations frame was mostly positive and facilitated their use of knowledge within the context of their practice. Nurses indicated that peers and mentors were encouraging and willing to try out new things that they brought back from CNE programs. Nurses identified that mentors in the form of preceptors and nurse managers had the most influence in how they worked with the new knowledge. The more encouraging, open, and flexible these individuals were the greater the use of knowledge. The following quote was typical of nurses' comments when discussing this organizational frame. *"I think they're [nurse managers] very supportive. Any information that we get from continuing ed., they're more than willing to let you implement or try out. There are no barriers that way."*

Political frame. The political frame of the organization had a significant impact on how nurses used new information in clinical practice. Money, power, change, gender, and time with clients (as a function of resource allocation) all affected how nurses constructed and integrated their knowledge base in practice. When asked about the politics of their organizations and how the politics affected their use of knowledge, nurses would respond that they tried to stay out of those issues. By staying out of the politics nurses limited their use of new information in practice. The following nurses comments are typical of nurses beliefs in this area. *"I guess the political issues always get in the way. When you feel disempowered you tend not to use it."* Another nurse expressed the frustration with the political frame of the context of her organization. *"Ideally, I'd love to take this information and say we're going to implement this system. It's going to be rough going at first but everyone's going to do it and once we get it up and going it really will be better. My hands are tied because I don't have the power to do it. I know that we need and I know that it can be better than it currently is, but I don't have the power to do it and it's frustrating to me."*

Often the political frame served as a screen or a filter to new knowledge even entering the context of practice. Nurses made judgments about how well the information would "fit" in their practice arena. Rather than deal with conflicts that can be created by some of the knowledge nurses posses, they tend to screen it out of their knowledge base.

Symbolic frame. The symbolic frame of health care organizations seems to arise from the issues identified in the political frame. The issues of gender, power, change, money and time all act as artifacts of the organizational culture. Nurses recognized that the political issues are imbedded in the organization as part of the culture and thus, a general assumption exists that change will be difficult. In a very real sense the political issues define the organizational culture.

As a result nurses tend to avoid political issues and not deal with them in either the political or symbolic frame. Nurses are successful at going around the structural issues because they tackle them directly, but they tend to avoid the political issues. It is then these same political issues that significantly impeded the incorporation of new knowledge in the context of clinical practice.

Review of Findings

In reviewing these findings, it is evident that nurses who attended CNE programs used this new information to continually construct and reconstruct their knowledge base. The new information learned in CNE programs was added to a nurse's knowledge base through a complex process of thinking about the new information, acting on or trying out the new information and identifying their feelings about the information.

Finally, this complex process occurred in a particular context and the context shaped the developing knowledge base as well. The structural frame served as a temporary hurdle to the use of new knowledge. The human resources frame facilitated the use of new knowledge through positive interpersonal relationships. The political frame served as a screen to filter out new information. Finally, the assumptions imbedded in the symbolic frame contributed to nurses either feeling valued or devalued.

Study Implications

This study indicated that the role of continuing education is demonstrated to be much more than simply designing programs so that professionals can adopt the information in their clinical practice. The role of continuing education is facilitating a process of learning, reflection, growth and change. Continuing education programs were demonstrated to serve as a linkage in the process of creating mosaics for professional practice. The greatest impact of continuing education comes from facilitating the integration of multiple forms of knowledge. However, linking continuing education and personal growth is not always a comfortable position for educators. It is a much more complex view of the learning process and makes the continuing education provider accountable for a great deal more than presenting information. This implies that the educator then becomes a facilitator of the learning process rather than developer of specific program content.

This study also has implications for managers. It is essential for managers to understand and be able to deal with the political frame of the context in which they practice. Managers also need to be able to assist staff in dealing with the political frame and help discourage staff from filtering out new knowledge for practice based on organizational politics.

Finally, this study demonstrates the immense learning that clinical practice provides. Continuing educators need to establish learning programs where staff recognize the learning embedded in their clinical practice and begin to "tell their stories". It is through discussion, dialogue and reflection on clinical cases that professionals will continue to construct knowledge bases that inform and transform their professional practice.

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