EXPERT PRACTICE AND CAREER PROGRESSION
IN SELECTED CLINICAL NURSE SPECIALISTS

by

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(ABSTRACT)

All professions have practitioners who are considered to be experts. Less is known, however, about how these people achieve this level of excellence and about the factors that influence the attainment of expert practice in any profession.

Using acknowledged expert nurses as a focus, this dissertation explored and evaluated the following factors that the literature suggested affect the progression from novice to expert: information-processing, problem-solving, and intuition abilities; mentors and mentoring; motivation and education; experience; and institutional incentives. An additional factor -- intrinsic motivation, which was not identified a *priori,* emerged in the course of the research.

The conceptual framework used for this study was the novice-to-expert progression developed by Dreyfus & Dreyfus and applied to nursing by Benner. Benner's framework comprises novice, advanced beginner, competent, proficient, and expert.

A qualitative case study method was used employing in-depth interviews of ten clinical nurse specialists (CNSs). Data analysis was conducted following standard procedures for qualitative descriptive analysis.

The study demonstrated that all of the CNSs progressed through each of Benner's stages during their careers. The following factors were identified as influential in their achieving expertise: information-processing and problem-solving; mentors and mentoring; motivation and education; experience; intrinsic motivation. Institutional incentives and intuition played very weak roles and were not considered influential in achieving expertise, although the CNSs stated that the latter was an important element of their practice.

This study has several implications for practice and research. With respect to practice, there is a clear need for mentoring programs, graduate education, internship programs, a stronger emphasis on experience, and policies to assure patient assignments are correlated with the level of the practitioner. Further research is suggested on all factors identified, especially the clinical ladder. The study contributes to adult education theory by clarifying the factors which foster the attainment of expertness, and to practice by suggesting areas in which interventions and innovation might be effective.

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I would like to thank each member of my committee for their guidance and support. All of their recommendations enhanced the quality of this study and provided me with many new insights. The assistance with understanding qualitative research, provided by Virginia Gover, is particularly appreciated. Her commitment to education and nursing is truly an inspiration.

I am especially grateful to Marcie Boucouvalas, my committee chair, for her continual direction, not only through the process of completing this dissertation, but throughout my doctoral career. She is a true adult educator who exemplifies scholarship and excellence in her teaching.

Finally, a very special thank you to the ten women who participated in this study. Each one brings to the nursing profession many attributes, but the one most outstanding is their love of nursing and their passion for excellence. Their contributions have renewed my appreciation for the profession.

Dedication

This dissertation is dedicated to my husband, Jim McGregor, without whom the long journey to the completion of this manuscript surely would have been more arduous and less certain. He is my mentor and critic, and his ardent support, guidance, and patience throughout this venture have been invaluable. Jim's insistence upon accuracy and excellence, tempered with his continued encouragement, provided the motivation and inspiration for much of my efforts. I am deeply and truly indebted to this man with whom I share my life and with whom I enjoy the best of all possible partnerships.

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INTRODUCTION

BACKGROUND

Experts are people who are respected and admired by peers for their knowledge and skill. The expert is the role model, teacher, and mentor for less experienced colleagues. The expert can be identified in any work setting as the person to whom most go for assistance. Experts have an intuitive sense of what may go wrong as well as predictive skills of what to do in any given situation. They are the leaders, either formally or informally, and are the people who set standards for practice.

Why and how do some people achieve expert status? Are there common characteristics among experts in their personal and professional lives? What occurs during personal and professional careers to facilitate the transition to expert practice in a field?

Informal general observation suggests some commonalties. Experts tend to be independent, highly motivated, and goal-oriented in all their activities. They are people who continually pursue opportunities, usually to advance their personal or professional lives. They are extroverts, have high energy levels, and are assertive and self-confident. Experts are people who thrive on new experiences and explore

all possibilities to find answers to questions or learn
something new. Yet all these require further investigation.

Research on Expertise

Studies on expert cognition have dominated the
literature. Research on the cognitive abilities of experts
expanded in the 1970's and 80's following the investigation
by DeGroot in 1966 (cited in Wood, 1985) of experts'
abilities in problem-solving. Studies at that time revealed
that experts process information differently than novices,
they have expanded knowledge stores, and possess advanced
abilities in perceiving solutions to complex problems (Chase
& Simon, 1973; Chi, Feltovich, & Glaser, 1981; Kassirer &
Gorry, 1978; Patel, Groen, & Frederiksen, 1986; Shoenfeld &
Herrmann, 1980).

The cognitive abilities of experts with respect to
memory have been studied by Anderson (1982), and the skill-
acquisition changes that occur along a continuum from novice
to expert have been described by Dreyfus & Dreyfus (1980;
1986).

Another area that has been studied is the intuitive
abilities demonstrated by experts. The literature is
replete with research from varied professional disciplines
confirming the use of intuition by experts in decision-
making activities (Bastick, 1982; Benderley, 1989; Benner,

1984; Isenberg, 1984; Pyles & Stern, 1983; Rew, 1990; Schraeder & Fischer, 1987; Silverman, 1985).

Other factors, such as mentoring (Collins & Scott, 1978; Darling, 1985b; Fagan & Fagan, 1983; Kinsey, 1986; Roche, 1979; Vance, 1989/1990), motivation and education (Boshier, 1971; Houle, 1961; Wlodkowski, 1986), experience (Benner, 1984; McCall, Lombardo, & Morrison, 1988; Pyles & Stern, 1983), and institutional incentives (Balasco & Black, 1988; Benner, 1984; Davis, 1987; Jones, Jenkins, & Johnson, 1988; Perry, 1989; Zimmer, 1972;) have also been mentioned as influencing progression toward expertise.

Research on expertise in the nursing profession has primarily been conducted by Benner (1984), who, following the research of Dreyfus and Dreyfus (1980; 1986), verified that many nurses advance through identifiable stages from novice to expert. She confirmed this finding through observations and interactions with nurses in a variety of clinical settings and at various stages in their professional careers.

STATEMENT OF THE PROBLEM

Experts have been examined with respect to their intellect, problem-solving abilities, and skill development. What has not been investigated, however, is _how_ one attains expert practice in the nursing profession and the factors

that influence that progression. Many professions have people who have reached this level of performance and it is generally known who these people are and what sets them apart. They can be identified by their sound knowledge base, attained either through formal or informal education, years of experience, error-free performance, and a seemingly effortless approach to complex problems.

The notion of expertness is common in the education literature, but information is lacking on how people achieve the status of expert -- what have they done throughout their lives that directed them toward this goal, by whom and how were they influenced, what and who motivated them?

THE RESEARCH QUESTION

The identification of stages and performance characteristics at each stage toward excellence is important for educators and professionals. An additional step, however, is essential if the adult education field is to be effective in fostering expertness. This task is to identify the factors that influence the progression toward expertise.

Using acknowledged expert nurses as a focus, this dissertation addressed the following question: What factors are perceived to influence the progression of the individual from novice to expert in the nursing profession?

    1.   What role do the following five factors play in

this progression?

- Information-processing, problem-solving, and intuition abilities;

- Mentoring;

- Motivation and education;

- Experience;

- Institutional incentives.

2.   What other factors emerge as influential in this progression?

FACTORS RELATED TO EXPERTISE

This dissertation will address the question of how nurses achieved their level of expertise by exploring five critical factors which seem to influence expert progression. These factors have been drawn from the literature on expertise and have been identified as having a major impact on the development of expert practice in a variety of professions. Each of the factors will be discussed in turn and reviewed more fully in Chapter Two.

Information-Processing, Problem-Solving, and Intuition. This section includes the activities and performance criteria of expert practitioners. Several salient features become evident when investigating expert practice. The first is the analytical abilities of experts, the second is the sophistication with which experts solve problems, and

the third is the use of instinct or intuition in decision-making. All of these areas are consistently identified as factors related to expertise. Each will be explored in this dissertation.

Role of Mentors. The mentoring process and the role that a mentor has in leadership development and professional advancement is well-founded in the literature. Expertise progression could possibly occur in isolation, but more likely it develops with the guided direction of an experienced and concerned mentor. Specific factors related to mentoring and the influence this relationship has on career progression will be examined.

Motivation and Education. The achievement of mastery and excellence is closely and obviously aligned to the notion of inducement and the pursuit of learning. Specific motivators related to participation in learning activities will be investigated as they are closely related to the incentive to pursue advancement opportunities. If one is motivated to pursue learning activities, he most likely will also have as a purpose to seek professional advancement. Specific factors that influence participation in learning activities will be explored and a relationship drawn to expertise.

Experience. The role of experience in achieving

expertise derives not just from the number of years performing the job, but from what occurs during that time and the quality of exposures. It is assumed that one who has many years of experience will be proficient in the necessary skills of the job and most likely will be looked upon as an expert. This may certainly be true, but the experience will be evaluated by investigating the practice of the expert while performing the job of a professional nurse.

Institutional Incentives. The primary institutional incentive in nursing is the clinical or career ladder. Many hospitals have these programs in place and they serve the purpose of recognizing and encouraging clinical excellence. The influence these programs have on the development of expertise will be examined, offering continued validation of their worth.

DEFINITION OF EXPERT

The word "expert" is used casually by many people who may have different interpretations of its meaning. Moreover, the term is used to describe a level of performance for which much variation potentially exists. It is helpful, then, to understand the meaning of the word as it is used generically and by key people who have used it to describe a level of practice in their research.

The American Heritage Dictionary (1987) defines expert as "a person with a high degree of skill in or knowledge of a certain subject. . . Having or demonstrating impressive skill, dexterity, or knowledge" (p. 592).

Wood (1985), in her study comparing the differences in problem-solving between novice and expert nurses, defines expert as "a person who possesses a large body of knowledge and skill in a specific domain" (p. 6).

According to Dreyfus & Dreyfus (1980; 1986), an expert is "someone who could, on the basis of experience with a vast number of past situations, respond to the current situation as he had successfully responded to similar situations in the past. . . the expert's brain had stored a vast number of memories of these past situations and, in some mysterious, holistic manner recognized the current situation as similar to one of them" (p. xii).

Benner (1984) states that "expertise develops when an individual tests and refines propositions, hypotheses, and principle-based expectations in actual practice situations. Experience ... results when preconceived notions and expectations are challenged, refined, or disconfirmed by the actual situation. Experience is therefore a requisite for expertise" (p. 3).

These definitions each possess important aspects related

to the notion of expertise and offer complementary explanations for a sometimes difficult concept. The features distinguished in these definitions allow us to operationalize the term "expert" in Chapter Three. They will be used to identify the subjects who will be the focus of this dissertation.

THEORETICAL FRAMEWORK

The theoretical framework for this dissertation is the novice-to-expert framework developed by Patricia Benner (1982; 1984) which is adapted from the original research conducted by Hubert L. Dreyfus and Stuart E. Dreyfus (1980; 1986) and later published in book form. The Dreyfuses studied the skill-acquisition process of airplane pilots, chess players, automobile drivers, and adult learners of a second language. They observed common patterns among the groups which they structured around five levels of proficiency labeled novice, advanced beginner, competent, proficient, and expert. Benner used the novice-to-expert levels of skill acquisition framework developed by the Dreyfuses and applied it to nursing practice through her research which involved systematic observations and interactions with nurses in various settings. Benner confirmed the applicability of the Dreyfus' five stages to the nursing profession and described the steps of the

Dreyfus framework in the following manner:

- Novice -- The nurse with no prior experience in nursing. The novice depends on objective data (vital signs) to judge the patient's condition, and relies on textbook formulae and rules such as policies and procedures to guide her or his actions. These rules are limited, however, in that they cannot anticipate all situations and are usually of little assistance in setting priorities in real patient situations. The novice nurse, for example, can effectively explain the correct technique for listening to a patient's lungs but is unable to perform the procedure without direct supervision and guidance. The novice nurse therefore requires close supervision and much assistance with non-routine situations.

- Advanced Beginner -- The nurse who performs in a marginally acceptable manner. The advanced beginner has dealt with enough real life situations to note the recurrent aspects of clinical situations. Through practical experience, the advanced beginner begins to recognize recurring aspects of a situation. It is at this stage, for example, that a nurse can demonstrate the correct technique for listening to a patient's lungs but cannot yet discriminate among sounds. An advanced

beginner requires assistance in setting priorities and cannot determine essential interventions in complex situations. These nurses require mentoring support in the clinical setting as opposed to close supervision. They can deal with more non-routine situations than the novice, but still need frequent assistance from more experienced colleagues. Experience at this stage is more important than any form of verbal guidance. The advanced beginner has approximately one year of experience.

- <u>Competent</u> -- The competent nurse applies experience and judgment in assessing the importance of various patient situations and sets priorities in terms of long-range goals. These long-range goals are a plan of care based on conscious, abstract, and analytic contemplation of the patient's problems the outcome for which this nurse is responsible. This level is characterized by a feeling of mastery which incorporates efficiency and organization. The competent nurse, for example, can identify normal lung sounds and effectively differentiate among pathological sounds. The competent nurse needs selective supervision or assistance and can manage most complex situations effectively. The competent practitioner has approximately two to three

years of experience.

- <u>Proficient</u> -- The proficient nurse can discern situations as wholes rather than single episodes. Years of experience have exposed this nurse to many patient situations; as a result, the proficient nurse can determine what events to expect in a situation and how to make revisions in the plan of care to accommodate these events. Practice at this level is efficient: The proficient nurse can identify and address problems with speed and flexibility and decision-making is analytic and less labored. The proficient nurse considers fewer options and zeros in on an accurate region of the problem by considering the whole picture. For example, the proficient nurse now interprets respiratory findings and suggests interventions based on years of experience with similar situations. The proficient nurse acts as a mentor, supervises other nurses, and manages all situations effectively. The proficient nurse has approximately three to five years of experience.

- <u>Expert</u> -- The expert is the person to whom most look to and respect for his vast amount of knowledge and experience. The expert nurse has an intuitive grasp of situations and is masterful in problem-solving. For example, the expert nurse will anticipate complications

and interventions when performing respiratory assessment. The expert clinician trains other nurses to be mentors, oversees unit experiences, and manages all situations effectively by anticipating complications. The expert nurse usually has more than five years' experience.

The hallmarks of clinical expertise are an in-depth knowledge of a particular clinical population; advanced assessment skills; and increased use of past whole situations or situation-specific referents for understanding the clinical situation (Benner, 1985).

The Benner framework represents a description of nursing practice through all five stages of skill acquisition developed by the Dreyfuses. Benner verified that many nurses advance through the five stages in the course of their careers. This advancement occurs sometimes with the assistance of mentors, and other times through pursuing formal or informal education. Inherent in this progression is experience -- the quality and quantity of which plays a significant role.in expert achievement (McCall, Lombardo, & Morrison, 1988).

SIGNIFICANCE AND IMPLICATIONS FOR ADULT EDUCATION

Identifying experts and understanding the factors that influence the achievement of that status has important

implications for the theory and practice of adult education. A major task of adult educators is to provide information to enhance the knowledge and skills of adult learners. The advancement of knowledge and skills means more than "keeping current" or "on-the-job-training"; it means developing the learner to his highest potential so that he can function as an expert within his field.

Facilitating the developmental process toward "expertness" can be challenging for the adult educator who is frequently exposed to heterogeneous groups of learners with varying levels of intellectual and skill achievement. In addition to the problem of divergent learning needs, the adult educator has little information on identifying expert characteristics and preparing learners for expert performance. Specifying a set of characteristics which describe experts and identifying factors that influence the progression toward achieving expertise would provide adult educators with important information and direction to help learners advance.

This study will concentrate on the nursing profession to gain insights into the factors that influence expert progression. Because practicing nurses exhibit varying levels of expertise and performance along a wide range of experiences and educational attainment, this group lends

itself especially well to the study of expertness. The notion of competence in nursing practice can range from a very minimal understanding and application of nursing science to an advanced level acquired through years of experience and education. Developing and maintaining advanced levels of competence in staff nurses is a necessity in these days of exploding knowledge in nursing science and increasingly complex medical procedures.

Historically the nursing profession was satisfied if nurses were safe and "competent", but the term "competent" now takes on expanded interpretations and meaning. It is no longer assumed that if a nurse has several years experience and can manage patient situations with safe outcomes there are no further expectations required of that nurse. This nurse today needs a comprehensive understanding of patients' illnesses and the ability to function independently and anticipate problems and interventions beyond the merely safe and competent level previously accepted (McGregor, 1990).

Expert practice within the nursing profession is the ability to use knowledge as well as intuition in patient care. These skills enable nurses to anticipate a variety of patient problems and intervene in a manner that is most likely to result in a safe and effective patient outcome (Benner, 1984; Pyles & Stern, 1983; Rew, 1988a).

ORGANIZATION OF THE DISSERTATION

Chapter Two reviews the literature on expert practice and its development. Particular attention is given to literature on information-processing, problem-solving distinctions between novices and experts, intuition, role of mentors, motivation, experience, and institutional incentives.

Chapter Three outlines the qualitative method employed in the study which adopts an intensive interviewing method of data collection. A description of the interview questions used as a guideline during the interviews is included as well.

Chapter Four will present research findings.

Chapter Five, the final chapter, will discuss the results of the study and its implications for educational design, nursing practice, and further research.

C H A P T E R   T W O

REVIEW OF THE LITERATURE

Introduction

This dissertation examined the novice-to-expert advancement from the perspective of five critical factors the literature suggests are important to the progression. As set out in Chapter One, these factors are:

- Information-processing, problem-solving, and intuition;

- The role of mentors;

- Motivation and education;

- Experience;

- Institutional incentives.

This review is organized around the above five categories. Section one discusses, first, two conceptual approaches to knowledge and learning that best explain the cognitive and skill process of expertise -- the Dreyfus and Dreyfus framework of expertise development and Anderson's framework of cognitive skill acquisition; second, differences between novice and expert problem-solving abilities; and third, the use of intuition. Research in these areas is summarized under the heading *information-processing, problem-solving, and intuition*.

Section two will discuss the *role of mentors*. The literature is abundant with studies documenting the

influence that mentoring has on leadership, professional growth, and career development. Some of the more important studies and ideas will be discussed.

Section three presents research on *motivation and education* as they relate to participation in learning. Factors that move people to participate in learning activities also seem to be influential in the development of expertise.

Section four discusses the literature on the role of *experience* in developing expertise. Emphasis here is on research that investigates the quality of the experience rather than the quantity.

Section five presents research on *institutional incentives*, in particular, incentives relevant to the specific group under examination in this study -- nurses. Literature on clinical ladder programs from the field of nursing will be discussed with specific emphasis on how these programs support nursing excellence.

SECTION ONE:

INFORMATION-PROCESSING, PROBLEM SOLVING, AND INTUITION

When investigating expertise, one can easily assume that experts have greater or perhaps more developed intellectual or cognitive abilities than nonexperts (Fiske, Kinder, & Larter, 1983). Do experts process information differently?

Do they have a better memory? What are some of the distinctions with respect to cognition along the novice to expert continuum? These questions will be addressed by exploring two frameworks of cognitive skill acquisition.

<div align="center">Information-Processing</div>

Dreyfus and Dreyfus Framework of Expertise

As noted earlier, Hubert L. Dreyfus and Stuart E. Dreyfus (1980; 1986) studied the skill-acquisition process of airplane pilots, chess players, automobile drivers, and adult learners of a second language and observed common patterns of information-processing use among all groups which were then structured around five levels of proficiency which they labeled novice, advanced beginner, competent, proficient, and expert. The Dreyfus and Dreyfus framework describes the changes that occur in information-processing during the progression from novice to expert. An explanation and description of each level follows:

Novice -- The first stage of the acquisition of a new skill. The novice recognizes a variety of objective facts and features related to the new skill and acquires rules for determining actions based on those facts and features. Elements of the situation are so clearly and objectively defined for the novice that they are recognized without reference to the total situation in which they occur. The

beginning chess player, for example, is provided with a formula for assigning point values to pieces independent of their position. This formula provides direction to the player for moving pieces on the board, irrespective of intervening variables that may impact on the outcome of moving a particular piece. The novice judges his performance on how well he follows rules. These rules allow the accumulation of experience and will eventually be relinquished as advancement occurs.

Advanced Beginner -- Performance of the advanced beginner improves to a marginally qualified level after considerable experience coping with real life situations. The advanced beginner is able to recognize elements of situations for which he has had experience and is no longer relying on rules for guidance. Experience at this stage is more important than any form of verbal guidance. For example, the advanced beginner chess player has learned to recognize and avoid overextended positions. After some experience he can detect situations on the board such as a weakened king's side or a strong pawn structure despite the lack of precise rules.

Competent -- The competent performer has a goal in mind and sees a situation as a set of facts, the importance of which depends on the presence of other facts. The competent

person has learned that in a situation where many facts are drawn upon, conclusions should be drawn, decisions made, or expectations investigated. It is required that a competent performer select a plan to organize his approach to a problem or situation. After the selection of a plan, the competent person will feel responsible for and emotionally involved in the product of his selection. This is unlike the novice and advanced beginner, who feel little responsibility for the outcomes of their actions because they relied on external rules and procedures for direction rather than their own internal decisions. A competent chess player may decide, after studying his position and evaluating his alternatives, that he can attack his opponent's king. This competent player would ignore weaknesses in his own position and the personal losses created by his attack, while removal of pieces defending the enemy king becomes his overriding objective.

Proficient -- The proficient performer is deeply involved in his task and will experience it from the outlook of a recent and similar event. Because of his perspective, certain features of the situation will stand out and others will recede into the background and be ignored. The proficient performer has experienced similar situations in the past, associates with present situations plans that

worked in the past, and anticipates outcomes that previously occurred. Intuition is an important characteristic of the proficient stage. Intuition is a subconscious understanding that effortlessly occurs due to prior experiences. The proficient performer intuitively organizes and understands his task, but still thinks analytically about his next step. The proficient chess player can recognize a large repertoire of types of positions. He grasps immediately and without conscious effort the sense of a position and calculates a move that best achieves his intuitive plan.

<u>Expert</u> -- An expert is a person who knows what to do based on mature and practiced understanding. He does not make conscious deliberative decisions because his skill has become so much a part of him that he is no more aware of it than he is of his own body. When things are proceeding as expected, experts do not consciously solve problems and do not make decisions, but rather they do what normally works. Most expert performance is ongoing and nonreflective. When time permits and outcomes are crucial, an expert will deliberate before acting. This deliberation, however, does not require calculative problem-solving, but rather critical reflection on one's own intuitions. Chess grandmasters can lose entirely the awareness that they are manipulating pieces on a board. When playing rapidly, they sidestep

dangers in an automatic way. Expert chess players can play at the rate of five to ten seconds a move. At that speed they rely on intuition and hardly at all on analysis and comparisons of alternatives.

Summary

The Dreyfuses' research describe the changes that occur in information-processing during the progression from novice to expert. The novice functions in a manner which is more focused on the task, rule-bound, and deliberate. Experts function instinctively and spontaneously, and recognize less obvious variations in situations. The Dreyfus and Dreyfus framework, however, does not describe how these innate rules of behavior are acquired, nor how the expert identifies important problem characteristics.

Anderson's Framework of Cognitive Skill Acquisition

Anderson (1982) proposed a framework for cognitive skill acquisition comprised of two stages: a declarative stage in which information about the performance of a skill is interpreted and a procedural stage in which knowledge is directly incorporated in procedures for performing the skill. This framework is based on the method of skill acquisition referred to as ACT (Active Control of Thought). The ACT method is comprised of several key features which are part of the cognitive process. These include the

working memory, declarative knowledge, and procedural knowledge (Hillerbrand, 1988). These will be examined in turn.

Working memory. Working memory is that knowledge that a person has access to at any given moment in time. This knowledge may be temporary knowledge or knowledge that has been stored in long-term memory. The knowledge in long-term memory is activated when needed. Working memory filters and organizes information to aid in recognition. As incoming information is matched with knowledge organized in memory, recognition materializes. For example, when the match of incoming information about a problem occurs with a likeness of the problem that is stored in memory, knowledge of specific cognitive rules for solving the problem emerge from memory.

Declarative knowledge. Declarative knowledge is the knowledge of facts, principles, or events and is stored in memory as images or in other forms that are perception-based. All incoming information is programmed initially into the declarative memory. This allows the knowledge to be stored quickly and as a result is easily analyzed. Because of these processes, declarative knowledge is important in reasoning.

Procedural knowledge. Procedural knowledge is the

knowledge of how to recognize a stimulus and how to perform an action. Procedural knowledge is called upon to recall information required for solving problems. Procedural knowledge is stored slowly and retrieved quickly and without effort. Experts have procedural knowledge that allows for effective pattern distinction, access to a large amount of information which is complexly organized, immediate access with little burden on short term memory, and efficient distribution of cognitive attention. Experts are able to identify and work towards a goal quickly once a problem is identified (Hillerbrand, 1988).

Research on *knowledge organization* further reveals that experts classify, access, and transfer knowledge differently from novices. There is also a distinction between novices and experts in the amount of energy and memory that is required to process knowledge (Larkin, McDermott, Simon, & Simon, 1980). Novices organize their cognitive information around precise parts of the problem while experts utilize rules of conjecture based on principles and speculation. As knowledge of an area expands, there is a slow change in how people think and reason. The data base becomes larger, more abstract, and more organized for use. The conduct of highly competent people indicates the possession of, rapid access to, and effective utilization of an organized body of

conceptual and procedural knowledge (Glaser, 1984). The expert's organization of knowledge is theoretical in nature and arranged in such a manner as to allow ready access to information needed to solve problems (Hillerbrand, 1988).

<u>Summary</u>

Anderson's research assists in explaining the Dreyfus and Dreyfus framework of skill acquisition in terms of the cognitive processes utilized by experts. Anderson has offered an explanation of how information is received, stored, and processed for use in cognitive and skill acquisition. Anderson's framework explains how experts synthesize information and how they are able to rapidly interpret situations and draw accurate conclusions. According to Patel, Groen, & Frederiksen (1986), and Glaser & Chi (cited in Benderley, 1989) experts' memory is different from novices' in that they have excellent short- and long-term memories. This is because the automaticity of many parts of their skills frees up resources for greater storage. Experts have a more efficient ability to encode messages and a greater ability to organize and filter incoming information. Experts make more inferences while novices make more verbatim recalls. Novices remember superfluous trivia while experts do not. The research on information-processing and memory all point to the fact that

experts generally have a broader knowledge base and a greater memory store than novices.

Problem-Solving: Novice and Expert Distinctions

Some of the major research examining novice and expert distinctions with regard to knowledge-acquisition has been in the area of problem-solving. An early study in this area was conducted by DeGroot in 1966 (cited in Wood, 1985) and followed by Chase & Simon (1973), all of whom analyzed chess knowledge.   DeGroot found that chess masters were better able to recall organized chess positions on the board than novices, but were no better in recall when chess pieces were placed randomly on the board.   He concluded that the experts' skill in recall of chess positions must lie in their ability to perceive structure in those positions and encode the positions in "chunks", which according to Chi, Glaser & Rees (cited in Hillerbrand, 1988) is the capacity of experts to filter and organize incoming information. Chase & Simon (1973) expanded on DeGroot's work by attempting to discover how many units of information constituted a "chunk".   Their research determined that expert chess players absorbed larger chunks of information and could recall more chunks than novices.

Chi, Feltovich, & Glaser (1981) studied the representation of physics problems in relation to the

organization of physics knowledge in novices and experts. The results of this research confirmed that novices perceived similarities among problems according to their surface structure, e.g., wording, whereas the experts perceived according to deep structure, e.g., the principles of physics. Chi, Glaser, & Rees (cited in Wood, 1985) also studied the differences in the structure of knowledge of physics between novices and experts. They determined that the problem-solving abilities of expert learners resulted from experience with the areas of knowledge relevant to formal training they received. They surmised that novices may have adequate factual knowledge about a problem but lack the procedural skills of the expert.

Schoenfeld & Herrmann (1980) conducted a study of the relationship between mathematical background and problem perception between experts (mathematics professors) and novices (undergraduate students). Findings revealed that the experts sorted the problems more consistently than did the novices and there was somewhat greater discrimination on the part of the experts. Also, experts perceived mathematical problems differently from novices. Their findings corroborated those of Chi, Feltovich, & Glaser (1981) that sorting by novices depended on surface characteristics of the problem, while the sorting by experts

depended on the deep properties.

Larkin (cited in Wood, 1985) recounts her research comparing physics knowledge between novices and experts. The experts readily interjected a qualitative analysis of the problem presented rather than jumping directly from the physical situation to the quantitative equations. She concluded that principles are stored in an expert's memory as chunks and the novice did not have the tightly connected chunks of the experts. The expert was able to access and quickly apply principles which are used together and stored as chunks.

Studies by Simon & Simon and Larkin et al. (cited in Patel, Groen, & Frederiksen, 1986) found distinct differences in the problem-solving strategies used by experts and novices in the field of physics. Novices used general processes such as trial and error which were not dependent on very well developed knowledge. Experts on the other hand used mental processes that were dependent on a highly developed knowledge base and were crucial to an efficient solution of the problem.

Problem-solving skills in the field of medicine are reported by Kassirer & Gorry (1978) who directed their research toward an examination of the diagnostic process. The method of information-gathering during the process of

eliciting a medical history from patients demonstrated that experienced physicians usually formulated diagnoses early in the encounter with the patient and that the diagnoses were based on cues detected during the interview.

A study conducted by Corcoran (1986) describes the initial and overall approaches of expert and novice nurses in identifying pain-related problems and planning nursing care for hospice patients. Most of the expert nurses consistently used broad and systematic approaches to planning, but no such pattern was apparent for the novices. The experts appeared to interrelate the data and as a result could develop a broad plan of care. In contrast, the novices focused on a single problem for making decisions and planning care.

Summary

Problem structure has evolved as a significant variable when considering differences in problem-solving abilities between novices and experts. According to Holyoak (cited in Hillerbrand, 1988), the degree that a problem is perceived as unstructured is dependent on the amount of knowledge possessed by the problem-solver. Since experts have more knowledge than novices, problems may not appear as unstructured to them. Even when problems are perceived as unstructured, experts have two advantages. First, they have

procedural knowledge that facilitates structuring the problem. Second, they have a greater range of problem similarities which allows them greater opportunity in accessing analogous representations of the problem (Hillerbrand, 1988).

Intuition

Inherent in expertise is the ability to evaluate a situation, synthesize all relevant information, and perform accurately and efficiently. The systems used in attaining this end involve the well respected and legitimate method of cognition as well as the less recognized intuitive process. Intuition is "the act or faculty of knowing without the use of rational processes; immediate cognition" (The American Heritage Dictionary, 1987, p. 881). Scientists are continually investigating the mind and how humans receive, process, and express information. We turn now to research investigating intuition and the role it plays in knowledge application and prediction of outcomes, particularly with respect to its use by experts.

Aspects of Intuitive Judgment

Intuition is recognized as an essential component of problem-solving, decision-making, creativity, and strategic vision (Cosier & Aplin, 1982; Markley, 1988). According to Benner & Tanner (1987) intuition is understanding without

explanation or cause, and is what distinguishes expert judgment from decisions made by a novice. Some educators, including Clark, Rockenstein, and Shallcross & Sisk, have come to view intuition as one of the central domains of thought located in the human brain (cited in Rockenstein, 1988). Schraeder & Fischer (1986) describe intuitive perception in nursing practice as "the ability to experience the elements of a clinical situation as a whole, to solve a problem or reach a decision with limited concrete information" (p. 161).

Research on brain organization has identified a portion of the brain that is specialized for intuitive knowing. The left hemisphere is predominately concerned with linguistic activities, linear and sequential information processing, and is the source of analysis and logic. The right hemisphere on the other hand controls our artistic talents, spatial processing, visual imagery, creativity, and is the center for intuition (Herrmann, 1981; Isaack, 1980; Silverman, 1985).

Dreyfus & Dreyfus (1986) also discuss intuition. They describe six aspects of intuitive judgment.

Pattern Recognition: The ability to recognize relationships without specifying components of the situation prior to exposure.

Similarity Recognition: The ability to recognize vague similarities despite marked differences in the objective features of past and present situations. Similarity recognition sets up conditions for distinguishing dissimilarities as well.

Commonsense Understanding: A deep realization of the culture and language, so that an accurate understanding of various situations is possible.

Skilled Know-How: Embodied knowledge or the ability to perform a skill or visualize a process as if it were a part of one's own body. Agan (1987) describes this intuitive sense as an extension of the design for individual knowledge.

Sense of Salience: A sense of salience is to experience events and decipher them as important or unimportant.

Deliberative Rationality: The ability of expert performers to view situations in terms of past experiences. As a result the expert can anticipate problems or complications because of a vast amount of exposures to similar situations.

Intuition and Knowledge

Alternate means of detecting knowledge were described by Jung in his theory of psychological type (cited in Gerrity, 1987). All conscious mental activities were

classified into four mental processes. These are the two perceptive processes of sensing and intuition and the two judgment processes of thinking and feeling. All information that arrives in the conscious mind comes either through the senses or through intuition.

Bastick (1982) describes intuition as a widespread ability that is displayed in the creative inspirations of great scientists, as well as in the routine hunches that guide individual behaviors. He considers intuition as the essence of human thought. Similarly, Assagioli (cited in Rew, 1986) refers to intuition "as a true means of cognition or illumination" (p. 22). Hill (cited in Urden, 1989) corroborated this through his research on Henri Bergson, who is a 20th century writer. Bergson asserts that knowledge derived through intuition is of greater value than that derived through the intellect. According to Bergson, intuition is an necessary component in higher intellectual activities.

Intuition in Practice

Studies validating the use of intuition by experts have crossed vocational lines. Simon and other researchers (cited in Benderley, 1989) have found that intuitive people all share the trait of being experts in particular, and in some cases limited, fields of knowledge. Mastery of a field

is one thing that makes intuitive thought possible.

Isenberg (1984) studied 12 senior managers to investigate what they thought about and how they think. He did this by conducting interviews, observing them on the job, reading documents, talking with colleagues, and engaging them in various exercises in which they recounted their thoughts as they performed their job. Two major findings emerged from this research. First, when these executives used analysis for a prolonged period of time, it was always in conjunction with intuition. Second, in making their daily tactical decisions, the executives relied on intuition. Isenberg concluded that senior managers used intuition in five ways. First, they intuitively sensed when a problem surfaced. Second, the executives relied on intuition to perform routine management activities rapidly. Third, the managers synthesized isolated pieces of information and experience into an integrated picture. Fourth, they used intuition to verify the results of more rational analysis. And lastly, the managers used intuition to bypass complex analysis and instead moved quickly to solve problems.

Pyles & Stern (1983) conducted in-depth interviews of 28 critical care nurses to investigate the practice of nursing during the early stages of cardiogenic shock in patients

with acute myocardial infarction. These authors found that experienced nurses used a process that they called the Nursing Gestalt as the basis for making decisions about patients developing cardiogenic shock. The Nursing Gestalt is a matrix operation that links basic knowledge, past experiences, identifying cues by patients, and sensory clues such as "gut feelings". The Nursing Gestalt is a synergy of reason and intuition involving both conceptual and sensory acts.

In another study, Schraeder & Fischer (1987) interviewed 15 nurses in a nursery and concluded that those nurses who demonstrated the highest technical proficiency relied on both previous experience and intuitive knowledge in making clinical decisions about patients.

Rew (1990) conducted interviews of 25 nurses in a critical care setting for the purposes of describing the intuitive experiences of these nurses in clinical practice, to identify the steps of the nursing process in which intuitive experiences were used, and to relate intuitive experiences to perceived feelings and physical sensations. Results from the study suggested that intuitive experiences were seen as strong perceptions about assigned patients, and that critical care nurses recognized intuition as a legitimate component of complex clinical judgment. Rew

concluded from her study that ". . . there is now evidence to support intuition as a legitimate, possibly essential, element of advanced clinical practice" (p. 37).

A paper presented by Silverman (1985) addressed the case of expert decision makers confronted by moderately ill-structured problems or those which are not routine or well-defined with standard conditions, nor easily solved by immediate application of well-known procedures or decision rules. He concluded that the experts thought processes were primarily nonverbal and intuitive, and their intuition was based on many concrete experiences.

Rew (1988a) interviewed 26 nurses working in five home health settings. This study found that all of the nurses stated they used intuition in nursing practice. The nurses stated that trusting their intuitions enabled them to anticipate the progress of a patient. In another study, Rew (1988b) interviewed 51 nurses to determine how nurses were aware of their use of intuition in clinical practice and what behaviors followed the experiences of intuition. The majority of nurses in this sample were able to describe their use of intuition. Several nurses described their intuitive experiences as knowing rather than feeling, and others related their intuitions to previous clinical experiences. Benner (1984) described this skill in using

prior clinical experience as the "intuitive grasp" of the expert. Some of the nurses stated that they experienced intuition in clinical practice as knowing whether a patient would develop serious complications and whether a specific intervention would be effective. Young (1987) observed and interviewed 41 nurses from a variety of agencies and clinical areas. They were asked to describe their past experiences with intuition. Findings from this study showed that intuition is grounded in both knowledge and experience and is used in making clinical judgments.

Summary

Findings from the literature demonstrate that intuition is a well-recognized and common mental activity in which experts engage. It is an exercise frequently used by experts during decision-making and problem-solving activities.

SECTION TWO:

MENTORS AND MENTORING

"Ever since the Greek poet Homer's 'faithful and wise' Mentor first advised Odysseus, or Merlyn the young King Arthur, wise men have counseled, taught, coached, and sponsored the young" (Roche, 1979, p. 14).

Achieving expertise is influenced by, among other factors, the mentoring process. For professional

advancement to be realized, a dynamic and goal-directed relationship must occur -- a relationship that is oriented around advising, coaching, teaching, and role modeling.

According to Darling (1985b), a mentor "is a person who leads, guides, and advises a person more junior in experience" (p. 42). Galbraith, Brueggemeyer, & Manweiler (1988) and Kinney (1987) add to this definition by stating that a mentor is an accomplished professional practitioner who is highly motivated, visionary, and observes in the less experienced person potential for development. The mentor is usually older, commanding, prominent in his or her field, and in a position to inspire an individual's career. Vance (1989/1990) defines a mentor as an experienced professional who takes a long-term personal interest in a novice's career and/or education, and who actively advises, guides, and promotes the protege.

Most people at some point in their lives have been influenced and guided by another person. Roche (1979) in his study of top executives asked participants: "At any stage of your career, have you had a relationship with a person who took a personal interest in your career and who guided or sponsored you?" (p. 15). More than 6 in 10 of the respondents answered in the affirmative. Another study by Kinsey (1986) found that 86% of the national nursing leaders

reported having been influenced by a mentor. In Vance's study of influentials in American nursing (cited in Fagan & Fagan, 1983), she concluded that 83% had reported having mentors. The results from a questionnaire distributed to 212 nurses in a large midwestern hospital by Fagan & Fagan (1983) showed that 84% stated receiving some mentoring and 46 had a definite mentor. During interviews conducted by Collins & Scott (1978) of top level executives, one stated "I don't know that anyone has ever succeeded in any business without having some unselfish sponsorship or mentorship . . Everyone who succeeds has had a mentor or mentors (p. 100).

In a study conducted by Gaskill & Sibley (1990), they described the prevalence, perceived importance, and characteristics of mentoring relationships of women employed in middle and upper level retail positions. The results of this research demonstrated that the mid-level executives who had a mentor reported more promotions over a five-year period than those who did not have a mentor, and that upper level executives were more likely to have a mentor than mid-level executives. The upper level executives who had a mentor reported higher levels of job motivation that those without a mentor. The study also disclosed that upper level executives were more likely to have had a mentor who was of the male gender than the mid-level executives and were more

likely to have a mentor who was older. The overall conclusion from this research was that mentoring relationships can be an important force in the career development of women in retailing.

A study conducted by Hyland-Hill (cited in Vance, 1989/1990) described the relationship between head nurse leadership effectiveness and the presence of a mentor. A majority of the head nurses in the sample reported the presence of a mentor. In their study of the development of 40 men, Levinson (cited in Fagan & Fagan, 1983) and his constituents found that mentors facilitated the psychological growth of their subjects. Levinson concluded that the mentor relationship is one of the most complex and important a man can have in early adulthood.

Some business leaders have also recognized the importance of mentoring. For example, J. C. Penny and Company has used mentoring as a method to train store managers since 1901 (Roche, 1979). Research by Henning, Phillip, & Halcomb (cited in Fagan & Fagan, 1983) indicate that the merits of mentoring and its necessity for success in the business world is especially true for women.

The Mentoring Concept

Hagerty (1986) approaches the concept of mentoring from three perspectives. The first is from that of the

organization. The mentor can assist the novice by explaining the organizational hierarchy and providing direction for information gathering. The process of mentoring can be organized into a formalized program. Phillips-Jones (1983) and Ross (1984) describe the success of mentoring programs as far as introducing employees to the culture and operations of the system, promoting their career advancement, and developing leadership qualities. These programs also instill a sense of loyalty and commitment to the organization.

Hagerty's (1986) second perspective is that of the **structural role of the mentor.** This phenomenon refers to the mentor assuming the part of role model. Role modeling fosters the learning of new behaviors which can then be reinforced by direct experience. Bolton (1980) reported that people exposed to the role modeling behaviors of mentors learned faster. Vance (1982) concluded that mentoring affects the novice by facilitating and intensifying development, promoting career progression, developing greater personal satisfaction, enhancing self-confidence, and cultivating self-esteem.

The third perspective described by Hagerty (1986) is that of the **interpersonal relationship** that develops between the mentor and mentee. The relationship is an intense,

personal, and emotional experience between an expert and less experienced novice (Gunderson & Kenner, 1987). The affiliation between a mentor and mentee has been described as sharing, caring, and giving; and as having the best fit when mentors demonstrate empathy and provide genuine self-disclosure (Caine, 1989). The mentoring relationship develops following the initial stage of dependence of the mentee on the mentor, and is a time of great commitment between the two parties (Green & Filer, 1988). Darling (1984; 1985a) discusses the concept of "mentor matching" or determining the correct complement between personalities and needs of the mentor and mentee, which is essential for an effective relationship. The requirements for a significant mentoring relationship, according to Darling (1984), include *attraction*, *action*, and *affect*. Attraction is the respect for the mentor and the desire to model that person in some way. Action is the time commitment involved with assisting the neophyte in his development. Affect is the positive feelings that develop between the mentor and mentee as they develop their relationship. Darling (1984) has developed an instrument to measure mentoring potential and suggests investigating the characteristics outlined in the instrument before embarking on a mentoring relationship.

Mentoring Outcomes

The extent of the mentoring experience and the impact on the individual's professional career development depends on the effectiveness and interest of the mentor, the receptivity of the mentee, and the efficaciousness of the relationship. When all of these factors are working successfully, several important outcomes can occur. The first is related to the development of leadership skills in the mentee. When Vance (cited in Vance, 1989/1990) questioned high-level nursing leaders about the type of assistance their own mentors provided, the responses included (1) career counseling and guidance; (2) role modeling; (3) pedantic and scholarly inspiration; (4) encouragement and idealism; (5) teaching, consulting, coaching; and (6) emotional support and nurturing. The literature supports the notion that mentoring is a key reason for leadership development and promotion to top-level positions (Caine, 1989; Campbell-Heider, 1986; Collins & Scott, 1978; Hagerty, 1986; Hamilton, 1981; Hamilton, Murray, Lindholm, & Myers, 1989; Merriam, 1983; O'Connor, 1988; Roche, 1979;).

Another important facet of the mentoring experience is the influence on career progression. The mentoring relationship plays an essential role in facilitating the

advancement of the neophyte nurse and of offering advice during transition periods in nurses' careers (Atwood, 1979; Bishop, 1990; Campbell-Heider, 1986; Hess, 1986; Morle, 1990; Vance, 1989/1990). Johantgen (cited in Vance, 1989/1990) investigated the prevalence and outcomes of helping relationships on staff nurses' career development. Fifty-six percent of the nurses reported the presence of a mentor in their early years of practice. Seventy-two percent rated having a mentor as very important in a young nurse's career development. The role of coaching and prompting those people who exhibit talent and a desire for achievement is one that a mentor plays with great regard.

Another outcome of mentoring is that of encouraging the participation in scholarly practice. Research suggests that aspirations toward scholarliness are learned and developed through mentoring relationships and formalized mentoring programs (Campbell-Heider, 1986; May, Meleis, & Winstead-Fry, 1982). Scholarliness and the use of cognitive knowledge is a characteristic of expertise manifested through research, publication, and professional speaking.

Stages of Mentoring

Ross (1984) discusses phases through which professional career education advances:

- First, is the phase during which the individual

receives formal education related to his career;

● Second, is the phase when the individual enters the practice world and assumes the position for which he has been educated;

● Third, is the phase when the individual is practicing in the chosen field. During this time he is participating in continuing education in order to keep current and is assessing career development options;

● Fourth, is the phase when the individual decides to alter or change career tracks.

Ross (1984) states that the mentoring function is most influential during the third and fourth phases when career development choices are being considered.

Summary

The literature on mentors and mentoring and their effect on advancement is impressive. The research demonstrates that mentors play a significant role in the progression and advancement of career-oriented individuals. The relationship serves a dual purpose. First it provides incentives for growth by offering career guidance and counseling, and second it fosters expertise through role-modeling excellent practice.

SECTION THREE:

MOTIVATION AND EDUCATION

The notion of expertise and the process of its achievement is closely related to motivation and developing mastery and competence. Participation in learning activities is aligned with other areas of one's life, especially professional advancement. Some of the more important studies on participation in learning activities from the field of adult education will be presented, followed by an endorsement, as determined by the results of the literature review on this topic, for the achievement of mastery and competence being an inherent desire of adults.

Motivation

Houle (1961) has been credited with the first analytic research on participation of adults in learning activities. Findings from interviews of twenty-two adults about their participation in continuing education revealed that all of their motivations clustered around three categories or what he called "learning orientations". The first group which he labeled goal-oriented, were those people who pursued education to achieve identified objectives. These people were motivated by an interest or a recognized need. The second group, activity-oriented, were those people who attended educational offerings for the diversion and joy of

interacting with others. The third group was the learning-oriented who attended educational activities for the purpose of seeking knowledge as an end in itself.

Sheffield (1964) expanded on Houle's research and developed an instrument to assess adult's learning activities. Five learning orientations emerged from his analysis of responses from 453 subjects: learning, desire for sociability, personal goal, societal goal, and need fulfillment.

Burgess (1971), through the analysis of 1,046 survey responses, found that the motives of people who seek learning fall into seven areas: the desire to know, the desire to reach a personal goal, the desire to reach a social goal, the desire to reach a religious goal, the desire to escape, the desire to take part in an activity, and the desire to comply with formal requirements.

Boshier (1971) developed, and has continually refined, a 48-item Educational Participation Scale (EPS) which he administered to 233 adult learners to measure motives for participation. This research revealed fourteen motivational orientations: social welfare, social contact, other-directed professional advancement, intellectual recreation, inner-directed professional advancement, social conformity, educational preparedness, cognitive interest, educational

compensation, social sharing, television abhorrence, social improvement and escape, interpersonal facilitation, and education supplementation.

The findings from Houle, Sheffield, Burgess, and Boshier suggest that people who are motivated to participate in learning activities have various goals in mind, one being to seek professional advancement. Characteristics of experts may be similar to those of the adult learner who is participating in learning activities to achieve a goal and to advance professionally. Experts may also derive motivation from participating in learning activities for the purpose of seeking knowledge (learning-oriented) or for the joy and diversion of interacting with others (activity-oriented).

Mastery and Competence

In addition to participation motivators, Weiner (1980) offers research on psychological theories that advance the idea that human beings strive for understanding and mastery. These theories include attribution theory, achievement motivation theory, personal causation theory, cognitive evaluation theory, and social learning theory. These theories assert that adults tend to be motivated when learning something they value. Experts, because of their position, value advanced status, recognition, and

excellence. Based on Weiner's work experts would be motivated to achieve a level of mastery and competence.

Wlodkowski (1986) describes the achievement of competence as occurring when there is an awareness of personal mastery or the realization that a body of knowledge or level of performance has been attained that is acceptable by a set of standards. This process usually occurs at the end of a learning activity when the learner has had the opportunity to apply or practice what was learned. John Dewey, a leading educational theorist, supported this idea by asserting that unless the student has an opportunity to use the information in problem-solving activities and action it is sterile (Phillips & Soltis, 1985). Professionals seeking expertise have a need to continuously learn in order to maintain a level of excellence.

Summary

Major studies on learning motivation and mastery achievement identify the most common motivator of learning as being the anticipation of using the skill or knowledge (Long, 1983). Adult learners seem to be motivated to learn when they see the information being advantageous to achieving a goal of increased competence. This competence achievement is one step toward expertise.

SECTION FOUR:

EXPERIENCE

The time spent in a realm of activity serves to provide opportunities to learn as well as develop a comfortable level of practice. The passage of time alone does not necessarily develop expertise -- it is more related to the quality of the experiences and how the individual maximizes the opportunities that are available for professional development.

Given its acknowledged centrality to the development of expertness, research on the role of experience is surprisingly sparse. While almost every study examined in this review mentions experience and its importance, very few efforts have been made to study the topic empirically.

Gadamer, Benner, & Wrubel (cited in Benner, 1984) state that experience is the refinement of preconceived ideas and theory through confrontations with many practical situations that add details or shades of differences. Practice in the work-setting, attained through experience, is more complex and presents many more realities than can be captured by theory alone (Benner, 1984). The Benner (1984) framework, describing stages from novice to expert, assumes that all clinical situations are more complex than can be described and learned by more formal methods such as theories, and

textbook descriptions. This notion lends support to the idea that textbook knowledge must be applied in the practice setting for it to come "alive" for the learner, that is, the added dimension of experience is crucial to learning and developing expertise.

Knowledge and Experience

McCall, Lombardo, & Morrison (1988) interviewed some of America's most successful senior executives about the experiences which had the greatest influence on their careers and the lessons they learned from those experiences. These authors found that most development takes place on the job. In a study conducted by Pyles & Stern (1983) in which critical care nurses were evaluated on their ability to make accurate assessments and judgments, nurses described the knowledge gained from experience as the prime component to skilled assessment. As one nurse stated:

It was absolutely fearsome because I didn't have the experience to know when a patient needed to be coded or suctioned. There were times when they would start this gagging and hacking and I would have to decide, 'What is this? Is he dying, shocking, or seizing?' It sounds so simple when you're sitting in the classroom talking about when you need to do this or that. But until you have to decide when it's just you there, it's a

different story (Pyles & Stern, 1983, p. 53).

This description clearly indicates that experience is a salient factor in the development of a sound knowledge base and in the application of knowledge in the practice setting.

There is general consensus in the literature that one way of attaining knowledge and expertise is through experience (Balasco & Black, 1988; Berliner, 1986; Fiske, Kinder, & Larter, 1983; Isenberg, 1984; Patel, Groen, & Frederiksen, 1986; Scandura, 1981; Silverman, 1985; Urden, 1989), but very little empirical research has been conducted showing a relationship between experience and expertise. The literature alludes to the fact that experience must be focused, goal-oriented, and designed to meet specific learning needs for true expertise to develop.

Adlai Stevenson described experience in the following manner (cited in Benner, 1984, p. 194):

A knowledge not gained by words but by touch, sight, sound, victories, failures, sleeplessness, devotions, love - the human experiences and emotions of this earth and of oneself and other men.

Summary

Day-to-day opportunities for growth take on special meaning in the work setting. Few would argue that experience promotes competence. The literature supports the

value of experience in attaining knowledge and expertise, but little empirical research is available to validate this notion. According to Benner (1984, p. 3):

Expertise develops when the clinician tests and refines propositions, hypotheses, and principle-based expectations in actual practice situations. Experience, as it is used here, results when preconceived notions and expectations are challenged, refined, or disconfirmed by the actual situation. Experience is therefore a requisite for expertise.

SECTION FIVE:

INSTITUTIONAL INCENTIVES

The term "incentives" calls to mind many possibilities including promotions, monetary advances, or personal benefits. Different professions or realms of activity offer different incentives based on institutional resources and needs. This section will address research related to a specific incentive available within the nursing profession called a clinical ladder. Traditionally the nursing profession has offered little in the way of incentives for ambitious clinical nurses who desire to remain working at the bedside. The usual direction a nurse would take when advanced education or additional experience was achieved was to move into management or education (Balasco & Black, 1988;

French, 1988; Haynor, 1978).

The idea of a clinical ladder was first introduced in 1972 by Zimmer who was an early advocate of recognizing expertise through a promotional system. It was a strategy to solve recruitment and retention problems during a nursing shortage. Zimmer developed a plan to address the failure of nursing institutions to provide an environment that would support and challenge professional growth and recognize excellence in clinical practice. Zimmer confirmed that an environment that recognized and rewarded nursing excellence would achieve higher levels of competence and expertise in the delivery of nursing care to patients and families (Zimmer, 1972).

According to del Bueno (1982) a clinical ladder is "a hierarchy of criteria intended to provide a means for evaluation and/or development of nurses providing direct nursing care to patients" (p. 19). Jones, Jenkins, & Johnson (1988) state that the intricacy and commitment necessary in nursing practice today will require long-term and ongoing career development, and one organizational means to achieve this end has been the clinical ladder. It is through active learning in the clinical setting that nurses move up the clinical ladder and become more expert with each step (Jones, Jenkins, & Johnson, 1988).

Job Characteristics Theory

Instituting a clinical ladder involves redesigning jobs through job enrichment. The process of job enrichment can be guided and evaluated by using the job characteristics theory developed by Hackman, Oldham, and Nystrom (cited in Roedel & Nystrom, 1987). This theory specifies how to design jobs that offer positive internal motivation by creating psychological states that achieve employee outcomes such as increased job satisfaction, retention, and job performance. The theory states that the psychological state of meaningful work is created from the job characteristics of skill variety, task identity, and task significance; the psychological state of responsibility for work outcomes are created from the job characteristic of autonomy; and the psychological state of knowledge of work results are created from the job characteristic of feedback from work. The job characteristics theory is useful for validating the role that clinical ladders can have on promoting clinical advancement. When an employee has increased job satisfaction and job performance he is more likely to advance professionally toward expert practice.

A study measuring job satisfaction of several thousand professional employees conducted by Oldham, Hackman, and Stepina (cited in Roedel & Nystrom, 1987) revealed

significant findings. First, nurses at all levels on the clinical ladder saw their jobs as offering high skill variety and task significance. Second, nurses at the upper level on the clinical ladder experienced significantly greater task identity than nurses at lower levels. Third, nurses at higher levels reported greater autonomy than nurses at lower levels. Fourth, nurses at higher levels saw their jobs as containing significantly higher motivation potential than nurses at lower levels. Lastly, nurses at the highest level on the clinical ladder reported greater job satisfaction than nurses at lower levels. Overall the findings from this study are consistent with the expectation that enriched jobs offer more satisfaction and potential for growth.

<u>Success and Expertise</u>

Clinical ladder programs, which value expertise, demonstrate that as the nurse advances up the ladder there is an increase in autonomy and authority (Jones, Jenkins, & Johnson, 1988). Balasco & Black (1988) describe a program focusing specifically on expertise recognition, advancing practice, and the incorporation of the principles of autonomy and accountability into clinical practice. Their Professional Advancement Program is based on the principle that promotion of expert practice serves the goal of

excellence in patient care and is based on the Benner (1984) framework using three descriptors from her research (competent, proficient, and expert).

In a study exploring predictors of success among professional nurses, intrinsic forms of success emerged as offering higher value. When nurses were asked what they valued most as forms of success they selected "achieving competence in clinical practice, satisfaction, and fulfillment in daily work and making a significant impact on human welfare" (Buscherhof & Seymour, 1990, p. 85). Benner (1984) reported from a survey of 1,200 nurses that clinical ladders have been instrumental in promoting the kind of learning required to move from novice to expert in clinical practice. Achieving competence, developing expertise, and motivating nurses to move to higher levels of practice are majors purposes of clinical ladders (Davis, 1987). Jones, Jenkins, and Johnson (1988) state "a competent professional staff is too often a scarce resource. Career development programs such as the clinical ladder help to attract and hold highly competent and motivated professional nurses" (p. 363). They state further that "clinical ladders ideally go beyond making better use of the expertise of professional nurses. They should also be instrumental in developing further expertise" (p. 364). Perry (1989) believes that

hospitals will move more and more toward developing clinical ladders allowing nurses to become experts in bedside nursing care, management, education, or research.

Outcomes and Benefits

Many clinical ladder programs have been described in the literature in terms of significant outcomes and benefits. Some of these outcomes relate to promoting nursing excellence, increasing recruitment and retention, recognizing achievement from peers and the institution, competency and expertise advancement, and increased responsibility, accountability, and professionalism (Davis, 1989; Edelson, 1989; Kneedler, Collins, Gattas, & Lavery, 1987; Knox, 1980; Kreman, 1990; Metcalf, Werner, & Richmond, 1984; Roberts & Fisher, 1988; Taylor, Walts, Amling, & Cavouras, 1988).

Additional benefits for the nurse and the patient include pride as advancement occurs; a broader perspective on nursing; a higher level of professionalism; and an incentive to perform at an expanded level in the delivery of patient care (French, 1988; Hougaard, 1988; Ulsafer-Van Lanen, 1981).

A benefit which is related to expertise development is the encouragement of the professional nurse to accept responsibility for one's own development and career

management (Crane & Jefferson, 1987). The expansion of practice along the progressive stages from novice to expert requires internal drive and motivation, so as a result the responsibility for advancement must lie solely with the individual nurse.

The clinical ladder is mainly a professional development mechanism that cultivates increased levels of competence and responsibility. The goal is to develop and reward the expertise and skills needed for improving professional practice and patient care (Jones, Jenkins, & Johnson, 1988; Knox, 1980; Taylor, Walts, Amling, & Cavouras, 1988)).

Summary

Institutional programs such as clinical ladders meet organizational needs and offer many benefits. Major benefits include enhanced clinical competence and expertise. "Ladders that foster the promotion of true clinical experts earn credibility for the professional and for the hospital" (Sanford, 1987, p. 37). Finally, Benner (1984) believes that only when clinical ladders accurately reflect levels of proficiency will they serve as a basis for career development.

CONCLUSION

This review has summarized the major literature in the fields of information-processing, problem-solving,

intuition, mentoring, motivation and education, experience, and institutional incentives as they relate to expertise. Findings from the literature representing these categories delineate the major factors that are influential in examining the process of advancement along the continuum from novice to expert.

C H A P T E R   T H R E E

METHOD

INTRODUCTION

The process of identifying factors that influence the progression of expertise can be approached from several methodological directions. Depending on what aspect of "expertness" one wishes to examine, the researcher could choose from a large-scale, closed-end survey, an intensive examination of a single individual, or one of a very large number of combinations of methods and samples.

This chapter describes a *qualitative case study* approach to identifying the factors that influence the progression toward expert arguing that the poorly developed state of the field and this dissertation's focus on the identification of influencing factors make such an approach appropriate. In the course of the chapter there will be discussions of the population, data collection procedures, the data-gathering instrument, and data analysis. The chapter will close with a summary and conclusions regarding the method.

QUALITATIVE CASE STUDY RESEARCH

Using a qualitative case study approach, this dissertation studied the progression toward becoming expert by exploring factors that affect that advancement. While

other approaches were considered and might have been used,the qualitative case study was chosen in part because the paucity of previous research in this area called for basic mapping and exploration of parameters, and because the study required in-depth interviews and pursuit of ideas along unanticipated paths. Closed-end surveys -- the main competing methodological approach -- did not offer the flexibility required to achieve the specific ends set for this study, although such a survey might have been appropriate for different purposes.

This section describes the qualitative case study approach and demonstrates how it was applied to the study of "becoming expert" in the nursing profession.

Qualitative Research

The qualitative method is an approach to research in which the data that are collected consist of *"detailed descriptions* of situations, events, people, interactions, and observed behaviors; *direct quotations* from people about their experiences, attitudes, beliefs, and thoughts; and *excerpts or entire passages* from documents, correspondence, records, and case histories" (Patton, 1980, p. 22). A major way in which qualitative methodologists seek to understand the object of their research is through in-depth, intensive interviewing, in which these experiences are captured for

future evaluation (Patton, 1980).

To analyze the factors that influence the progression toward expert, the researcher needed to study experiences and examine the qualities of those experiences from the perspective of the informant. This involved an evaluation of self-described events that constituted a progression from the beginning level of practice to that of expert. A qualitative investigation was useful in this instance because it concerned phenomena or events about which little is known and it did so from the perspective of the subject (Field & Morse, 1985; Harris, 1968).

<u>Case Study Approach</u>

The case study examines a specific phenomenon such as an event, a person, or a process (Merriam, 1988). Wilson conceptualizes the case study as a process "which tries to describe and analyze some entity in qualitative, complex, and comprehensive terms not infrequently as it unfolds over a period of time" (1979. p. 448).

Merriam (1988) discusses four characteristics of qualitative case study research:

- It focuses on a specific situation, event, program, or phenomenon;
- Case study research encompasses an abundant description of an incident under study;

- The case study elucidates the reader's understanding of the phenomenon being studied; and

- Case studies rely on inductive reasoning.

The present study met all four of Merriam's criteria. It examined (a) the phenomenon of becoming expert and the events surrounding that achievement; (b) was based on lengthy, intensive and detailed interviews; (c) clarified for the reader how experts achieved their status; and (d) attempted to develop new concepts from the data rather than verify hypotheses from existing theory.

Application to Present Study

Experts are found in all professions. Nursing is a profession requiring specialized knowledge that is applied to human illness and behavior. Nurses enter the profession with limited experience in applying knowledge and skills to a diverse clinical setting. As nurses gain experience, knowledge, and undergo formal or informal education they have the opportunity to advance through stages from novice to expert.

Qualitative research attempts to gain insight through uncovering the meanings attached to a phenomenon and seeks to explore the depth, richness, and complexity inherent in the phenomenon (Burns & Grove, 1987). The phenomena under study in this dissertation were the events and experiences

involved with becoming an expert nurse, and the data were presented as descriptions of these events in selected nurse's lives.

THE POPULATION

Any study, qualitative or quantitative, is only as good as the observations on which it is based. By definition, a qualitative study focuses on a relatively small number of cases, but treats each intensively. This section will describe the population that was studied and will discuss the implications of selecting that population.

Population Description

Goetz & LeCompte's (1984) comprehensive sampling strategy was used in this dissertation in which all cases in a relevant population were examined. The population targeted for this study was comprised of registered nurses who work as clinical nurse specialists in a large acute care hospital in Northern Virginia, and who were identified to be expert clinicians through established criteria from their job description. The job description states that the clinical nurse specialist "demonstrates in-depth knowledge of her specialty area, and independently applies theories and concepts derived from the biological, natural, and behavioral sciences" (Fairfax Hospital, 1988, p. 1). According to Benner (1985), the clinical nurse specialist

has an in-depth knowledge of a clinical population and applies the latest theories and technical innovations in practice, and is a clinical expert (Gassert, Holt, & Pope, 1982; Wolf, 1990). Wood (1985) defines an expert as someone who possesses extensive knowledge and skill in a specific domain. Dreyfus & Dreyfus (1980; 1986) describe an expert as someone who has extensive experience and can respond to situations effectively based on a vast memory store and successful past experiences. For a nurse to be a clinical nurse specialist at the designated hospital, she must meet educational and experiential qualifications, and 75 criteria in categories of nursing process, professional responsibilities, and research (see Appendix A). These qualifications and criteria are typical of those identified by Benner (1984) as describing expertise.

For example, one criterion states "uses specialized clinical knowledge . . . for meeting the needs of a specific patient population (Fairfax Hospital, 1988, p. 2). This criterion supports the definitions purported by both Benner (1985) and Wood (1985). Other criteria including "uses knowledge of a variety of models in order to consider alternatives that explain and predict present or potential problems" (Fairfax Hospital, 1988, p. 5), and "uses systematic methods of scientific inquiry to investigate

patient care and nursing problems" (Fairfax Hospital, 1988, p. 7) support the description of expert outlined by Dreyfus & Dreyfus (1985).

There are eleven clinical nurse specialists at Fairfax Hospital. One CNS declined the invitation to participate in the interview process because of her perceived inability to provide reliable information. The population of clinical nurse specialists encompassed the following clinical specialities:

Medical Nursing: General medical nursing, oncology nursing, gerontology nursing, and diabetes education;

Maternal-Child Health Nursing: Perinatal nursing and pediatric nursing;

Critical Care Nursing: Medical-surgical nursing, cardiovascular nursing, and trauma nursing.

A demographic questionnaire (Appendix B) was given to each CNS immediately following the interview session for purposes of describing the population and assisting the researcher locate the respondents in relation to other people (Patton, 1980). This information was gathered following the interview session so as not to affect the interview dialogue.

Five of the CNSs received a Diploma as their basic educational preparation, four a Bachelor of Science in

Nursing Degree, and one an Associate Degree in Nursing. All ten of the CNSs have Master's degrees and one has a Doctorate of Nursing Science Degree. Their total years of experience in nursing range from eight to fourteen years, and their time as a CNS range from six months to eight years. All of the CNSs except two have remained in the same area of clinical specialty. The two who changed specialties did so because of an opportunity to expand their professional interests. Descriptive data on the CNSs are summarized in Appendix E.

The decision to select expert nurses from a single facility was based on several considerations. First, the selection criteria were so stringent and controlled that it was highly likely that the population characteristics would appear the same no matter where the clinical setting. Second, the hospital in question is the largest in Northern Virginia and represents a diverse clinical arena as well as nursing staff. Third, the size, reputation, and complexity of the targeted hospital facilitated easy access to many expert practitioners. Fourth, the investigator is employed at the same institution and was intimately familiar with the qualifications and performance of the respondents. She was also personally acquainted with the respondents and enjoyed excellent rapport with them, thus facilitating the interview

process and the degree to which respondents were open and candid.

Population Size

One of the techniques of qualitative research is to collect data until no new information is obtained (Field & Morse, 1985). Glaser and Strauss (1967) refer to this concept as "theoretical saturation" whereby the researcher stops sampling when no additional data are found or when he sees similar instances are repeated. Therefore, the decision to stop interviewing occurred when no new relevant categories or themes appeared in the interviews. It was anticipated that interviewing all ten clinical nurse specialists employed in the targeted hospital would exhaust the breadth of available information because the range of key concepts and variables that were explored were narrow and defined a very specialized field of practice. Had the ten interviews not resulted in "theoretical saturation", similarly qualified registered nurses at hospitals in the Northern Virginia, Washington, D.C., and Southern Maryland area would have been sought out. However, saturation was reached with the ten interviews.

Co-Researchers

This study involved the subjects as "co-researchers". The notion of a co-researcher in a study means that the

subject is more than just a source of information, he is actively involved with the researcher by agreeing to participate in some study of Benner's novice-to-expert framework and verifying the transcripts from the interview. It is a recognized and useful approach to qualitative research. He or she provides data and validates the descriptions recorded by the investigator (Asmuth, 1987). The co-researchers were engaged in the research process by jointly investigating the novice-to-expert framework and its application to expert nurses.

Each nurse in the population was contacted and a meeting scheduled during which time a brief description of the study was provided as well as a detailed explanation of the novice-to-expert framework. Their role as co-researchers included participating in a tape recorded interview, reading, analyzing for accuracy, and returning the transcript of their interview to the investigator within two weeks following the interview.

DATA COLLECTION

Data were gathered through face-to-face interviews conducted by the researcher. The interviews were taped and lasted approximately one hour -- ranging from around fifty minutes to ninety minutes. Only one session was required for each CNS to cover the interview guide. Privacy was

maintained during the interview and anonymity guaranteed to facilitate candid responses. The interview questions were open-ended to allow discussion to be free-flowing and unrestricted. The researcher, however, had the responsibility to maintain a focused dialogue.

The interview was directed by a list of questions and issues to be examined, but neither the exact wording nor the order of the questions were necessarily invariable. According to Merriam (1988), this format allows the researcher to respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic. Less structured formats for interviewing assume that respondents will define the world in unique ways. This approach helps ensure that the interview accesses the perspective of the person being interviewed and does not force the subject to think or respond in terms of predetermined categories (Patton, 1980). Flexibility in question order and wording were maintained in order to explore themes not present on the interview guideline or unanticipated by the researcher. See Appendix D for the interview guide.

Prior to the scheduled interviews, the interview guideline was mailed to each subject so that they could have the opportunity to speculate on the requested information

prior to the formal interview session.

At the time of the interview each subject was asked to sign an authorization form consenting to participate in the study (see Appendix C). In addition, the investigator explained the study to the hospital Nursing Research committee and received permission to gather data from hospital employees.

Following each interview, a copy of the transcript was sent to the CNS for review. No changes were made in the content and all stated the interview transcript accurately reflected their thoughts regarding their practice.

Data Collection Instrument

An interview project is only as good as the questions it asks. Preparing questions for a research study serves two purposes: It is a means of translating the research purpose and objectives into specific and measurable language; and it is a way of motivating respondents to share their knowledge and experiences related to the phenomenon under study (Denzin, 1970). This study used the experience/behavior type of questions described by Patton (1980, p. 207) which are aimed at "eliciting descriptions of experiences, behaviors, actions, and activities that would have been observable had the observer been present."

The interview guideline (see Appendix D) consists of

questions that led the co-researchers through the developmental process of achieving expert practice. The co-researchers were asked to engage in reflective thinking, tracing their clinical practice through the novice, advanced beginner, competent, proficient, and expert stages, and to delineate key events or factors in their development.

The interview questions were structured around the five salient factors discussed in Chapters One and Two of this dissertation. As noted, the factors (information-procession, problem-solving, intuition; mentors and mentoring; motivation and education; experience; and institutional incentives) have been suggested by the literature to influence the attainment of expertise. The first factor is *information-processing, problem-solving, and intuition*. This section includes descriptions of critical incidents in which experts used problem-solving and decision-making skills. According to Benner (1984) a critical incident is a patient situation that went unusually well or in which things did not go as planned, and in which the nursing interventions made a difference in patient outcome. The questions in this section focus on how nursing practice is conducted. Additional structure for this section is based on key concepts that are identified from each stage of the Benner framework outlined in Chapter One.

Examples to illustrate these key concepts include the reliance on policies and procedures by nurses during the novice stage and the incorporation of intuition to anticipate complications during the expert stage.

The next major factor is *the role of mentors*. Since the nursing literature is replete with studies supporting the value of mentors in guiding nursing practice (Bolton, 1980; Darling, 1985b; Fagin & Fagin, 1983; Ferris, 1988; Friesen & Conahan, 1980; Greipp, 1989; Hamilton, Murray, Lindholm, & Myers, 1989; Haste & Shank, 1989; Hitchings, 1989; Kinsey, 1990; Mooney, Diver, & Schnackel, 1988; Puetz, 1985; Shamian & Inhaber, 1985; Vance, 1982), it is appropriate to investigate their role in professional career development and the impact they may have had on career decisions.

The third factor is *motivation and education*. Research suggests that people who are motivated to participate in learning activities often do so because they are pursuing a goal or seeking professional advancement (Boshier, 1971; Burgess, 1971; Houle, 1961; Sheffield, 1964). These same motivators would seem to apply to those people who achieve expert status in their professional lives.

The fourth factor -- *experience* -- is widely recognized in most fields as critical to developing competence. It is central to learning such skills as priority setting,

organizing work activities, and decision-making. It has been documented that the quality and quantity of experience has an impact on expert achievement (McCall, Lombardo, & Morrison, 1988).

The last factor, *institutional incentives*, relates to rewards and opportunities that are usually a part of a benefit package in most institutions and are designed to stimulate people to develop their professional skills. An example of an institutional incentive is a career ladder which specifies the criteria that must be achieved for promotions and is usually designed to encourage expert achievement (Lomurno & Downing-Janos, 1990).

The professional development of expert nurses were traced through the novice-to-expert framework. The data that emerged were analyzed and theoretical propositions explored.

DATA ANALYSIS

Data analysis is an integral part of the research process, not a step that takes place at the end (Rockhill, 1982). This means that all parts of the research process from concept formulation to question guideline must be carried out with the goal of developing data appropriate not only to address the research question, but also for the methods and techniques envisioned for the analysis. One

does not, for example, develop an instrument which results in nominal level data if a multivariate technique such as factor analysis will be used in the data analysis stage.

The interview guideline was designed to elicit information on the development of expert nursing practice. Because the data for this study were narrative in form, qualitative descriptive analysis was the appropriate data analysis method. There are, of course, many types of qualitative descriptive analysis ranging from highly quantitative word frequency counts to a more inductive approach of identifying key concepts and ideas. This study used the latter approach of isolating key concepts which surfaced frequently in the course of the interviews. The first step of data analysis was the identification of words and phrases from the transcribed interviews that resembled key concepts that identify factors that influence the progression toward expertise and that relate to characteristics describing each of Benner's stages. Specifically the researcher searched for words and phrases related to the five factors discussed in Chapters One and Two as influential in attaining expertise and describing clinical practice from novice-to-expert. As noted earlier, the researcher was open to allowing further categories to emerge and to the inclusion of factors not identified a

priori. Appendix F presents an example of this process for one interview, demonstrating the association between statements from the interview transcript and the concepts discussed earlier.

The next step of data analysis was to evaluate the frequency and salience (intensity or importance attributed to a certain factor) with which the factors were cited. A factor was considered to appear "frequently" if it was mentioned by more than half of the interviewees. Because the five factors were used to structure the interview guideline, all of the factors were mentioned to some degree by the interviewees. The primary use of "frequency" during data analysis, then, was to analyze the impact of unsolicited factors mentioned by the CNSs.

A factor is highly "salient" if mention of it was accompanied by adjectives such as "very important", "vital", "critical", "essential", "necessary", "significant", and the like, or the interviewee devoted extensive attention to a factor (as defined by exceeding the median number of lines in the interview transcript). Consideration of a factor as having an influence on achieving expertise was based on either frequent mention of that factor or high salience.

The use of median number of lines to judge salience was determined to be an inappropriate method to employ in this

research. By definition fifty percent of the interviewees always fell above the median and fifty percent below the median, which did not allow for meaningful differentiation. Because of this, a sum of the total number of lines devoted to a discussion of the factor by all the interviewees was used to evaluate salience rather than the median.

Since there were no comparisons drawn among interviewees, the possibility of a CNS being exceptionally verbose did not affect the results. The data were examined across factors and the total number of lines for each factor was evaluated for salience.

The analysis was carried out by a combination interview log system described by Merriam (1988) with assistance from a computer program which stores and retrieves narrative data (Seidel & Clark, 1984). The interview log system identifies important comments or ideas that reflect key concepts related to the phenomenon being studied. Exact words, phrases and sentences were noted and coded according to location (by line number) in a transcript of the interview tape. The computer program then was able to pull out all occurrences of a given concept or concepts.

The organization of the question guideline is a natural first approach to the data. The initial analysis was explicitly to seek and examine the data in light of these

categories. For example, statements that related to the impact of mentors and mentoring on professional advancement were coded under a "mentors and mentoring" rubric.

Since the qualitative approach is exploratory in nature and relies on the data to organize themselves to some extent, the researcher was cognizant that categories other than the five set out above may suggest themselves or it may be found that one or more of the five *a priori* categories had little value in explaining the achievement of expert practice.

LIMITATIONS OF THE STUDY

The limitations of this study were primarily concerned with the participation of the investigator in data collection and coding, as well as the familiarity of the investigator with the population under study. Knowledge of and recognition of the limitations in any study are important to appropriate interpretation of the findings. A critical responsibility then, of the investigator was to take precautions to soften the effects of all possible limitations and restrictions on the research study (Abdellah & Levine, 1965).

The first limitation of the research is that the study was conducted at the researcher's place of employment and the investigator works with members of the population under

study. A potential effect of this situation was an inclination to respond in a certain manner during the interviews so that information was presented in the most ideal or expected manner. This could have occurred because of the respondents desire to see a colleague succeed in doctoral research.

A precaution that was taken to diminish the effects of this situation was the use of the interview guideline. The investigator asked specific questions stated on the guideline and encouraged respondents to be as candid as possible. In addition, reassurances were given by the investigator that anonymity will be maintained at all times during data analysis and reporting of findings.

The second limitation of the study was that the researcher conducted all the interviews, coded the data, and reported the findings. The potential effect of this situation might have been enhancement or exaggeration of findings to the point of inaccuracy.

A safeguard taken to diminish the effects of this situation included a commitment by the investigator to engage in professional conduct during data collection and analysis. In addition, the use of the interview guideline during data collection and the incorporation of tape recorded interviews and review of verbatim transcripts

helped to decrease the effects of this limitation.

Because of the above stated limitations and the exploratory nature of qualitative data analysis, the reader should regard the conclusions as preliminary, subject to more intensive investigation. As Miles & Huberman (1984) state, " . . . we have few agreed-on canons for qualitative data analysis, in the sense of shared ground rules for drawing conclusions and verifying their sturdiness" (p. 16).

SUMMARY

This chapter set out a qualitative case study strategy for exploring the factors that are influential in attaining expert practice among professional nurses. The population consisted of ten clinical nurse specialists employed in an acute care hospital in Northern Virginia. The role of the subjects as co-researchers was explained as well as the implications of this role for the study. The interview approach to data collection was established as well as the format and rationale for the development of the instrument. A brief description of the approach used to analyze the data was presented and the limitations stated.

C H A P T E R   F O U R

RESEARCH FINDINGS

INTRODUCTION

This chapter presents an analysis and interpretation of the clinical nurse specialists' (CNSs') responses to the interview questions discussed in Chapter Three and set out in Appendix D. The questions were developed to operationalize the concepts in Benner's novice-to-expert framework, the theoretical framework that guided this research. The discussion presented in this chapter will begin by tracing the professional career development of the CNSs through Benner's framework. This process begins with a description of the CNSs' clinical practice immediately following graduation from their basic nursing program (novice) and continuing through the stages to their current level of practice as a clinical nurse specialist (expert). Next, the discussion will analyze the factors presented in previous chapters that were suggested to have an influence on advancing practice. Finally, the chapter will conclude with an assessment of the factors that were most influential in advancing practice of the clinical nurse specialists studied here.

In keeping with Benner's research, emphasis is placed on extrapolating information embedded in clinical practice. In

other words, the core of professional nursing is described by what nurses do for patients and how they interact with them to achieve therapeutic results. According to Benner (personal communication, March 20 & 21, 1991), the hallmark of expertise lies in the ability of the nurse to "tell a story". According to Benner this skill involves the nurse providing a detailed description of clinical incidents, including every aspect of care provided to the patient. The expert nurse is usually able to recall and discuss patient situations in their entirety, hence, the rationale for questions requesting the CNSs to describe specific patient situations at each stage of Benner's framework. All CNSs were able to "tell their story" during the interview, as well as describe in great detail what happened with a patient, how they intervened, and what their concerns were at the time. This ability further supports the selection of CNSs as experts.

NOVICE-TO-EXPERT DISTINCTIONS

By examining clinical practice characteristics of each stage described by Benner and comparing them with the experiences described by the CNSs in the interviews, the progression from novice to expert was illustrated. The characteristics that Benner uses to describe each stage include behaviors and capabilities exhibited during problem-

solving and decision-making activities.

The interview transcripts were examined for Benner's defining characteristics, thus confirming the nature of the progression from novice to expert that occurred within the population of CNSs. For example, during the novice stage Benner asserts that the nurse is very task-oriented and focuses much of one's attention on the technology associated with patient care. All of the CNSs cited this characteristic when they were describing their practice immediately following graduation from nursing school. Similar examples for the other stages of Benner's framework are presented in Table 1.

<u>Novice</u>

The novice period was recalled by all CNSs as a time that was very demanding and overwhelming. It was also a period where they were very dependent on others for direction and lacked confidence. The situations that were described demonstrated that the novice nurse is typically task-oriented and focuses on the technology of patient care, rather than assessing the patient with the assistance of the technology. With the total focus on the technical aspect, the novice nurse is unable to evaluate the clinical manifestations demonstrated by the patient and make an accurate assessment of the situation. Novice nurses

Table 1

Benner's Novice-to-Expert Continuum:

Characteristics and Exemplars of Each Stage

<u>NOVICE</u>

	<u>BENNER</u>	<u>EXEMPLARS</u>
CHARACTERISTICS DESCRIBING CLINICAL PRACTICE	*Focuses on technology *Task-oriented *Focuses on "pieces" of patient care - - cannot see the "whole" patient	"I was totally fixed on the catheter and the technology to the exclusion of the patient."
	*Relies on rules	"You use all the rules you know."
	*Depends on objective data	The parameters that I used to evaluate his condition were his vital signs."
YEARS OF EXPERIENCE	None	"The most challenging and demanding aspect of patient care immediately out of school was the organization skills."

<u>ADVANCED BEGINNER</u>

	<u>BENNER</u>	<u>EXEMPLARS</u>
CHARACTERISTICS DESCRIBING CLINICAL PRACTICE	*Technology has been mastered	"I wasn't worried any more about if I could do the procedures."
	*Begins to set priorities	"I was also beginning to be able to prioritize."
	*Can intervene in un-complicated situations	"I had intervened in problem situations appropriately."
	*Able to see the "bigger picture"	"As I walk into a patient's room I could see respiratory rate and could assess chest expansion."
YEARS OF EXPERIENCE	One year	"I think I approached each patient more methodically at one year than I did right after graduation."

Table 1 (Continued)

COMPETENT

	BENNER	EXEMPLARS
CHARACTERISTICS DESCRIBING CLINICAL PRACTICE	*Efficient and organized	"By three years it was much more smooth. I don't believe that I was even consciously thinking about step by step." "I could do multiple things at once."
	*Can manage most complex situations effectively	"I knew where the trouble areas were on the majority of patients."
	*Sets priorities in terms of long-range goals	"I [knew] the skill of looking at the patient's pattern of illness, wellness, and recovery."
	*Focuses on outcomes	
YEARS OF EXPERIENCE	2-3 years	

PROFICIENT

	BENNER	EXEMPLARS
CHARACTERISTICS DESCRIBING CLINICAL PRACTICE	*Can discern situations as wholes rather than single episodes	"By five years I was starting to be intrigued by subtle differences." "I wanted to put things together and I wanted to be able to figure out everything for [my] patients."
	*Can zero in on an accurate region of the problem by considering the whole picture	"By year five I would walk into a situation and know exactly where I could go to get the [information I needed]." "I started to broaden my perspective."
YEARS OF EXPERIENCE	3-5 years	

Table 1 (<u>Concluded</u>)

<u>EXPERT</u>

<u>BENNER</u>   <u>EXEMPLARS</u>

CHARACTERISTICS DESCRIBING CLINICAL PRACTICE	*Intuitive	"I definitely use intuition in patient situations."
	*Can anticipate problems	"Now I anticipate more by patient presentation."
	*Automatic in thought processes	"I combine [priority-setting] all at the same time. I do the life sustaining things so fast that at the same time I'm thinking about other things."
	*Can identify subtle patient problems	"I'm much better now at finding subtle and early problems."
	*Has a thorough understanding of the total situation	"I knew exactly what had happened and knew what to do."
	*Has in-depth knowledge of a patient population	"I was ready for [the bleeding in this child] and I knew the process and knew exactly what to do about it and what was going to be the outcome."
YEARS OF EXPERIENCE	> 5 years	

graduate armed with the theoretical knowledge but have had limited opportunity in the clinical arena to apply the knowledge. For example, nurse four recalled her experiences as a new graduate:

> "I think that the most challenging and demanding aspect of patient care when I first, immediately, got out of school was the organizational skills that I needed in order to complete all of the tasks on time..."

Nurse five described her experiences in an ICU:

> "What I was stuck on was the EKG, and the EKG looked like a sine line, it just went up and down but very slowly up and down, nothing like a V-Tach, and it certainly was not asystole, and I thought there must be something wrong with the monitor or there just had to be something else. . . . the EKG alarm went off, I never looked at my patient. . . I took the patient for granted and stuck with the machinery."

Nurse six discussed her experience with a patient who had complications from a foley catheter insertion:

> ". . . I was totally fixated on the catheter and the technology to the exclusion of the patient. There was no man in bed. . . I had just absolute tunnel vision about this part of the patient, every other aspect of his care was immaterial to me and that I could not focus beyond it."

Nurse eight recalled her experiences in a burn ICU and her overwhelming feeling of inadequacy in focusing beyond the technology:

> ". . . the technical part of the job truly overwhelmed me. I spent a lot of time just trying to figure out how to put an arterial line together. . . and I didn't even know what an A-line was. So I was absolutely overwhelmed. . . what I remember specifically about my practice was that it was very technically oriented. I had all I could do just to keep up with the

technology and understand what I did. Just the hands-on mechanical components, I couldn't tell you what those numbers meant. Probably that's what I relied on for sure -- monitors. . . it was making a wave form that looked like V-Tach. I didn't look at my patient at all. I called the resident staff, got the defibrillator in, I mean, did all those kind of things. He was sitting there wide awake. . . I don't think I took the patient into consideration. I just looked at the machine."

Benner emphasizes the impact that rules play in guiding the novice nurse. These rules typically emanate from textbooks, policies, or procedure manuals. Nurse five stated:

"It was step by step and it had to be by the rules, and I had to fix one thing at a time, and then I could go to the next."

Nurse seven stated:

". . it's just real classic that you use all the rules you know, but that you don't have the mental map that helps you to look, to anticipate as clearly what might have happened."

A distinction made by Benner (1984) between the novice nurse and a nurse with greater expertise is the inability of the novice to look at the whole patient. The novice typically will focus on one part of the patient at a time, to the exclusion of other parts that may have a higher priority. This can be critical for the beginning nurse who may miss some important information or may be focused in a different direction from the needs identified by the patient or family.

Another distinction between the novice and the more

advanced nurse is the almost total reliance of the novice on obvious and routine parameters for assessment. Vital signs (temperature, pulse, respirations, and blood pressure) are the most frequently assessed and the most depended upon for patient evaluations. Nurse one described her experiences with a demented patient:

> "It was still more, very much more, looking at the patient's systems than looking at their function. I was more focused on parts of them than the whole patient and where do we go from here. I had like no sense that this illness would affect him later. . ."

Nurse three stated:

> ". . . my evaluation was mainly focused on what their color was and were they breathing or not".

Nurse nine recalled:

> "The parameters that I used to evaluate his condition were his vital signs."

Nurse ten recalled:

> "So the approach to the nursing interventions initially was probably more at looking at the functions or the behaviors that I had to accomplish for that particular day, more than looking at a whole patient."

These examples of CNSs' practice as novice nurses clearly demonstrated some deficiencies of their practice. On the one hand they needed to rely on rules to govern their practice, but on the other hand these rules tended to be restrictive and inflexible. Benner (1984) states that following rules does not necessarily contribute to successful performance because the rules, which are usually

theoretically-based, do not always direct the novice to the most appropriate tasks to perform in an actual patient situation.

The novice has little understanding of the contextual meanings of the learned theory. The Dreyfus framework differentiates between the level of skilled performance that can be achieved through theory learned in a classroom and the context-dependent wisdom and skill that can only be acquired in real situations (1986). For the novice nurse to advance, direction and consistent validation must be available to assist that nurse to apply the theory learned in nursing school.

<u>Advanced Beginner</u>

The advanced beginner stage is a period following approximately one year of experience. The CNSs were able to recall this time when they began to feel more calm and confident about their practice. If the advanced beginner has remained in the same clinical setting, the technology, for the most part, has been mastered. When the technology is mastered, the nurse can then begin to see the total patient and assess needs more accurately.

The CNSs were able to recollect that their organizational skills by this time had improved to the point that they were able to see the bigger picture and focus

beyond one piece of patient care at a time. The advanced
beginner stage was also a time when the CNSs were able to
begin to prioritize. Nurse five described her experiences
integrating her assessment skills in an ICU setting:

> ". . . as I walk into a patient's room I could see
> respiratory rate, and could assess chest expansion, and
> I did not have to think to check this, check that, and
> as I would listen to the heart sounds, I would also
> listen to the breath sounds, and I would listen to an NG
> tube placement or abdominal sounds but when I had my
> stethoscope in my ears, did my blood pressure, and did
> everything that needed to be done with the stethoscope .
> . . I did not have to consciously think about what color
> is the skin, is it warm, putting on the blood pressure
> cuff, and those things were starting to be integrated
> into how I get all of my information on my patient. . .
> I was also beginning to be able to prioritize. . I had
> gotten to the point where I could decide if something
> could be done by the rules and step by step or if there
> were things that I could identify and which key things
> to assess, and which had to be done more quickly, and
> then go back at a later time and do the other systems."

Nurse two discussed her skills as an advanced beginner:

> "I had intervened in problem situations
> appropriately and had good outcomes . . . I had the
> nursing process down of knowing how I was going to
> approach the patient at that point. My assessments were
> becoming accurate and skillful and I had more confidence
> in them . . . I think I approached each patient probably
> more methodically at one year, than I did right at
> graduation."

Nurse seven realized at the advanced beginner stage that she
had a great deal more to learn but was no longer concerned
about the technology. This awareness develops because at
this stage the nurse seems to be making the transition from
being totally outwardly focused to examining internal

strengths and areas for development.

> "I felt more self confident in some ways at one year, but I also felt really humble because I thought there was so much more that I could know . . . I remember thinking . . . there is so much more to know than what I know, so I felt very introspective and I felt confident. I wasn't worried any more about could I do the procedures."

Nurse ten summarized nicely the feelings that are common for the advanced beginner:

> "I think in your first year of nursing, in some degree, you're very timid, almost like a sponge, soaking information. You want to watch what people do, how do they handle a certain situation, how do they handle patients, the families, the physicians, the stress of the job . . . I felt like a sponge, no doubt, the first year."

These reports from the CNSs suggested that the advanced beginner stage was a transition period in the life of a professional nurse. The advanced beginner is identifying what Benner (1984) calls "aspects of the situation", which are repetitive and crucial situational elements of real life experiences. In order to recognize these "aspects", the advanced beginner must have prior experience in actual patient situations (Benner, 1984).

A critical element during this stage is support in the clinical setting from a mentor who has reached at least the competent level of performance (Benner, 1984). This will assure that patient needs are not omitted and appropriate priorities are identified and acted upon.

Competent

The competent stage for the CNSs was clearly a time when they felt more comfortable with their practice. It occurs after approximately two to three years of experience. It came after much effort and a learning period fraught with many struggles. Prior to the competent stage there were often feelings of uncertainty regarding nursing as a viable career option. The competent period for the CNSs offered opportunities for expanded practice and consideration of graduate education. Several CNSs recalled becoming preceptors for new nurses, which in their minds validated their capabilities in role-modeling and clinical teaching.

The CNSs' level of adroitness at the competent stage came from many exposures to similar patient situations. They were perceived as being a clinical resource among their colleagues. Two CNSs described their practice during that time:

> "At three years, I think my practice with those patients had become much more confident. I knew what one could expect from those patients as well as the parameters one would want to assess as well as knowing where the trouble areas were on the majority of the patients . . . I had experienced a lot of the problems, I had had some of my assessment skills validated."

> "How I learned the skill of looking at the patient's pattern of illness and wellness, and recovery, was just from repeated exposures to the patients . . ."

The ability to comprehend and integrate normal

physiology is an important component at the competent stage.
Having mastered the theory and the technology, the nurse can
now advance in areas of nursing science requiring more
sophisticated application processes.

The following report from one CNS indicated that she was
able to apply normal physiology but was not yet able to
analyze and apply pathophysiology to patient care:

> "The patient would have chest pains and because I
> couldn't see where the injury was on the heart, I had a
> hard time understanding how that injury on the heart
> could affect his myocardium and therefore affect him
> systemically, so I could understand the numbers and I
> could treat those numbers and I learned to dial drips
> and all those kinds of technology kind of things, and I
> learned to look more at my patient, but probably still
> couldn't understand the pathophysiology that was going
> on underneath all that."

When considering the processes of accessing and
retrieving essential knowledge, it is important to remember
that prior to this point the CNSs had been totally focused
on individual aspects of patient care (i.e., treatments such
as wound care and dressing changes) and the technologies,
for example IV lines and monitoring devices. The ability to
apply physiological principles to disease entities is a
complex process and one that comes with years of experience
and a firm theory base. Maslow's (1954) hierarchy of needs
can be used here as an analogy. When the physiological and
safety needs are met (the corollary here being mastery of
the procedures and equipment), Maslow contends that the

individual can comfortably advance toward self-actualization (or expertise in the case of Benner's framework).

The competent level was characterized by a feeling of authority which is evidenced by efficiency and good organization skills. The CNSs recalled feeling delighted that they had attained a level of skill where they were more relaxed and confident. Nurse five recaps these feelings well:

> "By three years, it was much more smooth, and I don't believe that I was even consciously thinking about step by step. Somehow I just kind of knew what needed to be done. I would say that even in reports by that time it was not just sort of walk into a patient's room and have a catalogue of things to do. I could even plan my day, not having even seen the patient but feeling comfortable that I could and do an assessment and validate priorities, and be able to deal with what I thought was needed."

Nurse five described her organization skills, her adeptness in assessment, and her ability to incorporate many activities at the same time:

> "I could do multiple things at one time while asking that patient how they were doing. I would ask them to tell me a little bit about how their day had been, and that had open-ended questions that they had to answer hopefully in more than one word, and that told me what the patient felt were his priorities, and where they were psychologically. The way they spoke told me what their respiratory pattern was like, and how their orientation was, if they could understand a question at that level, so those kind of things started coming in by three years, and I could accomplish many more things with one intervention."

Competency is described by Benner (1984) as the ability

to see his or her actions in terms of long-term goals or plans. The plan mandates which aspects of the current and future situations are to be considered essential and those which can be omitted. The CNSs were able to assume responsibility for setting long-term goals at the competent stage. This came about because of their expanded vision and their focus on outcomes. The CNSs' skill at handling most patient situations effectively seemed to groom them for the transition from tunnel-vision to a more broadly perceived outlook.

Proficient

The proficient stage is marked by approximately three to five years of experience. From the perspective of the CNSs, the hallmark of the proficient stage was an added measure of confidence. The confidence noted at this stage was the assurance that came from years of validation, repetitive interventions, and positive feedback. It was also the conviction of knowing that decisions were consistently accurate and knowledge was respected by colleagues, supervisors, and physicians. Several CNSs discussed their feelings of confidence:

> ". . . when we moved to the five year mark I was
> still functioning at a high level but if I didn't hear
> something I would know that was something wrong, as
> opposed to I don't think I'm hearing any lung sounds
> here, I know I'm not hearing any lung sounds here. Far
> more confidence . . . I probably felt like I could

handle anything that came up."

"I could, by that point, teach them and would have the new people coming to me asking me some questions. Which was kind of nice."

"The confidence was definitely different."

"And at five years, I had had more experiences in a different variety of nursing so I was much more confident, much more independent in my practice . . . but by that time I was more confident in my practice that I could actually mentor younger people and new nurses to the program, and more confident that I would actually take a progressive role in that patient's care."

Another significant aspect of practice that evolved during the proficient stage was the curiosity to learn more particulars about patients' symptoms. The CNSs were no longer satisfied with just accepting clinical manifestations without knowing why, the origin, and the cause. Comparing patient scenarios was an important developmental process during this stage because it provided the knowledge base for the skill of anticipation which is one hallmark of expertise. Nurse five provided a description of her practice at this stage:

"By five years I was starting to be intrigued by subtle differences -- why was this patient different from that other patient, or challenging myself to find everything on a physical assessment that other people found, and whether they were pertinent to that particular diagnosis or not, but now, I wanted all nuances in breath sounds, and all of the nuances in heart sounds . . . I wanted to know about every different skin lesion, even if that patient had had it for years. I wanted to put things together, and I wanted to be able to figure out everything that had to

be figured out for that patient. But also, I think I wanted to be able to compare patients -- if they both had this murmur, and they both had this kind of a scar, how come this patient responded and this patient did not, how come this patient had an activity tolerance or breath sound, and the other did not. I wanted to know why things were not the same and this patient was discharged from the unit or discharged home, and there had to be some bigger picture going on, and I wanted to know why, where it was coming from."

Proficiency cultivated for the CNSs the desire to expand and broaden their horizons beyond their unit-based activities. It was a somewhat restless time when an inner hunger to pursue additional activities and responsibilities surfaced. This was reflected by one CNS's experiences as a resource on other units and another CNS's inclinations toward risk-taking:

"And so I started to move out of the strictly unit-based arena and perhaps broaden my perspective a little bit of moving into the surgical division . . . As a resource, and when I went to other floors, just getting pulled, I felt more comfortable that I knew what was going on."

". . . partly it's just a willingness to take risks and branch out and try new things."

Patient advocacy surfaced during the proficient stage as well. The nurse who functions as a patient advocate will intervene on the patient's behalf and will assist the patient and family in treatment decisions. This is a fairly advanced level of performance which requires a great deal of self-confidence and a strong knowledge base in order to evaluate appropriate and inappropriate clinical diagnostics

and treatments. This information is typically used to advise patients and families regarding the course of their hospitalization.

Knowledge application at the proficient stage is based on the ability to make decisions analytically and with little effort. Changes related to information processing and intellect were now seen. This is made clear from Benner (1984) who describes the proficient performer as the one most frequently able to detect deterioration or patient complications prior to explicit changes in vital signs. Two CNSs clearly summarized the proficient stage:

>"I would be the nurse assigned to the most critical patient and remember thinking this is real neat."

>". . . by year five, I would walk into a situation and not feel panicky -- know that I didn't know everything, but know exactly where I could go to get the knowledge."

Expert

Evaluating expert performance from the CNSs' descriptions of their clinical practice was intriguing. Their assessment skills, decision-making abilities, and their application of a vast knowledge base to difficult patient situations has offered additional support for encouraging and facilitating advanced practice in nursing.

Several themes emerged consistently throughout the interviews. The first was the CNSs stated ability to

function independently in all aspects of patient care. This was an important skill because independent practice is the dimension of nursing that affirms credibility and assures effective patient outcomes. Because inexperienced practitioners are typically dependent and seek validation and consultation, patient status could quickly deteriorate while they are seeking direction. The following short phrases from the interviews corroborated this finding:

> " . . . the interventions that I took were far more independent . . . I've become much more independent in my functioning . . . "

> "At this point, I don't seek validation . . . Right now, I rely on my own skills . . . I don't need another person's validation . . ."

> "My interventions were patient-oriented and I felt independent and directed others."

> "I feel independent in a lot of the things that I am very comfortable with."

Another point that evolved during the interviews was the CNSs' ability to identify insidious patient problems and anticipate complications, primarily through the use of intuition. A nurse's expertise is often recognized by one's ability to observe the near indiscernible, predict difficulty, and intervene to prevent problems. Several CNSs offered the following comments:

> "I'm much, much better now at finding very subtle problems and early problems."

"That I could anticipate what the patient needed, even though it might have been a sudden turn of events, that I could assess them properly and know what you need to set up, and have it ready before the physician even gets there."

" . . . there were much more subtle assessments going on, that I felt comfortable with."

"Now I anticipate more by patient presentation than anything else."

Nurse eight offered a graphic representation of this skill:

"Another patient I remember is a woman that came in with a dissecting aortic aneurysm and she started getting nauseous. I remember thinking, I can't let this lady get nauseous. I don't want her to get nauseous. If she starts to vomit, she's going to blow that aneurysm. Unfortunately, she did get nauseous and unfortunately she did vomit even though we [tried to] stop it and she did exactly what I predicted her to do. And as soon as she did, I knew exactly what had happened and knew what to do though. We knew we had to get her to the OR. But I predicted all that. I knew that's what was going to happen if she did that. I could never have done that in my first year of experience. I wouldn't have had a clue that if she vomited that she was going to blow an aneurysm. It would never have clicked."

Nurse nine offered her experiences in anticipating patient

problems:

"I was working in the intensive care . . . taking care of a post op cardiac child . . . and this child had an allograft put in, and she came right from surgery to us . . . they are very, very unstable patients, and I felt like I really had to have a good handle on what I was doing to be able to participate in the situation at all. But in this case, her complication was that she was bleeding excessively. But the difference in where I was coming from was that I anticipated that and I knew that was going to be something that we were going to be looking for and there's no question that it was challenging, but my comfort level was so much different . . I just knew exactly what I was going to look for and

I knew exactly what I needed to do and what I was going to anticipate and running through the scenarios - if this happens, this is what I'll do and that kind of thing . . . when she came back, she was bleeding a lot and there was a time when all of a sudden the chest tube really put out much more blood than I was comfortable with, and that sort of rattled me a little bit. But again, I just was ready for it and I knew the process and knew exactly what to do about it and knew why she was bleeding and what was going to be the outcome."

Another significant finding from the CNSs was the ability to understand and apply pathophysiology to patient care. This knowledge requires not only a firm understanding of normal physiology but also a comprehension of disease processes. This is learned in the classroom, but the expert has the capability to apply it in actual patient situations which demands more rigorous mental processing than merely discussing hypothetical scenarios in a classroom. This ability requires discriminating and skilled mastery in the sciences of physical examination and symptom association. Nurse nine exemplified this process through the following illustration:

"But the independent part is that I understand the physiology behind it all and I can anticipate what I know is going to happen based on what the physiology is or the pathophysiology is and know what decisions I need to make and I know the protocol so there's a lot of knowledge involved in that . . "

The automaticity of thought processes that typifies expertise and is a major finding from the research of Benner and the Dreyfuses' was expressed by nurse eight as she

described her approach to priority setting:

>"I probably combine it all at the same time. I can
>do the life sustaining things so fast that . . . I'm
>thinking about other things going on at the same time."

Nurse six expanded on the above finding and described the

mental activities involved with her patient care:

>"So I take general information that I possess,
>relate it to the clinical situation and I then
>individualize that information to this particular
>patient based on what I know about their physiological
>and psychological history and my reactions to them . . .
>I then dig back into my practice base and look for and
>anticipate problems."

The CNSs, without a doubt, exemplified expert practice.

Their achievements and success stories about their patients

demonstrated all that has been studied and written by

Benner. Nurse six described how she knew she was practicing

as an expert:

>"When I got into enough clinical situations where I
>realized that I really did know more about the
>appropriate things to do for a patient than anybody else
>working with me, that I was able to get validation and
>affirmation from my own observations and I did not need
>to have that from other people."

A lasting and essential feature of expertise is the

skill of seeing the total picture -- the whole patient.

This skill encompasses a keen eye for the obvious physical

changes while at the same time remembering the psychosocial

needs of patients. Nurse eight described her approach to

patients which revealed her clinical mastery and

sensitivity:

"And I look at the whole patient. I look at the
entire picture of what's going on. I don't focus on
just my numbers. I look at the patient. I put my hands
on my patient, talk to my patient, and that gives me so
much more information than the numbers would even
possibly begin to."

The expert nurse has considerable experience and an
instinctive sense of each situation and can zero in on the
accurate region of the problem without wasteful attention to
a large range of alternative diagnoses and solutions
(Benner, 1984). The CNSs' practice exemplified this notion.

Benner (1984) conveys her thoughts regarding expertise
by saying that to capture the descriptions of expert
accomplishments is difficult because the expert operates
from a thorough understanding of the total situation.
Dreyfus & Dreyfus (cited in Benner, 1984, p. 34) state:

"The performer is no longer aware of features and
rules, and his/her performance becomes fluid and
flexible and highly proficient. The chess player
develops a feel for the game; the language learner
becomes fluent; the pilot stops feeling that he/she is
flying the plane and simply feels that he/she is
flying."

CONCLUSION

One important step in the advancement toward expertise
is the identification of expert accomplishments. Open
dialogue with experts is one method that offers less-skilled
nurses the opportunity to learn from a description of expert
performance. These excerpts from the CNSs have provided

classic examples from which to learn. They have also provided validation that this population of nurses identified with progressing through the five distinct stages of the Benner framework in their professional careers.

For the CNSs the transition to expert status involved many years of experience with patients in their individual clinical specialties. Even though most of the CNSs were a little embarrassed to admit mastery, when they began describing their practice it became evident to them. For the most part they were pleased with their accomplishments as well as their abilities to effect change and assure effective patient outcomes. The value of their accomplishments and the consequences of their advanced practice is well stated by Benner (1984):

> "The study of proficient and expert performance should make it possible to describe expert nursing performance and the resultant patient outcomes. This knowledge can be used to further develop the scope of practice of nurses who wish to and are capable of achieving excellence" (p. 35).

THE ADVANCEMENT TOWARD EXPERTISE

This study has demonstrated that the CNSs perceived themselves as having progressed through each of Benner's stages during their professional careers. What influenced them to progress from one stage to the next? If a nurse does nothing more than appear at work each day, some natural

progression will occur if there is some validation and set expectations. This process will most likely occur simply because of repeated exposures to similar and some varied situations. This same nurse, however, will most likely not achieve expert status without some additional developmental opportunities and personal effort.

This section will analyze the CNSs responses to the interview questions that were specifically related to the factors suggested in Chapter Two as influencing expert progression. Each factor was examined in detail to discover the impact, if any, the factor had on advancement. The techniques of examining frequency and salience was used to evaluate and compare the factors by determining the relative importance of each factor in explaining its significance on progression toward expertise.

Through the process of data analysis and synthesis, conclusions regarding the magnitude of each factor on achievement will be offered. As with the prior section, verbatim excerpts will be presented to support or disprove the impact of the factor on the CNSs' progression.

Factor One: Information-Processing, Problem-Solving, And Intuition

Information-Processing and Problem-Solving

The innate cognitive abilities of the human brain offer the species unlimited possibilities when it comes to

learning, reasoning, and memory capabilities. Functioning
at the level of expert requires the ability to draw on a
broader amount of knowledge and a greater memory store than
less advanced practitioners. Since the skills involved with
problem-solving encompass those associated with cognition,
information-processing and problem-solving will be discussed
together.

According to Benner (1984) the expert quickly embraces a
problem by viewing it in relation to similar and dissimilar
past situations and swiftly zeros in on the precise region
of the problem. The novice, on the other hand, must rely on
isolated, calculated considerations of as many variables as
possible. The following examples verified Benner's theorem
-- the first is from the expert stage and the second during
the novice period:

> "I think [I problem-solve] by taking my experiences
> from the past and using the knowledge [of] what worked
> in those situations and applying it to [the current]
> situation."

> "I think I probably did a little bit of [problem-
> solving] but I probably went more by what should be
> happening, what's the textbook picture . . . and what
> doctor's orders do I have . . I think I probably used
> [problem-solving skills] but in a very rudimentary
> fashion. Rigid versus flexibility."

There is evidence that experts attain, organize, and
convey information in a different manner from novices. This
comes from a vast amount of knowledge that has been stored

in memory and is readily retrievable for problem-solving. This knowledge store comes from many years of experience and opportunities for continued learning. The following examples demonstrated some of the advanced cognitive skills utilized by the CNSs during problem-solving:

> "I try to use deductive reasoning on how to problem-solve, and I try to base that on current literature, and current research."

> "When I problem-solve I probably do go through a problem solving process of collecting data, using all of my senses and then something happens after the data collection that is like the synthesizing of all of the information so that it may come out very differently than the way it went in. That process of synthesis is where the clinical experience plays into it. After that I generate a number of possible alternative solutions and I will prioritize those solutions but again not in a deliberate way."

> "I think a whole lot of my work is reframing the problem. I think if people identify a problem within a certain framework, one that is extremely familiar to them, as in respect to the bedside, sometimes if I reframe in a different way using a different kind of theoretical approach or a different meaning of the problem, then you are able to unfreeze the situation."

An obvious distinction between experts and less advanced practitioners is the speed with which they are able to assess a situation, solve problems, and move through multiple situations that have demanding and complex variables. This speed and flexibility comes from their ability to access information readily from short and long-term memory, effectively distinguish among various exemplars, and efficiently distribute cognitive knowledge.

This skill is refined through experience. The following illustrations establish this point:

> "Something that experience has done is it's decreased the time the problem-solving and decision-making typically takes."

> "I think the problem-solving and decision-making skills again came through experience."

All of the CNSs discussed their skills of problem-solving and their perceptions of how their proficiency had advanced. The CNSs did not, however, spend a great deal of time expounding on the value of problem-solving or its importance.

There are several possible explanations for this finding. First, the CNSs use a process for problem-solving that is so instinctive that to elaborate beyond a mere discussion of its utility might have seemed redundant or unnecessary. Secondly, since the method utilized for problem-solving is so quickly and automatically implemented, the CNSs' explanations and discussion of the process may have been abbreviated as well. And thirdly, since the CNSs were confident of their abilities to achieve effective outcomes, they may have attributed their success to other skills or knowledge and possibly have minimized the importance of problem-solving as an indicator of achievement.

Several features related to problem-solving nonetheless

emerged during the interviews. The first was the significant role of past experiences and the differences between novices and experts with regard to their approach to problems. Another feature was the difference between novices and experts in how information is processed, which has a direct impact on problem-solving abilities. Lastly, the CNSs discussed the speed with which they were able to problem-solve and how this impacted on their success.

Intuition

The discussion of intuition with the CNSs offered an opportunity to explore unchartered areas of cognitive processing they admitted not having examined in detail before. The CNSs all acknowledged using intuition in their practice and believed it was a valid indicator of patient status. A few had difficulty describing what intuition is and whether or not it is based on cognitive processing, objective data, or an innate sensation. If they were uncertain of it being based on objective data, they found themselves asking, what then was the sensation they felt?

Some of the CNSs attributed intuition to a cognitive process and others to observable subtle changes in the patient. Nurse seven described her thoughts on intuition:

> "I think intuition is a pretty participating kind of a mental map. When you have recognized a set of variables or a trajectory that you can expect for a certain patient in a certain situation and that

intuition is when you actually act on that without
breaking it down. And I think that the higher level of
practice is where you explore those situations and then
to understand them better. So intuition is probably the
antecedent to a more detailed theoretical understanding
. . . I think intuition has had an over simplification
of a pretty high kind of process."

The following excerpts are from several CNSs who

ascribed their use of intuition to their abilities to

observe subtle changes in the patient's condition:

" . . . I think that many times you're seeing subtle
changes you just don't know what you're seeing yet. The
assessment will change eventually. I think intuition is
more based on some hard data that is so subtle that a
less skilled practitioner hasn't picked up on it yet,
where a more skilled practitioner can pick up on more
subtle signs or more subtle changes that while they
haven't manifested themselves in numbers are still
present."

" . . . there probably are observable changes but
you can't pinpoint why those changes are occurring."

" . . . what is it about this respiratory rate and
this heart rate? I look for those objective parameters.
They're skewed out there. And the first thing that
catches me is very subjective. The way a patient looks
or acts. But then that problem-solving key, what is it
about that look, what is it about their actions? And I
try to define it objectively. And I have in each
situation, I have a number of variables that I'll look
at and say in my patient it is respiratory rate and it
is heart rate and it is activity tolerance."

The majority of CNSs, however, reported that their

intuition was associated with a feeling or sensation. The

following passages provided this evidence:

"And then there's just a feeling of doom about them,
I have a feeling of doom . . . you just walk in a room
sometimes and you just know that someone will not get
better."

"It's an unsettling feeling like something bad is
going to happen. And it's just a gut feeling and again,
I try to do the assessment to see what's wrong to know
what's not jiving and what is different from what I have
seen before. Sometimes there isn't anything
necessarily, and before you know, the patient has coded.
You can't pinpoint it all the time".

"There are people who just don't seem right, and the
numbers don't show it, and the assessments really don't
show it. They are going along all right, and I feel
that I know that they are not quite right but I can't
always justify keeping them in the CCU, or even keeping
them in the hospital, but I find myself doing much more
to help patients, and a lot of these patients wind up
going from the PCCU back into the CCU or being
readmitted after being discharged from the hospital.
They are just not progressing like every other patient
progresses. Its those glitches that I cannot put my
finger on, I can't define, its that gut, that
indefinable. Why do you feel that way, I don't know,
but most of them will pan out."

"I can remember saying many, many times, I just have
this feeling that there is something wrong with this
patient . . . When you look at a patient, you say, there
is something wrong. I just have a bad feeling about
this patient."

This last example summarizes nicely the feelings,

sensations, and physiological responses to intuition:

" . . . intuition is a feeling . . . It's a physical
experience. It's a rush of adrenalin or it's a
foreboding feeling or just sort of a calm feeling. It's
definitely something wrapped up in feelings. And my own
physiologic response too -- the rush of adrenalin, you
don't know why it comes but all of a sudden, it doesn't
feel right and you just know something is going to
happen and many, many times it's right. I think it's
very valuable."

Several CNSs associated intuition with their experiences

in prior patient situations. They described it as a

phenomenon wherein they were able to distinguish subtle

changes that they felt were discernible only by an expert eye. The following examples demonstrated the relationship between intuition and experience:

> "I do use intuition in patient situations. The longer I work with a group of patients, the more intuitive I can become about that type of patient . . . The longer I work with a patient group the more credibility the physicians gave me and would respond based on my intuition."

> "The intuition I've used, again, I think is based on my clinical experience in the past somewhere. Something is triggering my mind to say to me, I've seen a patient like this before and this is what was wrong with the patient, and therefore, this may be the same thing that happened to this patient."

> "Part of intuition is knowledge. Part of it is experience and practice."

> " . . . it's probably come from prior experiences more than anything else."

These examples have confirmed that intuition was perceived to be used regularly and consistently by the CNSs and was an important factor in patient diagnoses. The CNSs also felt intuition was a reliable indicator and one that was just as important as objective data. This was demonstrated through the following example:

> "I definitely use intuition in patient situations. I think intuition is really, really valuable."

During the interviews the CNSs were able to speak quite persuasively about intuition and its place in patient care. There was never any hesitation regarding the validity of intuition. The following examples of intuition used during

patient care endorsed its reliability:

" . . . we had a patient who was status post
chemotherapy and at risk for infection but he is on
every antibiotic known to man and woman and who just
didn't look right to me . . . So, intuitively I went in
because I knew the patient, I knew that there was
something wrong with him. I hadn't seen him over the
weekend but when I went in and talked with him I just
said to him something seems amiss here. And he said I
don't know what's going on, I just don't feel good or
right. So I went back out and then I had to try and
find hard data to validate my observation that
intuitively something was wrong. What I did find out
was there had not been a consistent care giver in terms
of a nurse or physician who had seen the patient in over
a period of three days who was able to draw comparisons
but in fact what had happened was that he had a gradual
increase in respiratory rate, he's had a gradual
increase in temperature, although he was not overtly
febrile, that basically what had happened was he had
developed a fairly significant pulmonary problem that
got him transferred down to the ICU and he was intubated
within two hours of being there. But that was a
situation where I went in and intuitively knew something
was wrong with him, but had I not paid attention to the
information he probably would have arrested."

" . . . a particular incident I am thinking of was a
young lady in her mid-thirties who was up walking around
and was being prepped for a barium enema for the next
day. The next day I came on she could not get settled,
she was restless, her lungs were clear, her breathing
was okay and we had to make multiple calls to get a
physician down there and she was just restless, up to
the bathroom, not feeling good, nauseated, back and
forth and bam, she coded. And she died. We could not
figure out why, even the doctors on autopsy couldn't
pinpoint exactly why. But it was just something
different from what I had seen before."

"One of our recent transplant patients who while he
was performing the same amount of activity -- his vital
signs were unchanged, his heart rate was essentially
unchanged --there was a change about him one day that
while I couldn't put my finger on it, it made me watch
him all the more closely. And eventually his blood
pressure did go down, his heart rate went up and he did

end up in the intensive care unit that night in heart failure."

The information obtained from the CNSs confirmed that expert nurses use intuition in their practice. There were several aspects of the phenomenon. First, intuition was a mental process involving many complex interactions between information received from the environment and that which is stored in memory. Second, intuition was based on observable and subtle changes that seemed to require an expert eye for detection. Third, intuition was a feeling that precipitates a physical change in the nurse which was triggered by some alteration in patient status. And last, intuition was based on many years of experience with similar situations, providing the expert with cues for immediate detection.

Factor Two: Mentors and Mentoring

All of the CNSs reported experiences with mentors at various points in their careers. For the most part, the people they described were either colleagues or supervisors who took a special interest in their clinical or educational advancement. Initially, a few of the CNSs discussed associations they had with nurses they referred to as "preceptors". These were people whom they remembered as assisting them acclimate to new roles or positions. However, upon further discussion, a distinction was realized between a preceptor and a mentor. A preceptor is someone

who generally orients new nurses and assists the nurse in learning the necessary information to function in a new position. It is a short-term relationship that usually terminates at the completion of orientation. A mentor on the other hand assumes a closer and longer relationship, and includes the functions of counseling, advising, and nurturing. It is also a relationship that has a goal of assisting with career decisions.

The CNSs recalled several roles their mentors served as being especially important. The first was related to counseling in career decisions. Some career decisions came early when some were new to nursing and others came later when decisions involved moving into areas of expanded practice. The following are examples from the CNSs' interviews demonstrating the role of their mentors in decision-making and career development:

> "And the whole time I worked there, which was four years, I still went back to her and asked her to help me decide things . . ."

> "There have also been other people, predominately educators . . . who encouraged me in my Master's program and one who guided me into the Master's program away from medical school."

> " . . . they affected my career decisions as when I chose my Master's program. It was their opinion that I valued when I chose it."

> "There have been several people who have taken a personal interest in my career."

" . . . it was my head nurse at the time who . . . sought me out and sat me down and told me that she thought that I was probably the most impressive new graduate that she had ever worked with and that she felt that I needed to investigate the critical care program that was opening up in the hospital that she wanted me to have that kind of an experience because she thought I needed to expand my repertoire of skills . . .   So there is something else that I think was probably fundamentally present at the outset, something that the head nurse in my first year out of school was able to identify that has allowed me to become an expert."

" . . . there was a nurse at that time whom I really admired and I used to work with her, so at that time she was my mentor. And she just got me started and always kind of reinforced that you could do it. Then when I was in Boston, there was a woman who was the Dean of the school where I went for my baccalaureate. And at the time she was my mentor. She was very clear and she was always helping me to see the next step, the next place that I wanted to be.

" . . . she looked at my role as not only an education role where she was interested in what was I doing with the patient population but she really helped me to look further than that and we would meet on a weekly basis and sit and talk about a variety of things from marketing aspects of the program, staffing issues, and I think helped me to broaden my position more than anyone else I've had any experience with."

Another aspect that the mentors played in the lives of the CNSs, and that emerged during the interviews, was that of a role model. This was important if the CNS was to emulate advanced practice. Many CNSs stated a desire to function like others they observed and especially like their mentors. They idolized behavior they thought was exemplary and knowledge they thought essential. Several excerpts will illustrate this point:

"I think also my program director in my Master's program was somebody that was very supportive the entire time and encouraged me to apply to the program and encouraged me to come into the program and just gave me a lot of encouragement and was a role model, somebody I would want to be like"

"I think more than anything else they were the role models that I wanted to be like."

"I respected her in her leadership and the way she communicated with people and the way she brought about change. I remember picking up those particular traits in her and thinking wherever I go from here, I want to be able to do those kind of things and get along with people the way she gets along with people. And make changes the way she made changes because she was very much oriented to her staff. And she really encouraged me to go on and continue on to what I was doing."

Several CNSs specifically recalled their mentors supporting and encouraging them to pursue additional education. This advanced education placed them in graduate programs preparing them for expanded positions and grooming them for their current responsibilities. The following quotations exemplified the experiences and feelings the CNSs had about their mentors:

"A nurse educator who always supported me when I was talking about going to school when everybody else thought I was nuts for going back again."

"Then when I was in critical care and the reason I went into graduate school was because another head nurse had sat me down and said 'now you must go back to school and get your Master's degree because you can't do this like you are forever because you're going to become bored with it. You've already done the things that you can do right here and you need to go out and get more education'."

"I really think that she got me through graduate
school, so the one person who comes to mind who did take
an interest in me and who I feel really helped me to get
through . . . but without her support, sometimes I think
I would have come through it, but not as easily, not
with the same ease of mind. I think that . . . was
definitely influential in offering support and
encouragement in terms of writing a thesis and getting
through that process and nearly quitting countless times
and just going back again and again and again and
deriving a great deal of support and encouragement from
her."

Some final incentives that mentors offered the CNSs
included motivating them to continue to grow, expecting
quality from their performance, and challenging them beyond
their usual capabilities. The following comments
demonstrated these points:

"But just her example of what she was doing just
kind of motivated me to do that, to go on, and to want
to do that role."

"I think I was guided along the way by certain
people that I looked up to and they helped me look
towards the future versus looking towards the end of the
day."

"Another individual was someone who was a colleague
and also my supervisor who consistently demanded
excellence out of my performance and would not accept
anything less that that."

" . . . and the other person who was particularly
influential is the woman who I described earlier who was
my office mate, . . . and she's somebody who I have met
who is brighter than me. She is just smarter than I am
and she challenged me, and when we talk continues to
challenge me to think beyond my usual day to day scope."

These examples suggested that mentors played a
significant role in the career development of the CNSs and

was an important factor in career advancement. This was

demonstrated well through the following examples:

> " . . . she kind of took you under her wing and
> really remained the mentor to you. That was just her
> nature and she was very excellent in her practice. So
> she was a great role model. Still to this day I think
> of her as someone who kept me in nursing . . . And led
> me to the type of patients, led me to continue to be
> interested in the type of patients that I ended up being
> a specialist in."

> "I was already a clinical specialist before I can
> really say there was any one person who took an interest
> in my career but that person opened doors. If I take my
> career as being developed in a maze that person
> basically kept some doors closed so I didn't take the
> wrong turns at the wrong times, and selectively opened
> doors when I was ready to take those steps. Sort of ran
> interference at different times. I think that
> relationship has probably done more for me, not only in
> my current position, but in my development as a
> professional that any other relationship . . . I think
> that they were probably very instrumental in my career
> being successful as far as the clinical specialist is
> concerned. I think the first person to really . . . I'm
> an optimist anyway and she would help to keep the glass
> half full rather than half empty. I think also in very
> quickly assessing that my expertise, my job
> satisfaction, professional satisfaction came out of the
> clinical area, offered me challenges and ways to develop
> that didn't take me too far into management, education,
> research, public relations, community involvement sort
> of things, but really allowed me to be challenged and
> grow in areas where I felt very comfortable and wanted
> to stay."

> "I would say that if I had not had contact with the
> one woman who was my first head nurse that I might very
> well have continued on in the first surgical/orthopedic
> unit and become a real [know-it-all] after about a year
> and been confident that I knew it all and maybe not gone
> on to the other areas that I have gone on to. And also
> the fact that I respected her so much and she had
> confidence in me and the second woman, I would say that
> it was because of her that I realized that having a
> Master's degree was not necessarily the end of the line

in terms of education and I had just begun to explore
what nursing was about. I would say that she was the
primary influence in my pursuing doctorate education."

" . . . there was a particular nurse . . . who very
much supported and encouraged me during school and was
there for the extra questions that I had and the extra
help that I needed. I really respected her knowledge
and her clinical skills. I very much wanted to be that
kind of level that she was at that time and she took me
under her wing and kind of guided me . . . she really
made a difference, I think, in my continuing on and
wanting to do more and gave me extra projects to do."

The roles that the mentors assumed included first, that

of a counselor in assisting with career decisions. This

role was especially important to the CNSs because it

directed them toward a position within the nursing

profession that offered them expanded opportunities and

areas for growth. Next was that of role model, which

presented the CNSs with the prospect to emulate behavior,

which was necessary if they were to advance in their

practice. Third was the role of offering support and

encouragement for pursuit of advanced education. The CNSs

saw this role as the one that made a major difference in

their current abilities to practice at an advanced level,

because of the knowledge they gained through graduate

education. Other roles included offering motivating

incentives or inducements for the CNSs to pursue additional

opportunities for growth and development, expecting

excellence in all aspects of behavior, and challenging them

to progress beyond their usual performance level.

Factor Three: Motivation and Education

Motivation

Evaluating the impact of motivation on professional advancement was important because the findings tapped into an incentive strategy that could be useful in both personal and professional goal-setting and performance expectations. All of the CNSs readily discussed motivation. A major finding was that several CNSs described their inspirations as exceptional people they knew throughout their careers who influenced and inspired their development. These people were not necessarily their mentors; they were nurses with whom the CNSs worked and who demonstrated exemplary practice. They admired these nurses and wanted to practice at the same level and have the same abilities and knowledge as they did.

The phenomenon of examining the practice of others and developing a sensitivity to what is good and bad is important during the time that a novice or advanced beginner is developing one's skills. It is a time when role modeling could be especially influential in supporting and encouraging advancement. The influence these people had was related to the CNS's effectiveness as practitioners, their career moves, and their decisions related to advanced

education. The following examples supported this finding:

> " . . . I had contact with a group of physicians and
> nurses at that job who are geriatric experts . . . very
> well known around the country. And just working with
> them, listening to them teach or talk, looking at how
> they take care of patients helped motivate me to excel."

> " . . . there were certain things very early on in
> my career where I saw people who were more expert than
> myself or seemed to be able to handle every situation
> that came along and I really wanted to be like them . .
> And I wanted to be like that. That's where I got the
> motivation."

> "Again it was intervention by other people, it was
> the head nurse I worked with in ICU who convinced me
> that I needed to get back in school and needed to pursue
> my graduate degree . . . she not only motivated me to
> get back into school, she put me into an expanded role
> which was really the first expanded practice role I
> had."

> "I think probably more than anything . . . just
> seeing other people in positions I respected, going to
> conferences and seeing somebody like . . . up there
> talking about neurosurgical nursing and making it so
> easy to understand . . I think that's probably what
> keeps me motivated. To keep going."

One last example supported role models as motivators, but in

a negative manner:

> " . . . there were some really non-functional nurses
> on the ward who decompensated in crises and they were
> kind of like negative role models and I did not want to
> be like them. At the time I just dismissed them but I
> am sure that their panic that I saw was from their lack
> of knowledge and fear of what to do . . . I came to the
> conclusion that I needed to practice more effectively
> and this was very important to me."

Another factor that surfaced as a motivator was the

desire to practice effectively and gain credibility and

satisfaction from effective clinical experiences. Since

nursing is a helping profession, most people derive enjoyment and a sense of fulfillment from seeing patients improve their health status as a direct result of their knowledge and interventions. That sensation is one that, once experienced, provides strong incentives for the nurse. This was the case with several CNSs as seen through the following excerpts:

> "The two main things that I would have to say that facilitated the advancement was curiosity to know more, again for credibility as a clinical resource, and a desire to master the environment . . . And that was one thing, to be as good as I could at something. To be looked upon as a resource . . . That was kind of my motivator that swept me along to keep going and to be even better."

> "I wanted to be a very efficient and effective practitioner. I wanted to have really honed bedside skills because I felt that the value of nursing is the bedside skills . . . The patient population and learning about all those individual types of patients . . . did motivate me to try to figure how the whole system fits together."

> "The other thing that definitely happened was building relationships with patients and families, successful and unsuccessful, and in most cases feeling really good about the relationships and wanting to be able to provide more for them than I could when I first started. So again, that really was motivating, wanting to do a good job."

Several CNSs identified their selection as preceptors for new nurses as a motivator. Because they were placed in this teaching role, they felt a strong need to provide the correct information and practice excellent nursing. Since serving as a preceptor is a responsibility awarded advanced

practitioners and was one seen by the CNSs as a motivator, the role should be cultivated and examined as potentially influencing the development of advanced practice. The following examples from the CNSs established the impact of the preceptor role:

> "As I advanced as a preceptor I wanted to see people that enjoyed nursing the same way I did and wanted to be the caliber of nurse that I felt I was and deliver the caliber of nursing care. And I think that motivated me at the three-year point when I started to become a preceptor."

> "I realized that I needed to be a much better practitioner than I was then to help precept others."

The last area for consideration relates to negative motivations. These were manifested by shame or fear of failure, being overwhelmed, and feeling out of control. Several CNSs experienced these reactions when they perceived they were not practicing at an acceptable level. The following excerpts from three CNSs demonstrated this well:

> "I think it's the shame of failure and always the stigma and I didn't want that to happen again."

> "I think because I was so overwhelmed, I just said to myself I would never get into that predicament again. I don't ever want to feel so overwhelmed that I have absolutely no idea what all the technology is and what's going on with no background."

> "I didn't like feeling uncomfortable that first year . . . I hated feeling so frightened and so it motivated me to really concentrate and pay attention and try to learn the skills so I wouldn't feel so out of control."

The effect of motivation and motivating factors was

discussed readily by all of the CNSs, and in many cases was considered an important contributing factor to their advancement. This was depicted through the following example:

> "And every new experience, whether it is a patient experience, a committee experience, an experience with a colleague, to me it's as rewarding as anything else that I do. Those are very valuable and important things to me in my practice, and they always help me to strive farther in my career."

These examples confirm that motivation was a significant factor that influenced the CNSs to excel. Several areas were specifically mentioned as strong motivators. These include observing people whom they saw demonstrating exemplary practice and whom they wanted to emulate; interacting and assisting patients and their families, thus achieving satisfaction and excellence as a practitioner; acting as a preceptor and teaching new nurses; and encountering personal feelings and sensations related to fear of failure, reacting to and feeling overwhelmed and out of control. The motivators discussed by the CNSs were both external to them, i.e., influential people whom they knew throughout their careers, and internal, i.e., individual personality characteristics that initiated behavior and actions.

Education

The CNSs discussed with enthusiasm their experiences

with and feelings about education. Their educational pursuits included both formal academic degrees and continuing education experiences. They all felt that education -- specifically, their graduate degrees -- assisted their careers.

Since all of the CNSs have at least a Master's degree, it might seem obvious that they would see education as important for career advancement. The CNSs who did not obtain a baccalaureate as their basic preparation in nursing soon recognized the need and pursued the degree. Two CNSs discussed their passion for school and desire for more education following their diploma education:

> "I've always been a person that loved school . . . I always wanted to go back to school. I just loved school. And within a couple of years, I decided I wanted to go back to get my Bachelor's degree."

> " . . . I knew all along that the diploma would not be as far as I went. So I think I had already geared myself so that by the time I graduated, I was already starting to take classes again."

A major incentive with regard to the significance of education in promoting advancement is in the area of patient care. The CNSs generally felt their advanced degrees armed them more effectively for the intricacies of complicated patient situations. Some admitted feeling deficient and ineffective without additional education. The following examples demonstrated the importance of education in

preparing the CNSs for advanced practice:

> "Through courses in graduate school in gerontology I realized that you cannot take care of an elderly patient effectively without looking at the total situation . . . Again, through experience and grad school I learned how to really do a complete assessment of a patient."

> "I knew what I needed to do to practice the way I wanted to practice and it was in getting an advanced degree."

> " . . . I just felt the structure that a Master's degree would bring would help me better handle the problems."

> " . . . it really helped to have the theoretical background to support what you're seeing and what you're doing . . . with the knowledge I gained from my Master's program, I remembered one day the light just going on . . . All of a sudden everything just clicked together . . in particular with trauma care."

> "And in terms of my interest in practicing more effectively, I could see from that prior experience that I did not have everything that I needed to comfortably support myself or arm myself to be able to clearly take care of patients the way I wanted to if I had not had education to lead me in that direction, from a basic level all the way up to the Master's program."

Advanced Education and Benner's Framework

The majority of the CNSs pursued their graduate degrees between years three and five of their nursing careers. In Benner's framework, this would be at the competent to proficient stages of development. One CNS received her graduate degree following two years of experience, two at three years, two at four years, three at five years, one at six years, and one at eight years of experience. This might suggest that developmentally a nurse is ready for advanced

education and further challenges when one's clinical practice is successful and one's skills have progressed beyond the immediate needs of one's patients. It might also indicate that it is at the late competent or early proficient stage that many nurses begin to feel restless and are investigating expanded role changes.

Advanced Education and the CNS Role

Education has historically been marketed as a requirement to obtain certain jobs and to advance in selected careers. A Master's degree is required for clinical nurse specialist positions and certain graduate programs in nursing devote part of their curricula to CNS tracks. The CNSs confirmed that their educational endeavors were an opportunity to pursue more career options and to facilitate their professional achievement. Following are passages related to this role of education:

"If you have an advanced degree you can go on to teach, you can go on to do administration . . . It was just something to obtain to advance your practice, give you more options, to make you more marketable and be able to find a niche if you haven't quite found it yet."

"At that time I went back to graduate school, knowing that it would provide me with yet more knowledge to grow on . . . I realized that my practice would not be mediocre, but it wouldn't be able to grow unless I completed the picture with the cognitive knowledge."

" . . . I could see from that prior experience that I did not have everything that I needed to comfortably support myself or arm myself to be able to clearly take care of patients the way I wanted to. And to not only

take care of patients but to progress in my career . . .
And that desire took me further in terms of my education
almost immediately . . . I really did feel like . . .
that if I didn't have my Master's degree that I would
not be able to pursue the higher levels of nursing and
the different things in nursing that I could perceive
that I would be involved in. I felt like it was a must
. . . There's a lot of growth when you enter an
education program because you work with peers and
colleagues who have so many other experiences . . .
other students who were in the program were tremendously
important to my growth during those years that I was
going back to get my Master's degree."

Continuing Education

Thus far the CNS interviews have focused on formal

education and the benefits thereof. Another component of

education discussed by the CNSs is that of continuing

education and its role in promoting advancement and

expanding knowledge. All of the CNSs described various

seminars and conferences they attended throughout their

careers that served to expand their skills in particular

areas and meet needs or deficiencies in their knowledge.

The following samples illustrated this point:

"In-service assessment classes is one area I know
helped me advance considerably . . . that skill of
anticipating patient problems or complications was
enhanced by seeking out information on my own as well as
attending in-service classes . . . I think that my
experience and my interest in learning gave me the
desire to acquire the cognitive knowledge that I went
out and sought through resources or my own self learning
or in-services, whatever was available to me."

"I was looking for the other continuing education
programs and in-services and staff development things
that were done in the hospital . . . I have sought out
different classes independently . . . related to a skill

. . . so I sought out some individual QA classes that
were taught at different hospitals in different places
within the area and actually used that in terms of
continuing education to learn more about that aspect . .
I'm always looking at different educational offerings .
. . Another example is that I worked with a lot of renal
patients on one of the nursing units and I don't feel
very comfortable about a lot of renal information . . .
So there was the educational conference that was here at
the hospital and I attended that, so I'm always looking
at different opportunities to continue to grow and
develop in areas that I don't feel that I have as great
a knowledge base . . . So I think taking classes,
seminars, and just pushing myself in different areas and
making myself seek out education in different areas that
I'm not as knowledgeable about . . . really helps me . .
I went to a lot of different continuing education
programs related to diabetes."

Education was a critical factor in the career

development of the CNSs and was influential in their

advancement. They all spoke eagerly of their experiences in

graduate school and how it made an impression on their

fervor to learn and their desire to excel. Their

participation in continuing education activities also added

to their knowledge base in selected areas. In addition, the

CNSs acknowledged that the information they gained through

educational programs was effective in patient situations and

contributed to their clinical expertise. The following

example clearly validated the importance that education

played in the professional lives of the CNSs:

"The theoretical piece I got pretty strongly at the
Master's level in terms of frameworks for considering
the family, frameworks for considering development,
frameworks for working towards attainment, and those
kinds of things . . . so I applied that extensively

during the clinical and the Master's program and from then on I felt real comfortable with that . . . Then after that, I have to say academics was the place where I kept finding support for continuing [on in nursing]."

The CNS's discussion of the influence of education on their advancement encompassed several areas. First was related to patient care and the assistance they felt that education offered them in further understanding multisystem pathology, selecting appropriate interventions, and assuring effective patient outcomes. The next area included the contribution that education had on the development of their role as a clinical expert and in being viewed as credible by colleagues. And lastly, the CNSs felt that education opened doors for further career alternatives and facilitated professional achievement, most specifically their advanced degree facilitated the attainment of their current position.

Factor Four: Experience

A detailed description of the CNSs' practice at each stage of Benner's framework was discussed in part one of this chapter. That discussion demonstrated that the experience of the CNSs was varied and advanced in a systematic manner through the Benner stages. This section will explore the specific role of experience in promoting advancement toward expertise.

The average experience of the population of CNSs prior to assuming their current position is 8.75 years. This

suggests a strong experiential foundation which supported
the development of expert knowledge and skills. To be sure
it is not experience alone that supports achievement, but
what one learns during that experience that is significant.

All of the CNSs were able to articulate the importance
and value that experience had on promoting their growth. In
addition, the CNSs described knowledge and skills that were
learned and reinforced with specific patient experiences,
which added to their knowledge base. There are several
areas of the CNS's nursing practice that were improved
through experience. The first area is related to the use
of clinical skills. These included performing a physical
assessment, setting priorities, and anticipating patient
problems and complications. The following examples indicate
the impact that experience had on developing these skills:

> "Through experience and grad school I learned how to
> really do a complete assessment of a patient . . . it
> helps you to anticipate problems because after you see a
> certain type of patient over and over and you see them
> through the hospitalization and you know what happens to
> a certain type of patient . . . then you are quite
> experienced and can anticipate the problems. But you
> have to know how to completely assess them."

> "Clinical experience has helped [me] to learn the
> priorities by trial and error. If I did it one way for
> one patient and it didn't work or it did work, or if I
> didn't do something, then I saw the impact it had on the
> patient. I learned from that."

> "So I take general information that I possess,
> relate it to the clinical situation and I then
> individualize that information to this particular

patient based on what I know about their physiological and psychological history and my reactions to them. Based on those two pieces of information, I then dig back into my practice base and look for and anticipate problems."

"How do I anticipate patient problems or complications? I really think that most of it is just on my experience. I have to say that some of this is based on the pathophysiology background that I have but the majority is based on trauma patients or something I've seen before . . . Setting priorities must have just come from experience. It's just from doing them over and over again and seeing how it works out."

A nurse is judged in many ways, but one's abilities to manage the complex technology associated with patient care is a primary criterion, and certainly one associated with advanced practice. The expert nurse can not only orchestrate all of the technology in the acute care arena, but is able to troubleshoot the equipment, teach the operation to others, relate the parameters to the pathophysiological processes, and evaluate how these technical aspects are part of holistic care. In addition the expert understands the advantages of the technology as part of the treatment regimen and can explain its purpose and rationale to patients and families.

There are several ways to learn the procedural aspects of nursing interventions and the operation of equipment. One way is to read the procedure manual, another is by simulation in a laboratory, but the most effective way is to use the technology repetitively in an actual clinical

setting with patients. The importance of experience in this regard is indicated through the following interview passages:

> "Having worked in the ICU, I think that [helped] my fear of approaching machinery and technology and took care of being intimidated by the machinery."

> " . . . just repeated years of practice developed my clinical skills."

> "But I really feel that, again, it's experience that develops clinical skills."

> "So I think the repetition of the skills, having done them over and over again was certainly the difference."

> "I think the five year break [of not being in school and working full-time - RJM] was nice because it helped me develop a lot of clinical skills, and I was much more proficient and comfortable as an independent practitioner. ."

Another area of practice that was influenced by experience was the CNSs' ability to see the patient as a holistic being and to apply cognitive information to patient care. These skills require the expert nurse to examine all of the patient's needs, the impact they have on his current state of illness, and to be able to relate medical and nursing information to disease processes.

A major way that a nurse learns these sophisticated skills is by interacting with and intervening for many different patients over time. This process can be learned to a limited extent from textbooks and classroom

experiences, but the theoretical information used in hypothetical situations eventually must be put to an empirical test for learning to occur and information to be stored in memory.

These skills identified by the CNSs are ones which they indicated require a great deal of experience with appropriate validation in a clinical setting. A less proficient nurse is unable to achieve these results without much assistance and direction. The following examples suggest this role of experience:

> "I think I learned the philosophy back in nursing school and then learned to look at the patient's physiologic state as well as at the patient as a holistic being with practice."

> "But I find that what I have learned from a cognitive perspective, [when] I get into the experiential aspect and I apply it I learn and I wind up adding to that learning experience and generate . . . an expanded group of things that I want to know about."

> " . . . it was doing things over and over and over again, and as you did them over and over again, then I was able to look at more of the whole picture. [I was] a little less task oriented, a little more able to look at the emotional side of [patient care]."

Experience thus far has been shown to play a major role in the development of the CNSs' clinical skills. Another area related to the role of experience in refining the characteristics associated with professional conduct. This includes qualities demonstrating confidence and credibility, leadership, and the skills used for effective

problem-solving and decision-making.

These skills are not only highly visible by those who interact with the expert, but are attributes of a leader and are fundamental for expert performance. Several citations from CNSs demonstrated their views on the role of experience in professional development:

> " . . . I don't have a lot of respect for people who don't know what they are doing clinically and who come in saying they can cure all when they don't know exactly what they are doing. So I wanted to have the substance of the experience and the education behind me so that I could be a credible leader."

> " . . . Being in practice, and over the years, just taking care of lots of different patients in lots of different situations [learned the necessary information about current clinical specialty - RJM] . . . there is no way in the world I could have been ready to practice at the level that I'm practicing at without the four or five or six years of experience that I had while I was working on the degree."

> "But it's the prior experiences and the educational level that have put me at a point that I know I've had a similar situation before and I can handle it without any problem. And then I think too, just the progression through the years, I think that the experiences that I've had and the educational level itself have just lent itself to that level of confidence in myself and then the recognition from my peers and from my superiors too, that, yes, indeed you are an independent practitioner and you do have an expertise in a particular area."

Experience in the clinical and professional advancement of the CNSs was a strong factor. It was mentioned consistently in all the interviews, and discussion of various aspects of its impact was interspersed throughout many responses. Several final examples follow:

"Experience is much more influential to me in advancing me clinically."

"I'd have to say the physical experience of doing things and seeing symptoms within a patient was the most helpful [in advancing me]."

think that the role of experience was very important to me . . . and I put more value in that probably than cognitive knowledge development."

"I think my experience has been absolutely the best thing I could have."

The CNS's discussion of experience and its influence on their advancement covered several areas. First was the role of experience in developing skills in physical examination, setting priorities, and anticipating patient complications. Second was in the area of technology associated with patient care. Third was the skill of viewing the patient in a holistic manner by considering his physical needs in a psychosocial context and relating medical and nursing information to the patient's clinical manifestations. Lastly, experience influenced the professional development of the CNSs by enhancing their confidence and credibility, improving their leadership qualities, strengthening their role as a CNS, and cultivating their mental skills in problem-solving and decision-making.

Factor Five: Institutional Incentives

Incentive programs, in theory, should provide employees with an external motivator to excel. Depending on the

purpose and extent of the program, it can encourage additional training, provide an opportunity to advance monetarily and/or in position, and be a medium for recognition. The major incentive program within the nursing profession is the clinical ladder. This program offers the nurse the opportunity to advance based on the attainment of pre-established expectations. In most cases, progression up a clinical ladder includes a promotion involving a salary increase and change in title.

Overall the CNSs had very mixed reactions and experiences with clinical ladder programs. Two had very positive experiences, five had never been exposed to them, and the rest had difficulty participating in clinical ladder programs for several reasons. One, expressed by nurse one, was because of termination of employment because of relocation factors before she had an opportunity to complete the requirements:

> "We had a clinical ladder at . . . but I didn't advance on [it] . . . because every time I have [in the past] I [left] the institution."

A CNS who did participate in a clinical ladder program stated that it did not completely meet her needs. It was a very ill-defined program which was structured around leadership skills rather than clinical competence and it did not have an impact on her advancement. The motivator for

her was to be viewed as a resource for the unit:

> " . . . I would say the one that I was in didn't
> have a major impact on my desire to advance other than
> to where I was, that is, the GS10 level, which was
> charge nurse."

Another CNS had a very negative experience with a clinical ladder program. Not only did it not meet her needs, but it was structured so that participation was difficult and there was potential for adverse effects for those who were seeking a reward structure based on clinical skills:

> " . . . there was a clinical ladder system that I
> didn't like and didn't want to be any part of. Because
> it was a management type advancement track and I simply
> wasn't interested in [that] . . . And what I wanted, I
> couldn't get at that level . . . The clinical ladder
> didn't do it for me. It didn't help me at all. As a
> matter of fact, it made me very angry . . . That was one
> of the reasons that I left my first job, because it was
> sort of a "do or die" thing . . . it took me away from
> clinical practice."

The two CNSs who had positive experiences with clinical ladder programs described these programs as having a clinical focus and offering structure and direction. The clinical ladder, for these CNSs, offered an incentive for advancement. Both CNSs, however, acknowledged that if there had been no clinical ladder they probably would have excelled anyway:

> "Later on there was the Clinician IV program which I
> achieved as well and that also I think acknowledged in a
> formal way recognized expertise in practice, both
> monetarily and . . . esteem-wise, image."

"It was a goal that I had set for myself out of
nursing school. I wanted to be a Clinical 4 in three
years time . . there were courses you had to take, tests
you had to pass, and we had to have an 85% on an A & P
exam and all sorts of things, so it was very structured
. . . it was a real good motivator . . . it offered me
structure and a goal."

Other incentive programs beside the clinical ladder that
were mentioned by the CNSs included the option to decrease
hours and retain full benefits, flexible schedules, tuition
reimbursement, and merit-based evaluations.

Institutional incentives, specifically, clinical ladder
programs were a very weak motivator for the population of
CNSs. Few of them were exposed to a clinical ladder, and of
those who were, only two had positive experiences. Most of
the CNSs stated that they did not require external
incentives to advance, but instead were motivated from
"within". One CNS did find the clinical ladder program that
she was exposed to important for her career development.
The following example demonstrates this finding:

"I think [the clinical ladder] validated what I had
done . . it did definitely validate what I had done and
gave me a sense of success that was recognized by other
people."

The responses to clinical ladder programs were mostly
negative in nature. The experiences of the CNSs included
difficulty accessing the clinical ladder program, if it was
available at all, and the focus being non-clinical. Those
CNSs who had a positive experience described the programs as

focusing on clinical competence and offering structure and direction, which more easily complemented their professional goals.

ADDITIONAL FINDINGS

The previous section presented the findings from the CNS interviews that were specifically related to the influence of the five factors (information-processing, problem solving, intuition; mentors and mentoring; motivation and education; experience; institutional incentives) on their advancement. For the most part, when provided with the opportunity to elaborate on their career development, the CNSs identified one additional factor as influential in achieving their present level of excellence. This additional unsolicited factor will be presented in this section.

Intrinsic Motivation

Another factor that emerged during the interviews was the apparent common personality characteristic associated with internally driven motivations for success. This factor was mentioned by seven of the CNSs and was associated with an incentive that originated from within rather than externally. The CNSs described themselves as having the type of personality that is constantly seeking new experiences, frequently demanding perfection from their

performance, and having a continuous desire to advance their mind and position. These goals were an expectation they set for themselves. The following excerpts from the interviews supported this finding:

> "A lot of [incentives] really came from within; just knowing the direction that I wanted to go, and pursuing it on my own . . . I just feel like there's a certain amount that has to be from within because otherwise there would have been no way -- I wouldn't have been motivated to advance at all. So I believe that it's something from within."

> "My own motivation was important . . . I think [my advancement came from] my personal desire for knowledge. . . . I think I have some personal characteristics of perfectionism that always makes me strive to know as much as I can. If there was a knowledge deficit I tried to fix it, or if I had a skill deficit I wanted to do better and to learn more."

> "The other thing is I just had a curiosity."

> "It was a goal that I had set for myself out of nursing school. I wanted to be a Clinical 4 in three years time."

> "Anything that I've done I've done because it's been internally motivated."

> "I think the incentives came from within me. Because I wanted to do better so my incentives have always been probably more internal than they have been external . . . I keep wanting to be that next higher person that can do it -- to be able to be a good public speaker, to be able to get points across, to be able to do community work . . . "

> "I think my never-ending need for increased knowledge probably was part of [what facilitated my advancement] . . . I think part of it could be peer pressure and kind of the competitive edge that I have in my personality anyway. To start with, I was always trying to move myself forward and never being really satisfied with the status quo and if I get too

comfortable in a position, I almost get bored with it. So there's always the need at that point to make myself, push myself a little bit farther to grasp something I really don't know too much about."

Although it was difficult to quantify, there seemed to be an urgency or a sense of priority assigned to this factor during the interviews. This could have been because it might have been the first time the CNSs examined their motivations to the extent demanded during the interviews, or they might not have considered the role their personality type had played on their professional advancement. This finding could also have been related to the adult learner's internal motivation to seek information in order to achieve a goal and attain expert status. Further discussion on the relationship between personality types and expertise will be presented in Chapter Five.

FACTOR SIGNIFICANCE

As indicated in Chapter Three, data from the interview transcripts were viewed from two perspectives -- *frequency* and *salience*. Frequency was determined by the number of CNSs who discussed the factor. A factor was considered to occur frequently if at least half the CNSs made mention of it. Since the original five factors were used to organize the interview guideline, all of these factors were mentioned to some degree by the interviewees. The principal use of

frequency, therefore, was to determine the impact of unsolicited factors uncovered during the course of the interviews.

Salience was measured in two ways, first by the total number of lines devoted to the discussion of a factor, and second, by a percentage of the CNSs who used words indicating intensity or importance attributed to a factor. The latter method was based on mention of the factor with accompanying descriptive adjectives such as "very important", "essential", "critical", or the phrasing of a statement in such a way as to intimate its importance. Since this approach deals with total line counts for each factor summed across all CNSs, the possibility of a CNS being exceptionally verbose should not affect the results, assuming that the CNS is equally verbose in all areas. Salience was also used to disaggregate two of the more inclusive factors, factor one (information-procession, problem-solving, intuition) and factor three (motivation and education), into component parts and identify the relative importance of certain elements.

Together these methods indicated whether a factor had a vital meaning to the CNSs. A factor was identified as influential on achieving expertise if either frequency or salience was present. Table 2 and Figures 1 and 2 summarize

data on frequency and salience of the factors discussed earlier in this chapter. Table 3 presents salience (number of transcript lines) in more detail by disaggregating the total transcript lines for each factor across all ten cases.

Table 2

Factor Frequency and Salience

	FREQUENCY (%)	SALIENCE (%)
Information-Processing Problem-Solving	100	0
Intuition	100	10
Mentors	100	40
Motivation	100	20
Education	100	60
Experience	100	80
Inst. Incentives	100	10
Intrinsic Motivation	70	0

The use of median number of lines (as proposed in Chapter Three) to judge salience was determined to be an inappropriate method to employ in this research. By definition fifty percent of the interviewees always fell above the median and fifty percent below the median, which did not allow for meaningful differentiation. Because of this, a sum of the total number of lines devoted to a discussion of the factor by all the interviewees was used to evaluate salience rather than the median.

Table   3

Factor   Salience

Line   Counts   by   Case

INTERVIEWEE

	1	2	3	4	5	6	7	8	9	10	TOTAL
Info-Proc/Prob-Solv	96	134	208	124	317	136	246	240	179	200	1880
Intuition	16	15	13	12	28	25	15	20	19	12	175
Mentors	73	52	21	20	43	95	41	51	22	22	440
Motivation	25	20	53	52	9	17	23	43	92	79	413
Education	50	57	37	56	74	17	63	41	37	170	602
Experience	65	72	49	44	106	58	25	76	88	82	665
Inst. Incentives	15	18	18	24	16	0	31	6	22	14	164
Intrinsic Motivation	0	9	2	4	0	6	0	18	10	16	65

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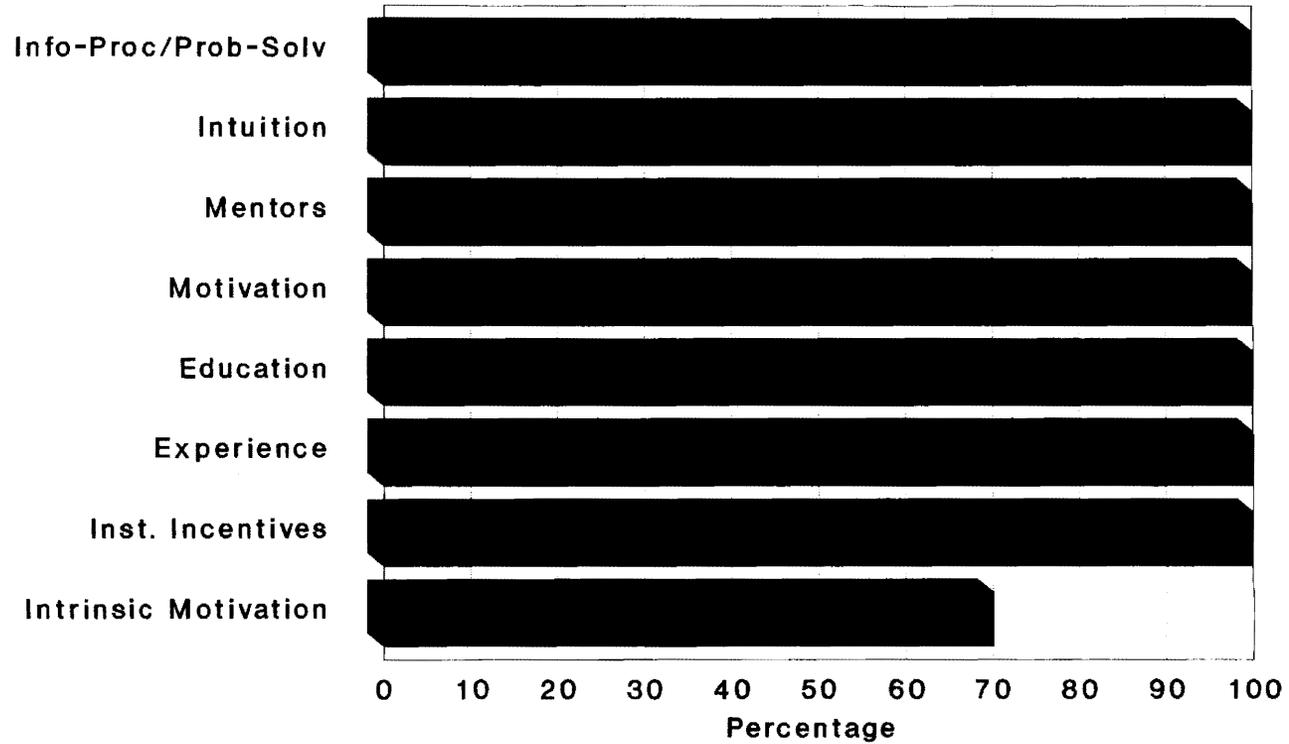
Figure 1. Factor Frequency
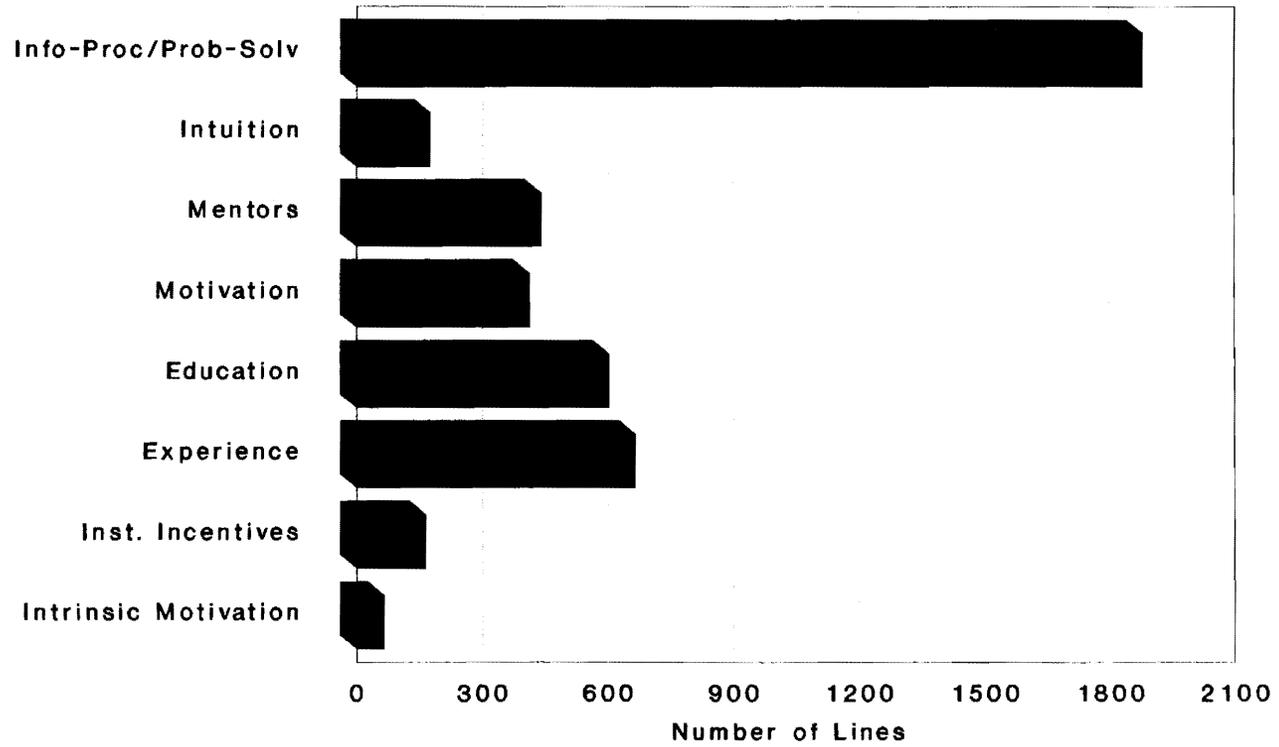
Figure 2. Factor Salience

<u>Frequency</u>

As mentioned earlier, the five fundamental factors around which Chapter Two was developed were used to structure the interview guideline. Because of this, all five factors automatically met the frequency criterion of mention by at least half the interviewees (see Table 2 and Figure 1). The value of using frequency as a measure of importance of a factor therefore lied in evaluating the unsolicited factor discussed by the CNSs.

Only one unsolicited factor was suggested by three or more CNSs: **Intrinsic motivation** was referred to by seven CNSs or seventy percent of the population. Based on this finding, the role of intrinsic motivation must be considered an important factor. Possible explanations for this will be discussed more extensively in the following chapter.

<u>Salience</u>

The total number of transcript lines devoted to all the factors, unsolicited and not, was 4,404 out of an overall total of 13,448. This means that about a third of the interviews were comprised of statements relevant to the five solicited factors and their components and the one unsolicited factor. The remaining lines concerned general background, personal histories, interviewer's questions and prompts, ultimately unproductive explorations of seemingly

promising topics, and the asides, transitions and irrelevant remarks which are part of the progress of any interview.

The findings with respect to salience based on line counts showed that **information-processing** and **problem-solving** had the greatest number of lines (1,880 -- see Table 2 and Figure 2), and far outnumber the other factors in line count. A significant portion of this line count consisted of the CNSs' descriptions of their practice through Benner's stages, specifically how they achieved results, the approach they took when making decisions, and the skills they employed to assess patients. The large number of transcript lines can be primarily attributed to the long historical discussion by the CNSs of their professional careers. Despite the high number of lines devoted to the factor, salience as measured by descriptors indicating intensity was essentially zero. This seemingly inconsistent finding will be discussed further in the concluding chapter.

The factor with the second highest line count was **experience**. This high line count (665) combined with a high percentage (80 percent) of the CNSs indicating importance through the use of descriptive adjectives made this factor very significant and influential on expert achievement.

Education ranked third and very close to experience with a high line count (606) and a high percentage (60 percent)

of examples indicating importance. This factor encompassed both formal academic preparation and participation in continuing education programs. These findings suggested that education was also very important and a powerful influence on achieving expertise.

Factor three -- **mentors** and **mentoring,** and the second part of factor four -- **motivation** ranked very close in total line count. Mentors and mentoring had a slightly higher count (440) than motivation (413). Because mentors and mentoring also had a respectable percentage (40 percent) of examples establishing importance, it also was considered to be a significant factor and an important one in attaining expert status.

The factors of **intuition, institutional incentives, and intrinsic motivation** ranked very low in total line counts and in percentage of examples describing importance. Based on frequency and salience criteria, these factors may be essentially dismissed as not relevant as a general influence on the achievement of expertise, although they may be important for given individuals. An exception to this general statement is the factor of **intrinsic motivation** which, because of its high frequency finding (70 percent), will be explored further in Chapter Five.

SUMMARY

This chapter presented the findings from the interviews with the CNSs. Part one discussed the progression of the CNSs through each of Benner's stages and verified that they did advance from novice through each stage to expert. Part two analyzed the responses of the CNSs to the interview questions that specifically addressed the factors that were hypothesized as influencing expert progression. One additional factor emerged during the interviews that was not identified *a priori*. Appendices G and H present profiles of the CNSs, summarizing the influence of all factors combined on each CNSs' achievement of expertise as well as demonstrating their progression through Benner's stages.

Factor One: Information-Processing, Problem-Solving, and Intuition

Factor one encompasses the cognitive skills used to synthesize information so that data are received, stored, and processed effectively. These cognitive abilities also include the skill of interpretation and the use of intuition.

One important feature regarding problem-solving is that as practice advances there is less reliance on a step-by-step approach. Expert nurses, for the most part, do not consciously utilize a formal nursing process in patient care. Their thought processes are quick, automatic, and

without conscious thought. Less advanced nurses, (novice, advanced beginner, and competent), do however rely on the nursing process during problem-solving activities. Judging by line count alone, information-processing and problem-solving are the most salient of all in achieving expertise.

Another important finding is the use of intuition. The literature suggests that intuition is reliable in predicting patient complications; this research verifies that intuition is used by some expert practitioners and has accurate results. However, judging by the low salience (as measured by line count and descriptive adjectives), intuition is not a major factor in the development of expertise.

Factor Two: Mentors and Mentoring

Mentoring relationships played an important role in the career development of the CNSs, although less than other factors. The CNSs for the most part could readily identify and discuss people who influenced their lives. A few CNSs did not realize they had been involved in a mentoring relationship until their discussion revealed some important outcomes that resulted from these affiliations.

A major consequence of the mentoring relationship was the consultation and advice associated with the pursuit of advanced education. This counseling seemed to be the central determining element which directed the CNSs to their

current positions and inspired them toward advanced practice.

While mentors and mentoring was important in achieving expert status, based on measures of salience it was less so than information-processing and problem-solving, education, and experience.

Factor Three: Motivation and Education

Motivation

Motivation had a moderate influence on expertise, about equal to that of mentors and mentoring with respect to salience. Motivation was both external and internal in nature. External motivators included colleagues with whom the CNSs worked and patients whom they helped at various points in their careers. These external motivators generated a desire to learn more and pursue excellence in practice.

Education

Education played a significant role in the advancement of the CNSs, about on a par with that of experience. This included both formal academic pursuits and continuing education activities. For the most part, however, the attainment of a graduate degree played the largest part in encouraging excellence for the CNSs. They identified graduate education as the experience that opened doors for

them and stimulated their quest for further knowledge.

Of the two components of this factor, education was considerably more important than motivation, if salience and frequency are proper criteria for judgment.

Factor Four: Experience

Experience was a major influencing factor on the CNS's progression, second only to the cognitive factor. All CNSs readily acknowledged that they would not have been able to achieve their current level of practice without their years of experience. Their varied exposures to multiple patient scenarios provided them with the necessary skills for advanced practice.

This factor was a highly salient influence on advancement judging by the large number of transcript lines and the high percentage of CNSs who used powerful descriptive adjectives to describe their feelings regarding experience.

Factor Five: Institutional Incentives

The major institutional incentive discussed by the CNSs was the clinical ladder. For the most part, clinical ladder programs were weak motivators for the CNSs. Several reasons were provided for dissatisfaction with clinical ladder programs, the major ones being difficult access and their objectives being contrary to the CNS's professional goals.

Based on the measures of salience, this factor was a very weak influence on expert advancement, ranking a distant last among all the solicited factors.

Factor Six: Intrinsic Motivation

An unsolicited factor that emerged during the interviews was related to an internal motivation which offered incentives for accomplishment. The factor was totally unsolicited and was discussed by almost all of the CNSs.

Even though there was a small number of transcript lines devoted to this factor and its salience must therefore be considered low, the large number of CNSs who discussed this factor (seven of ten) suggested it had influencing potential and required further exploration.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

Research Question and Purpose

The question that this dissertation addressed is: What factors are perceived to influence the progression of the individual from novice to expert in the nursing profession. The study explored and evaluated factors that the literature suggested affect the progression toward expertness. In addition, an additional factor, intrinsic motivation, not identified *a priori* emerged from the research.

Approach of the Study

A qualitative case study methodology employing in-depth interviews was utilized to achieve the study's purpose. Interview questions were keyed to each factor suggested as influencing the attainment of expertise. There was also sufficient flexibility and opportunity for the respondents to add additional information on factors not identified *a priori*.

Benner's novice-to-expert framework was used to direct the research. The framework relates nursing practice to level of expertise and to the advancement from novice to expert. The framework offered a theoretical structure, served as a conceptual guide for designing the interview questions, and provided a systematic method of presenting

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the findings from the interviews.

The interviewees were engaged as co-researchers in the study. In addition to their primary role as sources of information, they verified the interview transcripts for accuracy and completeness. By treating the interviewees as co-researchers and informing each of the theoretical framework used in the research, the interviewees/co-researchers were better able to relate their responses to the purpose of the research.

The interviewees were ten nurses who are employed as clinical nurse specialists (CNSs) in a large acute care hospital in Northern Virginia. This group comprised all the clinical nurse specialists at the hospital and therefore constituted a population. Each CNS represented a different area of clinical specialty. This heterogeneity of disciplines offered additional support for the assertion that advancement through Benner's stages is a general phenomenon (at least within nursing) rather than characterizing only a limited segment of the profession.

Principal Findings

Novice-to-Expert Progression

It was clear from the interviews that all of the CNSs progressed through each of Benner's stages during the course of their careers. The years of experience and the

characteristics of each stage described by Benner closely paralleled the findings of this research. A detailed analysis of the transcripts revealed very close similarities between Benner's descriptions of each stage and the depiction of each stage provided by the CNSs.

Influential Factors

The following factors were specifically investigated during the interviews:

- Information-processing, problem-solving, and intuition;

- Mentors and mentoring;

- Motivation and education;

- Experience;

- Institutional incentives.

These factors were taken from the literature which suggested that they have an influence on the advancement toward expertise. In addition to these five, the following factor, not identified *a priori*, emerged from the interviews:

- Intrinsic motivation.

Based on an evaluation of frequency and salience (defined as the number of interviewees who discussed a factor, and the amount of attention -- measured in number of lines -- and presence of phrases indicating the importance of a factor, respectively), the following were identified as influential in achieving expertise and are considered

significant factors:

Factor one: Information-processing and problem-solving;

Factor two: Mentors and mentoring;

Factor three: Motivation and education;

Factor four: Experience;

Factor six: Intrinsic motivation.

The following factors emerged as <u>weak</u> and are not considered influential in achieving expertise:

Factor one: Intuition;

Factor five: Institutional incentives.

CONCLUSIONS

The implications of the findings depend to a great extent on the use to which they are to be put. It is important to note that some factors considered in this study can be controlled or manipulated more easily than others. For example, information-processing, problem-solving and intuition are cognitive skills required for the attainment of expertness; they are either present or absent and may be enhanced to some extent, but are more difficult to control in the same manner as experience or education. Similarly, like the cognitive skills encompassed by the information-processing, problem-solving and intuition factor, intrinsic motivation is a necessary condition for the achievement of expert practice, can perhaps be encouraged, but is a factor

that also is difficult to manipulate. For example,
education can be encouraged and provided (although learning
may not necessarily occur) but it is much more difficult to
present in a tangible manner (such as classes) intellectual
skills, intuition, and problem-solving.

Thus if one is interested in those factors which appear
to offer the most immediate results in terms of improving
practice, one should concentrate on developing or improving
mentoring programs, offering or insisting on advanced
education, and providing more opportunities for experience.
If one's purpose is to identify individuals with the best
promise of achieving expert status, one should ensure that
cognitive skills and intrinsic motivation are present.

The following discussion will present the factors in
turn and speculate on the explanations, causes and
implications of each. Like all studies, the present
research raises further questions, some of which will be
addressed in the section on recommendations.

Factor One: Information-Processing, Problem-Solving, and Intuition

Information-Processing and Problem-Solving

The information-processing and problem-solving factor
far exceeded any other factor in terms of the amount of
attention the CNSs paid to it, as measured by line count.
The high salience of this factor can be at least partially

explained by the fact that the activities that nurses are involved in on a day-to-day basis are so varied and complex that when the CNSs were requested to discuss their practice, a very large part of the interview consisted of descriptions of the cognitive processing associated with patient care. Since the CNSs were encouraged to reflect on and describe their extensive past and present experience, the line counts rapidly accumulated.

While the high line count for this factor is relatively easy to explain, the inconsistent finding of high salience in line count and low salience in the use of descriptive adjectives requires further exploration. Several possible explanations present themselves, however. First, because of their long experience, the CNSs' intellectual and problem-solving skills are so near to being unconscious that for the most part the CNSs are unaware of their impact. Second, the process used for problem-solving is so routine and its utility is such a basic expectation that to emphasize its importance might seem superfluous. And last, the CNSs may perceive their success as originating from external sources (i.e., opportunities provided by colleagues and supervisors, their advanced degrees and credentials, or encouragement provided by mentors) rather than from their cognitive abilities. All these possible explanations are candidates

for further research.

The automaticity associated with the process of problem-solving, as perceived by the CNSs, confirms findings from the literature in the field. Studies have consistently shown that problem identification, analysis, and resolution is so automatic among experts that they are not consciously aware of the process they used to achieve a result (Corcoran, 1986; Chi, Feltovich, & Glaser, 1981; Schoenfeld & Herrmann, 1980).

Intuition

Intuition did not surface as a major indicator in the progression toward achieving expertise. The reason for this is that -- as with information-processing and problem-solving -- intuition is a characteristic of experts rather than a factor that impacts on progression. It is a combination of sophisticated skills, ranging from direct observations to more subtle innate physiological and psychological "feelings" associated with an event. As a result the CNSs did not usually identify intuition as a separate indicator that explains success. Several of the CNSs acknowledged that they relied on intuition frequently and felt overall that it was a reliable skill. This finding is consistent with the literature on the use and reliability of intuition by experts which has been presented

in Chapter Two (Benderley, 1989; Benner, 1984; Silverman, 1985;). However, as a factor which promotes progression from novice to expert, no CNS reported that intuition played this role.

Some readers may challenge the assertions offered earlier regarding the difficulty of manipulating cognitive skills, particularly intuition. This research does not deny its existence or import, but rather suggests that intuition is a characteristic that may be enhanced much like problem-solving. However, research which suggests that intuition or other cognitive skills can be taught may require further exploration. Cognitive skills can perhaps be cultivated by promoting various techniques of breaking down problems or enhancing memory, but these methods basically take advantage of skills already present.

Factor Two: Mentors and Mentoring

With regard to this factor, the problem seen earlier of inconsistent findings on measures of salience reappears, although this time it is reversed: emphatic mention of the importance of mentoring was combined with a low line count. Since the literature links mentoring strongly with achievement, this factor would have been expected to have high salience as measured by line count.

To be sure, many of the CNSs attributed their advanced

positions and expert status partly to mentors and mentoring. Mentors were acknowledged as important to the CNSs and were identified as partly responsible for their success. Mentors were seen as offering guidance, direction, and advice for career decisions. In effect, mentoring is a means of benefiting from another person's experience.

However, mentoring is not a widespread practice in the nursing profession. There are several possible explanations for this. First, nursing professionals spend so much of their time assisting patients and families that to focus on supporting colleagues is not perceived as a priority. Second, the physical and psychological energy required of nurses may consume most of what reserves could be directed to a mentoring relationship. Third, because nurses generally work varied schedules, shifts, and sometimes on different units, it is difficult for nurses to establish a mentoring relationship.

The literature on mentoring has investigated primarily the impact of mentors on people in executive level positions (Fagan & Fagan, 1983; Kensey, 1986; Vance, 1989/1990). The approaches taken to mentoring and opportunities to engage in a mentoring relationship have not filtered down and been operationalized at the level of the staff nurse. This is probably because nurses as a general rule do not perceive

that they have the latitude or time to engage in a relationship with a mentor, nor do they realize the benefits the relationship could offer them.

Factor Three: Motivation and Education

Motivation

Almost by definition motivating factors are significant in explaining advancement. They are designed to provide inducement for seeking expanded roles and additional responsibilities. Motivators also provide the incentive for enhancing the intellect and encouraging excellent performance. It is therefore no surprise that motivating factors should promote progression from novice to expert.

Nonetheless, a significant finding that emerged from the interviews was the assertion by several CNSs that even if they had not received encouragement from colleagues or supervisors and had not been exposed to motivating experiences, they probably would have succeeded anyway. They attributed this to their internal desire to advance. This internal drive perceived by the CNSs is most likely related to common personality characteristics that demand perfection, continuous growth, and professional achievement. This finding will be explored more extensively later in the discussion of factor six, intrinsic motivation.

Education

Education -- especially graduate education -- emerged as a significant factor in explaining advancement. Several CNSs rated education as a critical factor in their career development. Several features of education are involved in making it important. First -- and most obvious -- education, especially graduate education, prepared the CNSs academically as well as clinically for their professional roles. This graduate curricula include nursing courses that are directly related to the role of the CNS as an advanced practitioner. Second, it provided the formal credentials required for the position. And third, the environment in graduate school stimulates and expands the intellect, is more closely aligned with career goals, and provides incentives to achieve excellence in practice.

The importance placed by the CNSs on the application of graduate educational theory to a practice setting and their role as a clinical nurse specialist also confirms the findings from the adult education literature. The literature suggests that learners who are goal-directed find learning experiences to be most effective when they can be immediately applied and when they are directly related to their needs at the time (Burgess, 1971; Houle, 1961; Sheffield, 1964).

The information required to practice at the level of expert is most effectively acquired through advanced education in an academic setting. It is possible to develop some aspects of nursing theory through experience but relying on experience alone is very limiting: It might take years to acquire information and develop theories with no guarantees as to accuracy or reliability. Persons with the potential to be expert in their field recognize this and pursue advanced education as an efficient means to achieve their goals.

Factor Four: Experience

Experience ranked very high in both measures of salience, line count and descriptors. As with several other influential factors, this should not be a surprising finding: Nursing is a practice discipline which relies heavily on clinical involvement. There is also general agreement in the literature that a major way of attaining knowledge and expertise is through experience (Balasco & Black, 1988; McCall, Lombardo, & Morrison, 1988; Pyles & Stern, 1983).

The CNSs felt that their experience provided them with the confidence and skills to confront difficult situations with assurance. Experience provides the opportunity to see diagnoses, perform skills, and make clinical decisions over

and over again, so that at some point very little is new. Repeated success fosters confidence and automaticity. This continuous exposure and practice facilitates advancement.

Experience also is the only way in which theory can be applied. A laboratory setting is effective only to a point, and then the nurse must actually see the effects of pathology and the results of one's interventions on a real patient in order to expand one's repertoire of knowledge and skills.

Factor Five: Institutional Incentives

Perhaps the most surprising finding of this study is the low ranking of institutional incentives. Incentives, particularly the clinical ladder, ranked very low in both measures of salience. This runs contrary to the literature which suggests that the clinical ladder is influential in promoting excellence within the nursing profession (Balasco & Black, 1988; Benner, 1984; Perry, 1989).

Perhaps the major reason that clinical ladder programs were not influential to this population of nurses was because they did not meet the CNSs' professional goals and they were difficult to access. When barriers such as these are present, participation is minimal and impact is low. Clinical ladder programs in general have not been developed and marketed properly. There are inconsistencies in

selection criteria, difficulties gaining administrative support for monetary rewards, and ineffective utilization of nurses who do gain a promotion. In addition, many small hospitals are unable to provide promotion practices such as the clinical ladder, so they are available mainly to those who are employed by larger institutions.

In addition to this practical reason, there may be perceptual causes for the low impact of institutional incentives on progression from novice to expert. Because the CNSs have already achieved the level of expert, their perceptions of institutional incentives and their value may be mitigated. They may not regard incentives as important now as possibly they were earlier in their career when their focus was on profiting from as many opportunities as possible. In addition, because the CNSs seem to be internally motivated, institutional incentives may not be important to this population of nurses. A final possible explanation for the low salience is that because this is a small population, the CNSs just did not have the opportunity to become involved with an effective clinical ladder.

Factor Six: Intrinsic Motivation

The notion of motivation originating from within was mentioned by a majority of the CNSs. Even though both measures of salience were low, the factor deserves further

exploration because the frequency measure was very high, that is, it was mentioned by almost every CNS.

The frequency with which this factor was cited suggests that intrinsic motivation is related to some common personality characteristics among the CNSs. The literature reviewed in Chapter Two consisted of studies that focused on factors that influenced the progression or attainment of expertise, not psychological characteristics of the expert. For this reason, the emergence of a predominately psychological factor was unanticipated. This, however, suggests another dimension to the phenomenon of novice-to-expert advancement.

RECOMMENDATIONS

The recommendations flowing from this study fall into two categories, one concerning practice and the other further research. As suggested earlier in the introduction to the conclusion section, the use to which these findings are put depends on one's purpose.

The practice recommendations derive from the fact that some factors are amenable to manipulation, that is, an administrator or educator can develop a program to influence the nature and extent of exposure to a certain factor such as education or experience. Generally speaking, more education, more experience and more mentoring foster more

expertise, or -- in terms of the Benner framework -- provide the skills and the encouragement that lead to expert status.

The research recommendations are designed to develop a better understanding of the manner in which the factors influence the progression to expert status. Further research is required on all of the factors identified in the study, even those which apparently play a minor role. The fact that institutional incentives did not appear to be a major influence goes somewhat against what most would consider common sense, and contradicts a fundamental premise of motivational theory. It is necessary to determine why this is the case.

<u>Practice</u>

Mentoring

Based on the findings from this research and the literature, institutions which seek to advance the level of staff expertise should establish mentoring programs. This is especially important for those institutions that employ new graduates, inexperienced nurses and nurses who are returning to the field after a lengthy absence. The goals of these mentoring programs should include at least the following:

- To assist in the development of the new graduate nurse;
- To promote the transition of the staff nurse;

- To identify the continuing personal and professional needs of the staff nurse;

- To develop a communication network for meeting the needs of the staff nurse.

It is critical to instill a sense of importance of mentoring programs beginning with the orientation phase of employment. Entry level assessments of employee's needs and goals can assist in the identification of an effective mentor for new nurses. Education departments can also be instrumental by offering regular sessions describing the mentoring philosophy, how it is implemented, and the usual responsibilities of the mentor and protege.

Since nursing executives have been the primary beneficiaries of mentoring relationships, these leaders should begin by sharing the rewards and benefits with their colleagues and encouraging similar relationships. Fostering a sense of importance, role modeling behaviors, and following-up on expectations are all methods to assure that mentoring become a successful approach to promoting excellence.

Education

Nursing programs should continue to offer advanced physiology and pathophysiology courses, nursing theory, as well as emphasize critical thinking and decision-making. To

facilitate the attainment of advanced education, graduate courses should be made more easily available to the staff nurse. One way to accomplish this is to conduct courses on site in facilities that employ nurses. A contractual agreement could be arranged between the university and the health care facility to offer courses on a regular basis that would most directly meet the academic needs of the staff nurse.

In order to assure that graduate programs continue to meet their objectives of preparing advanced practitioners, the courses and matriculation strategies should be examined regularly. This will help ensure that the content is related to the activities of a professional nurse and the skills directed toward expert practice.

Internship programs can also foster advancement from novice to expert, especially at the novice level. Internship programs offer extensive education and clinical rotations with strong preceptor support. Some institutions offer internship programs, but as a rule they are still in their infancy and not well developed. The length of these programs should coincide with the average length of time necessary to progress from novice to advanced beginner, which according to Benner is approximately one year.

Experience

The research suggests that nursing programs should place a stronger emphasis on appropriate patient assignments and validation of knowledge and skills. A basic component of this process is additional clinical time incorporated into nursing curricula. With additional time spent learning the practical aspects of clinical nursing, new graduates would be better equipped to assume responsibilities for the majority of patient assignments. Advancement through Benner's stages would be facilitated because the nurse would have a stronger experiential foundation.

Institutional policies should address the relationships between patient assignments and the level of the practitioner in order to more effectively match skill level with patient requirements. This approach achieves several objectives. First, it emphasizes the role that experience plays in meeting patient needs. Second, it assures that patients are receiving care from appropriately qualified nurses. And last, it serves as an incentive for achieving advanced levels of clinical competence to assure participation in complex patient assignments.

<u>Research</u>

Several areas for further research are suggested by this study. The primary need is to verify, through replication

and the use of a larger sample, the factors examined in this research. It is also important to identify additional factors that may impact on achieving expertise. This study has confirmed some strong influencing factors discussed from the literature, as well as a distinctive one not identified *a priori*. Additional factors undoubtedly exist.

While all of the factors examined in this study need to be examined in more depth, two stand out as requiring more attention than others. The evidence from this study suggests that -- for this group of experts at least -- institutional incentives serve little purpose. Institutional incentives -- as identified here, clinical ladder programs -- ranked very low in promoting advancement in spite of the assertions of the literature and the prevailing beliefs of administrators and educators. Institutional incentives, whether clinical ladder programs or other material motivations, supposedly reward clinical excellence, encourage clinical competence, and motivate bright and talented nurses to remain at the bedside. Researchers and administrators need to evaluate their clinical ladder programs or other institutional incentives, determine whether they are meeting their goals, and modify them accordingly. In-depth research on what kinds of institutional incentives promote what kinds of behaviors is

a necessary prerequisite to developing these programs.

A second major candidate for further research emerged during the course of the interviews: personality traits. As noted earlier, most of the CNSs either stated directly or implied that their drive to achieve expert status came from within. This finding certainly warrants further investigation through the exploration of learning theories from the field of adult education and their potential relationship between motivation to learn and the defining characteristics of expertise. Another area for investigation would be through the administration of the Myers-Briggs or other tests to a larger number of identified experts. This could even be carried over to the examination of non-experts and a comparison drawn between the two groups.

Another area for further research is to explore why some nurses become expert and others do not. This involves examining nurses who meet many or most of the criteria for expert, but have not achieved that level, as well as investigating why persons remain at given plateaus of performance.

While all of these are suggestions for research in new areas, the following include suggestions for redesigning and strengthening the present study. Two areas require special

attention. First, a replication should focus on a sample of CNSs who are not known by the researcher. This is necessary to eliminate possible bias introduced by the fact that the population of the present study are colleagues of the researcher. While no apparent bias was identified as a result of interviewing the present population of CNSs, it is nevertheless a potential concern. Second, it would be useful to include independent assessments from colleagues or supervisors to verify the self-reported data of the CNSs. Again, there is no evidence that the CNSs distorted or exaggerated their experiences, however, external verification would lend credibility to their reports.

CONCLUDING REMARKS

The notion of expertise and the path toward achievement of that status is critical information for adult educators. Knowing who possesses this advanced knowledge and skills is vital, but even more essential is understanding what facilitated the attainment of their mastery. Having this additional information, educators are better equipped to assist learners in achieving their goals, and in preparing and presenting quality educational programs which more closely meet the needs of the learner. Hence, more information about factors that facilitate the attainment of expertise is a critical need if the field of

adult education is to promote its goal of excellence in scholarship and research.

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Appendix A

Fairfax Hospital - Nursing Services Division

CLINICIAN V Job Description

January 1988

Gertrude L. Rodgers, Assistant Administrator
Director, Nursing Services Division

Job Summary:	The Clinical Nurse Specialist demonstrates in-depth knowledge of her specialty area, and independently applies theories and concepts derived from the biological, natural and behavioral sciences. The Clinical Nurse Specialist serves as a resource person for Clinicians I-IV for problems relating to health and illness of a patient population.

Qualifications:
1. Graduate of an accredited school of nursing.

2. MSN

3. Current licensure as an RN in the State of Virginia.

4. Maintains Clinician IV criteria and meets Clinician V criteria.

5. Eligibility points of 60.

Responsibility
and Accountability: Responsible for all level V criteria and accountable to the Clinical Director, nursing staff and patients.

I.   NURSING PROCESS

   A.   Patient

      1.   Assessment

         a.   Utilizes a systematic approach to people, reflecting knowledge of each individual as an integrated being.

         b.   Uses knowledge of a variety of models in order to consider alternatives that explain and predict present or potential problems.

        C.   Uses specialized clinical knowledge to
select and adapt models for meeting the
needs of a specific patient population.

        d.   Develops/uses assessment tools to deter-
mine the data base for a particular
population, modifying and adapting
assessment tools as necessary.

2.   Planning

        a.   Selects a specific patient population for
direct care to:

            1) Classify the common nursing needs
that define the relationship be-
tween cause and effect of nursing
intervention.

            2) Test non-standardized nursing inter-
ventions with unpredictable outcome
and bring them into the realm of
predictability.

            3) Determine/validate methods of
orienting patients to the nursing
care plan.

        b.   Communicates recommendations for care for
the patient/family which result from the
consultation.

        c.   Collaborates with support services to
facilitate the delivery of patient care.

        d.   Collaborates with attending and house
physicians to facilitate the delivery of
patient care.

3.   Implementation

        a.   Establishes contracts for nursing care
with specific patients, stating mutual
goals and expected outcomes.

        b.   Makes determinations for selection of
patients for direct care and delineates
aspects of care to be delivered in
collaboration with the Primary/Associate
Nurses.

        c.   Identifies the physiological and environ-
mental variables affecting the patient.

        d.   Gives direct care to patient to:

            1)   Explore areas of patient problems.

            2)   Identify learning needs of staff.

            3)   Provide content necessary for maintaining/increasing clinical competency.

            4) Enhance interdisciplinary relationships by demonstrating clinical competence.

    4.   Evaluation

        a.   Elicits patient evaluation of the nursing care received.

        b.   Develops and reviews expected outcomes of nursing interventions.

        c.   Evaluates the long term consequences of nursing interventions.

        d.   Submits annual report that evaluates the program of care within specialty area, forecasts directions for change and establishes future goals.

B.   Patient Populations

    1.   Standards of Care:

        a.   Develops and evaluates Standards of Care for a specific patient population.

        b.   Initiates the development of written criteria for teaching standards for specific groups of patients.

        c.   Collaborates with Nursing Coordinator to implement Standards of Care.

    2.   Collaborate with the Primary/Associate Nurses to develop the Nursing Care Plan in order to meet specific needs.

    3.   Consults with clinicians regarding discharge planning for a specific patient population.

    4.   Teaching

        a. Assists with establishing teaching/learning priorities for patients/families.

        b. Utilizes learning theories that guide decisions about the patient/family education programs.

        c. Identifies/provides/develops/maintains learning resource materials to facilitate the education process for patients/families.

        d. Collaborates with Clinician II, III and IV to formulate written objectives based on the learning needs of specific groups of patients.

        e. Collaborates in the development/ implementation/evaluation of education programs for patients/family.

II. PROFESSIONAL RESPONSIBILITIES

    A.   Self Evaluation

        1.   Identifies areas of strengths, limitations and future goals.

        2.   Serves as a positive role model for staff.

        3.   Pursues continuing/formal education opportunities and applies knowledge to practice.

        4.   Evaluates own personal performance based on attainment of immediate and long-term goals that are congruent with the agency objectives.

    B.   Staff Development

        1.   Assists with establishing teaching/learning priorities for staff.

        2.   Utilizes learning theories that guide decisions about staff education programs.

        3.   Identifies/maintains/develops/provides resource materials to facilitate the education process for staff.

        4.   Collaborates with preceptors to adapt the planned unit level orientation program to the identified learning needs of the specific new employees.

        5.   Collaborate with planning, implementing and evaluating appropriate learning experiences for all levels of staff.

6.   Provides situations in which knowledge is articulated and disseminated to staff.

7.   Acts as a resource for clinical care problems in a variety of settings within the institution.

8.   Collaborates with other Clinical Nurse Specialists to develop and implement intradepartmental standards for staff.

9.   Provides emotional and situational support for nursing staff.

10. Department based Clinical Specialists will:

   a. Participates with the Education Coordinator in the development of written criteria for planned unit level orientation program for staff.

   b. Actively contributes to the growth and development of Clinician IV. (Clinician III at discretion of the Director)

      1) Orients and assists Clinician IV to role function.

      2) Counsels and supports Clinician IV.

      3) Participates in peer review for Clinician IV.

C.   Unit Development

1.   Promotes effective communication systems to facilitate the exchange of information from the unit(s) to the Department of Nursing Services as well as to the larger system.

2.   Promotes an effective communication network on the patient unit.

3.   Initiates planned change and evaluates the outcome to improve quality of patients' care through conscious, deliberate and collaborative effort.

4.   Communications rationale, progress and evaluation of change to the Nursing Coordinator/Director of the area.

5.   Establishes and maintains a communication system with other departments and agencies that are used as resources for patient care.

6.   Provides consultation to clinicians for conflict resolution.

7.   Communicates final decisions regarding standards of nursing practice to all levels of personnel.

8.   Interprets the role of nursing in patient care situations to nurses, health professionals, patients and families.

9.   Evaluates the milieu in which care is given and makes recommendations for change.

10. Uses systematic methods of scientific inquiry to investigate patient care and nursing problems:

     a. Audits patient charts, care plans and patient care conferences.

     b. Observes practice.

     c. Reviews guidelines for practice and helps develop new and/or revised tools.

     d. Identifies need for and supports and encourages spirit of inquiry in others.

     e. Participates in product evaluation.

11. Works toward the modification and/or removal of constraints on improving the quality of patient care and nursing practice.

12. Supports the nursing and hospital committee structure.

13. Collaborates with other department institutions regarding change, information exchange networking, marketing, patient care and/or cost containment.

D.   Student Development

1.   Collaborates with faculty on programs as they relate to students and staff learning experiences.

2.   Serves as a mentor for graduate students in nursing and provides clinical/consultative opportunities for other students.

3.   Participates in evaluation of student clinical experiences/provides feedback for clinical faculty or record.

4. Department based Clinical Specialists will identify learning programs of the unit and invites students and faculty to participate.

III. RESEARCH

A. Actively participates in Clinical Research

1. Investigates methods of delivery of care.

2. Studies response to illness in order to plan and implement preventative and rehabilitative measures.

3. Assists staff with performing nursing research.

4. Assists staff in interpreting and implementing research findings.

5. Uses research findings to modify clinical practice.

B. Communicates Research Findings

Appendix B

Demographic Information

1. What is your basic educational preparation in nursing?

2. What is your highest degree?

3. How many years have you practiced in nursing?

4. How long have you practiced as a Clinical Nurse Specialist?

5. What is your clinical area of specialization?

6. Has this always been your area of specialization?

7. If not, when and what precipitated the change?

Appendix C

Consent Form

I, _____, agree to participate in the research study being conducted by Roberta McGregor entitled "Expert Practice and Its Achievement: The Case of Professional Nurses". I understand my role as a co-researcher will involve some study of Benner's novice-to-expert framework, a taped interview with written notes taken by the researcher, and a review of the final transcript of my interview. During the interview I will be asked to report on experiences during my professional career development. I understand that my name will not be used in any publication of findings, but that information and verbatim statements I provide during the interview may be included in the final report. I also understand that the inclusion of this information will only be used for the purpose of data analysis. The taped interviews will be left intact and kept in confidence by the researcher, unless I specifically request that my tapes be destroyed.

I understand that I may withdraw from the study at any time.

_____   _____
Signature   Date

Appendix D

Interview Guideline

<u>INFORMATION-PROCESSING, PROBLEM-SOLVING, AND INTUITION</u>

1. Describe your practice right after graduation from your basic nursing program <u>and</u> your current level of practice in terms of:

   A. A patient incident that was especially challenging or demanding;

   B. A detailed description of what happened;

   C. Parameters that you used to evaluate the patient's condition;

   D. How you approached nursing interventions;

   E. How you functioned in making clinical decisions regarding patient outcomes (dependent or independent);

   F. Your concerns at the time.

2. What happened during your first year as a nurse to interest you in practicing more effectively?

3. How would you compare your practice one, three, and five years after graduation with your practice right out of nursing school?

4. What facilitated the advancement of your practice?

5. How did you know when you were practicing as a master?

6. When were you able to assume responsibility and accountability for patient outcomes? What helped you with this process?

7. How did you learn how to recognize a patient situation in its entirety rather than just as a single episode?

8. Describe how you anticipate patient problems or complications. When and how did you learn this skill?

9. How do you problem solve? What facilitated the enhancement of this skill?

10. Do you use intuition in patient situations? If so, how have you experienced it in your clinical practice? (taken from Rew, 1988b)

11. If you do not feel you use intuition, why not?

12. How did you develop your clinical skills?

ROLE OF MENTORS

1. At any stage of your career, have you had a relationship with a person who took a personal interest in your career and who guided or sponsored you? (taken from Roche, 1979)

2. Was anyone especially influential during your career in offering you support and/or encouragement?

3. If so, please describe how this person(s) influenced your career development and decisions.

MOTIVATION AND EDUCATION

1. Can you recall specific events or situations in your professional career that encouraged or motivated you to excel in your nursing practice? If so, please describe how they were influential.

2. At what point in your professional career did you pursue an advanced degree and what prompted this decision?

3. How have you pursued learning (knowledge and skill) in areas in which you have felt deficient?

4. How did you learn the necessary information about your clinical specialty?

EXPERIENCE

1. How would you compare the role of experience with that of cognitive knowledge development in relation to the impact they have had on your clinical advancement?

2. How did you develop problem-solving and decision-making skills?

3. What helped you to learn to set priorities for patient care?

INSTITUTIONAL INCENTIVES

1. Can you recall advancement programs or promotional practices that were available where you worked that influenced your professional advancement?

2. If you advanced up a career ladder, what impact do you feel this had on your achievement?

Appendix E

Descriptive Data on Interviewees

INTERVIEWEE	BASIC EDUCATIONAL PREPARATION	HIGHEST DEGREE	YEARS IN NURSING	YEARS AS CNS	CLINICAL AREA OF SPECIALIZATION	HAS THIS ALWAYS BEEN CLINICAL AREA	IF NOT WHY
1	BSN	MS	10	4	gerontology	yes	N/A
2	Diploma	MSN	14.5	6 mos.	gerontology	no	Opportunity for autonomous advanced practice involving direct patient interventions
3	ADN	MSN	9	2.5	medical nursing	yes	N/A
4	Diploma	MSN	8	1.5	critical care nursing	yes	N/A
5	BSN	MSN	13	8	cardiovascular critical care nursing	partially	Started out in general critical care, then moved into cardiovascular critical care
6	BSN	MSN	14	4	oncology	yes	N/A
7	Diploma	DNSc	12	2.5	perinatal nursing	yes	N/A
8	Diploma	MS	13.5	10 mos.	trauma	yes	N/A
9	BSN	MSN	8	10 mos.	pediatrics	yes	N/A
10	Diploma	MSN	13	2	diabetes	no	personal and professional interest and growth

Protocol Analysis

Interviewee # 6

Interviewer: Could you describe your
practice right after graduation from your
basic   nursing   program   including   a
patient   incident   that   was   especially
challenging or demanding and describe
what went on, what happened with that
patient, the parameters that you used   to
evaluate the patient's condition, how you
approached your nursing interventions and
how you functioned in making clinical
decisions   regarding   patient   outcomes.
Did   you   feel   you   were   dependent/
independent, and what were your major
concerns at the time.

Interviewee: Well,   the   one   patient
incident   that kind of comes to   my   mind
whenever I think about first getting   out
of   school was probably my first   primary
patient.   He was a man, I   can't   recall
his name now, and he had been admitted to
the   nursing unit which was ostensibly   a
surgical   orthopedic unit but in fact   he
was   a medical patient and it turned   out
he   was an oncology patient. He was   one
of   four patients in this room, it was   a
four bed ward, and I recall that,   the
incident that mostly comes to my mind   is
that during the night shift one night the
nurses   had attempted to insert   a   foley
catheter   into   this man and when I   got
report   and   went   in to   do   my   initial
assessment apparently his genitalia   had
ballooned   up like someone had blown   air
into it.   No one had mentioned to me that
this phenomena had occurred, in fact   all
they   had said was they had had a   little
bit   of difficulty passing the   catheter.
Well,   I   was   astounded   because   I   had
rarely in my baccalaureate program   cared
for   men   with foley catheters   to   begin
with,   wasn't   entirely   comfortable
examining male genitalia and I found this

distinctly unusual appearance. <u>So what I remember about it was I was totally fixated on the catheter and the technology to the exclusion of the patient. There was no man in bed, there was a catheter into a very large genitalia and I couldn't figure out what to do about it. My actions for the remainder of that shift were totally surrounded by, and fixated on, figuring out what had happened and what we were going to do to correct it.</u> Actually, as it turns out, what had happened was that during the process of inserting the catheter they had traumatized the urethra and the man had urine leaking into his tissues and that caused his whole genitalia and his scrotum to balloon up. <u>What kind of struck me about that was I had just absolute tunnel vision about this part of the patient, every other aspect of his care was immaterial to me and that I could not focus beyond it. And how I approached my nursing interventions, I was absolutely panicked, did not view anything possible that a nurse could do to fix it, obviously I was going to have to get a physician in there going to have to be corrected by a physician. My clinical decisions regarding patient outcomes were, I would say very dependent and that I placed myself in a dependent role waiting for a physician to come up and evaluate the patient and tell me exactly what it was I needed to do to get this problem fixed, whatever the problem was. In fact I wasn't even able to do problem solving to try and sort out what might have caused this</u>.

Novice

Novice

Interviewer: What were your concerns?

Interviewee: <u>My concerns were I think probably as fundamental as if this keeps going his genitalia is going to explode</u>. Not that physiologically we might be doing harm to him or that anatomically we

Novice

might do harm to him or anything other than that, but that something horrifying bad was going to happen as a result of this. Those were my concerns and I remember this very vividly.

Interviewer: Now, look at where you are right now in your practice, a patient incident and what happened.

Interviewee: There's lots of them. One example that I can think of now is a young woman, 31 years old, who was dying from metastatic cervical carcinoma, who was admitted to our nursing unit with terminal support care as the goal. Primarily focusing on pain control. The lady had had a fairly rocky course of trying to get her pain under control that had included alternately epidural analgesia or systemic and chronic analgesia or IV sedatives or a combination of any of those modalities. When she came to the unit she was initially started on a continuous IV narcotic infusion which would be fairly standard procedure for the patient who is being terminally supported and the primary goal being comfort. Along with that she was receiving intermittent IV administrations of Ativan to try and keep her sedate and she, within probably twelve hours of admission to the unit, developed some tremoring which we kind of looked at that and since she was not able to respond because of the extent of her disease, the nurse working with her initially interpreted that tremoring as being a pain response. The nurse, who was a younger practitioner, called the physician and related that physical finding, coloring it with her perception that it was a pain response and subsequently came the order to increase the Dilaudid from 20 mg to 60 mg an hour with 5 mg boluses every hour and 3 mg of Ativan IV every hour. This had all transpired before I entered the case with

the patient. The next morning one of the nurses asked me to come in and evaluate the patient, but first she said "Have you ever known a patient to get shaky because of narcotics"? I said well, it can happen, it's more frequent with some narcotics and with other narcotics it is not particularly common. Then she asked me about the Ativan and I said "that could occur as well. Why don't we go ahead and check it out". So we reviewed the pharmacology of the two drugs and found that there is a slight incidence of this occurring in Dilaudid. <u>We went in and evaluated the patient and she was having generalized tremors and just appeared to be uncomfortable but rather than accepting that at face value it seemed unlikely to me that an individual who had been very recently, within the last twelve hours, increased from 20 mg of Dilaudid to 60 mg of Dilaudid with 5 mg boluses hourly would in fact be experiencing so much pain that they would be tremoring. So at that point in time I decided to watch the patient and evaluate her status on a continual basis to see if we were identifying the trends. I went into her room probably two hours later, to evaluate her again with the nurse, and at this point in time she was having generalized seizure-like movements</u>. The nurse who was caring for her was still under the impression that these were because of pain. <u>I said that I was confident that was not the case that we are dealing with something beyond pain and at that point in time I went out and called the nurse working in anesthesia and said "you need to come up and evaluate the patient because there is something happening here that is out of the ordinary and we need to intervene because it is not good for the patient." Certainly if she dies that's not the problem, the problem is that it is probably causing her distress and I know its causing her family great distress</u>.

<div align="right">Expert</div>

<div align="right">Expert</div>

The nurse came up, the anesthesiologist came up and the oncologist came up and all of us together were trying to sort out the multitude of variables that were playing into this patient's condition. The situation was still not resolved and I had still been in the library doing research and a review of the intervention to see if we can find out exactly what it was that had transpired that was causing this and eliminate that variable and get the lady into a more sedated comfortable state.

Interviewer: Were her meds altered, dosage changed?

Interviewee: We made alterations, we decreased the Dilaudid, we re-initiated continuous epidural with Fentanyl and Bupivicaine and we started her on a Phenobarb drip but she was still having this problem. So, it's a critical puzzle to me and the interesting thing is that anesthesia and the medical oncologist have just pretty much accepted the fact that this is normal. <u>But I cannot accept that because number one, I have an obligation to the patient to keep her comfortable and number two, I want to know why. It's just not ok not to know why. I think that is probably the biggest difference is that I constantly come up with questions that other people just don't</u>.

Expert

Interviewer: So, the parameters that you used to evaluate the patient's condition - can you summarize. How did you evaluate, what data did you use to evaluate what was going on. How did you approach the whole situation?

Interviewee: <u>It was not just a simple neurological evaluation with the patient or a simple pain assessment. I think it was a kind of constant comparison that was going on in my mind between her case</u>

Information Processing

and every other case that I had ever been involved with that made this stand out and say there is something dramatically wrong here which is not like anything I have ever seen before. The pieces don't fit together in any meaningful way.

Interviewer: How you approached you nursing interventions?

Interviewee: I would say I approached some of them fairly typically initially but I wanted to maintain an open airway for the patient and attend to those needs but beyond that I would say that the nursing interventions I pursued are more in the role of an advocate on behalf of the patient attempting to get resources and resource people involved in her care to try and solve the problem. So I would say that my interventions were less directed specifically at my personal contact with the patient and more placing myself in the advocacy role.

Expert

Interviewer: How you function in making clinical decisions regarding patient outcomes?

Interviewee: I would say very independently, in terms of seeking out other opinions and trying to coordinate the various different disciplines that we're seeing in various degrees and literally forcing the physicians involved to go into the room and talk to me about what was happening so that we would have some kind of a cogent plan to approach the problem.

Expert

Interviewer: And your major concerns?

Interviewee: My major concerns were that we had not met our ethical obligation to the patient and to the family to provide her with supportive comfort during her last days.

Interviewer: What happened during your
first year as a nurse to interest you   in
practicing more effectively?

Interviewee: <u>Probably it was my head</u>   *Motivation*
<u>nurse at the time who I would say I   had</u>
<u>probably   been   practicing on a general</u>
<u>surgical orthopedic unit for maybe six or</u>
<u>eight months and she sought me   out and</u>
<u>sat me down and told me that she   thought</u>
<u>that I was probably the most   impressive</u>
<u>new graduate that she'd ever worked with</u>
<u>and that she felt that I needed to</u>
<u>investigate the critical care program</u>
<u>that was opening up in the hospital   that</u>
<u>she wanted me to have that kind of   an</u>
<u>experience because she thought I   needed</u>
<u>to expand my repertoire of skills   that</u>
<u>way and that she did not foresee that   I</u>
<u>would   be   content if I stayed in   that</u>
<u>staff nurse position on that unit and she</u>
<u>didn't want to see me become bored   and</u>
<u>unhappy with the profession</u>.

Interviewer: Were you surprised when she
said all that to you?

Interviewee: Oh yes, because <u>I was not</u>   *Novice*
<u>confident at all</u>, I mean she said I
always looked like I was confident   from
the day that I got there but I was scared
the whole time. In fact, you know the
things that happened like when the first
patient died, even though he died while I
was giving report, I had some sense of
responsibility that because I was a   new
graduate I had missed something   and
that's why the man had arrested. So   no,
I couldn't believe that she told me that.

Interviewer: How would you compare your
practice one year, three years and   five
years after graduation with your practice
right out of nursing school?

Interviewee: Right out   of   nursing
school. <u>I was probably not the most</u>   *Novice*
<u>confident   nurse who   ever   graduated</u>

because I came out of a baccalaureate program and I didn't have as much clinical experience as some of my colleagues who had come out of three year diploma programs. But I had some comfort level with having worked as a unit secretary in a hospital during school so some of the lingo wasn't too scary to me. I would say that I was a pretty ok nurse for a new graduate and I didn't do any horrifyingly bad things. <u>A year out I had just been in the ICU setting for probably maybe three to six months and that was quite traumatic to me because everything I had learned was new, to me, as though none of that applied and I had to learn how to be a nurse all over again. I was totally fixated on and intimidated by, the technology in the ICU but was able to integrate the technology into patient care because of prior experiences. And the patients, who are not so much perceived as persons needing nursing care as cases that needed the attention of the technology available in ICU.</u> And I would say that that perception persisted for a while but I can draw a distinct contrast <u>at three years out of school because at that time I was still doing critical care but I was doing it on a PRN basis and I was in graduate school at the time and I do recall that I was very comfortable walking into a community hospital and being assigned to any critical care unit and I felt I could walk in and be just extraordinarily functional immediately. But it was a functional capability which was limited in its scope because if, for example, I were asked to go to a non-critical care unit, I would be totally wigged out. Because once again I had narrowed my scope in nursing practice to simply being critical care. And while I was no longer just focusing on the technology and I was including patient and including family in what I was doing, it was still very, very high tech focused on doing things exactly the same way</u>

Advanced
Beginner

Competent

<u>every single time with the patient the way critical care nurses can</u>. I was just like that and when I was sent to medical units and surgical units it was not a good thing. It wasn't good for the patients and it wasn't good for me. Because I could not find a way to make what I knew about nursing fit into the situation - I just couldn't, it wouldn't translate for me. What I found, though, between the three- and five-year period is that when I did finish graduate school I moved into a clinical specialist position which I am absolutely sure I was qualified for the position, but when I went into the position I was thinking, oh my God, they're going to find out that I'm not. My assignment was to cover, initially the medical nursing units and then medical nursing units and then, due to a reorganization in the hospital I covered critical care and the medicine ICU. Because of the time I spent in medicine, for a couple of months and then the melding of the two allowed me to begin to see aspects of nursing practice that are common to all centers. I think that was further developed when I had the opportunity to teach senior level nursing students and have them in clinical rotation, that causes you to have to stop and examine your own practice. When you're trying to help someone else you have to think very clearly about what it is you do and why you do it. You also have to help the students to try and draw some connections between pieces of data, otherwise they are out there functioning like I was as a new graduate with discreet pieces of information that you never put together into a meaningful whole. <u>So I would say now, and five years out now, or however many years it is, that at a more proficient level that I...I don't see my nursing practice as being in particular chunks, it's just my nursing practice</u>. It's hard for me to describe what it is that I do with

Proficient

patients because I just, <u>when I go in and
work with them it just kind of happens.</u>   *Expert*
<u>All of the stuff comes together all by
itself. But I would say that that is a
combination of experience and education</u>   *Experience*
<u>and in addition to that, I think when you
look at expert nurses there is something</u>   *Education*
<u>about the nurse who becomes an expert
that is different from other nurses
because every nurse that has been in
nursing five years doesn't become an
expert and education may not be the
mediating variable – there may be other
variables or influences. So there is
something else that I think was probably
fundamentally present at the outset,
something that the head nurse in my first
year out of school was able to identify
that has allowed me to become an expert.</u>

Interviewer: What facilitated the
advancement of your practice?

Interviewee: Well, I would say a number
of things facilitated that. <u>First of all
I had access to good education programs</u>   *Education*
<u>and I had the means to pursue graduate
level education and that was a
significant factor. Second, I was lucky
enough to work in an area where there
were good clinical facilities that were
helpful to me but I would say probably
the things that most influenced it were
individual people at various points along</u>   *Mentors*
<u>the continuum of my career and I've
already alluded to the one with my first
head nurse.</u> Then when I was in critical
care and the reason I went into graduate
school was because another head nurse had
sat me down and said "now you must go
back to school and get your master's
degree because you can't do this like you
are forever because you're going to
become bored with it". "You've already
done the things that you can do right
here and you need to go out and get more
education." <u>During graduate school I was</u>   *Mentors*
<u>influenced by faculty people that I</u>

worked with. After graduation I was
influenced by a woman who was my office
mate who was, and is, an extraordinarily
bright individual. She's not an expert
practitioner but she is extraordinarily
bright and we would have discussions
about clinical situations, I would run
things by her and she would challenge me   *Mentors*
intellectually in a way that, I think
caused me to probably think differently
in my approach to patients. Another
individual was someone who was a
colleague and also my supervisor who
consistently demanded excellence out of
my performance and would not accept
anything less than that. So I would say
that she was an influence. So more than
anything I would say it was people that I
interacted with.

Interviewer: How did you know when you
were practicing as an expert or master?

Interviewee: I would say probably not
until I had been in a clinical specialist
position for about a year. When I got   *Expert*
into enough clinical situations where I
realized that I really did know more
about the appropriate things to do for a
patient than anybody else working with
me, that I was able to get validation and
affirmation from my own observations and
I did not need to have that from other
people.

Interviewer: When were you able to
assume responsibility and accountability
for patient outcomes and what helped you
with this process?

Interviewee: Well, I can think of a
turning point in my career when I became
acutely aware of the fact that patient
outcomes were many times dependent on my
practice and that I could not simply view
myself as a person who carried out
somebody else's orders and that if there
was a problem it was them who screwed up,

not me. I was working in a surgical ICU,
with a patient who had a chest tube and
had empyema and one of the therapies was
to irrigate that chest tube twice a
shift.   I   remember   puzzling   over
precisely how I was going to do that,
without   compromising   the   patient's
already compromised respiratory status
and toying with the notion that well, I
guess if the doctor says it's OK to do
it, it's OK to do it. But what caused me
to have to reflect on the responsibility
and accountability I had was the fact
that I had a nursing student with me and
I could not give her that as a rationale
or justification for what I did or didn't
do.   <u>That's when I realized that every</u>   *Expert*
<u>time I interacted with a patient that I</u>
<u>was accountable for my practice, not just</u>
<u>when there was a nursing student with me.</u>
<u>It was a little scary</u>.

Interviewer: So when was that?

Interviewee: That was probably when I
was between three and five years out.

Interviewer: And that nursing student
helped you come to that awareness?

Interviewee: There had been other times
when I had recognized that clearly this
was a situation where the outcome was
going to be due to my practice.

Interviewer: How did you learn how to
recognize a patient situation in its
entirety rather than just as a single
episode?

Interviewee: I don't have any idea how I
learned that. I don't know, I looked at
that when I reviewed the questions this
morning I don't know how long ago it
happened. It was a process that occurred
over time that I was not looking at
episodic events, I was looking at an
occurrence along with it.

Interviewer: Was it just taking care of similar types of patients or just patients in general over time.

Interviewee: I would say that it was a process that occurred over time and I think it was probably the development of what I told you about earlier that I do, and <u>that is constantly comparing the situation with other situations to draw some kind of conclusion. It was clearly dependent upon a significant practice base that I can make those comparisons because if you don't have the practice base you don't have enough data to make comparisons with</u>.

Experience

Interviewer: Do you think it had anything to do with your increased comfort level and confidence.

Interviewee: Probably so, that I was not wigged out very frequently and that I was confident enough that I was a safe practitioner and a good practitioner that I could perhaps relax enough to view the whole picture rather than coming into a situation and immediately intervening based on one small piece of information.

Interviewer: Describe how you anticipate patient problems or complications and when and how did you learn this skill?

Interviewee: I will relate it to oncology patients, I'll relate it to bone marrow transplant patients, which is something I've just been learning about for the last year and a half. Even though I had not cared for a transplant patient before, I still did not feel uncomfortable with the notion of delivering care to these patients because the phenomena that they experience are very similar to phenomena other cancer patients experience. They just happen with a greater degree of intensity and more of these things happen to these

patients.   So, when I look at the
oncology patients and the transplant
patients I know that, based on the
treatment they have received, there is a
likelihood that they could experience
problems A through G and the likelihood
of problems A through G occurring are
percents X (whatever they may be) and
particular variables in this patient make
these problems more likely to occur than
they might in the person next door who
may have exactly the same therapy. <u>So I</u>
<u>take general information that I possess</u>   *Information*
<u>relate it to the clinical situation and I</u>   *Processing*
<u>then individualize that information to</u>
<u>this particular patient based on what I</u>
<u>know about their physiological and</u>
<u>psychological history and my reactions to</u>
<u>them and based on those two pieces of</u>
<u>information. I then dig back into my</u>
<u>practice base and look for and anticipate</u>
<u>problems</u>.

Interviewer: About when did you start
developing this skill. Interviewee: I
would say probably 1982 - nine years ago
- that I felt fairly confident with
beginning to do that but I would say that
I am so much more proficient with it now.
Then I would work harder at it, now it
comes more easily.

Interviewer: How do you think you
learned that?

Interviewee: <u>Again, I don't know how I</u>   *Information*
<u>learned, it's intuitively I know to do</u>   *Processing*
<u>this, I know to, it's like you come into</u>
<u>a situation and you just evaluate the</u>
<u>information   differently,   you   ask</u>
<u>questions   differently,   put   pieces</u>
<u>together differently. It just happened</u>
<u>one night. I don't know. One process</u>
<u>that I do think contributed to this is</u>
<u>with any clinical situation that went</u>
<u>particularly well or particularly badly,</u>
<u>I would always evaluate that in terms of</u>
<u>things that I did particularly well or I</u>

could have done differently. Those
situations were fairly significant and
important and I would save that and be
able to then apply it in a deliberate way
the next time I was in a similar
situation. So there were, I think, along
the way deliberate attempts on my part to
pay attention to outcomes a patient
experienced and to try and sort out what
contributed to that experiences.

Interviewer: How do you problem solve
and what facilitated the enhancement of
this skill for you?

Interviewee: Well, I think one of the
things that facilitates the enhancement
of my problem solving is that I don't get
excited very easily and I'm pretty calm.
I have a fair degree of confidence in the
fact that I'm an intelligent human being
and that I'm a nurse with good experience
and given those variable I should be able
to make a decision and when I problem
solve I probably do go through a problem   *Problem*
solving process of collecting data, using   *Solving*
all of my senses and then something
happens after the data collection that is
like the synthesizing of all of the   *Information*
information so that it may come out very   *Processing*
differently than the way it went in.
That process of synthesis is where the
clinical experience plays into it. After   *Experience*
that I generate a number of possible
alternative solutions and I will
prioritize those solutions but again not
in a deliberate way, I just know when I
come up with possible solutions that if I
have four that I'm going to try them all
and what I expect the outcomes to be from
each one of them and if I get an
unexpected outcome what I am going to do
with each one of them. Then I go ahead
and implement them and I get the results.
I don't talk like that. That's the
process I go through but I don't tell
people that.

Interviewer: Do you use intuition in patient situations?

Interviewee: <u>I use it all the time</u>.   *Intuition*

Interviewer: Can you relate an experience in your clinical practice when you used it?

Interviewee: <u>Yes. A lot of times I used</u>   *Intuition*
<u>it but one I can think of that just</u>
<u>happened very recently was a situation</u>
<u>where we had a patient who was status</u>
<u>post chemotherapy and at risk for</u>
<u>infection but he is on every antibiotic</u>
<u>known to man and woman and who just</u>
<u>didn't look right to me. I will not</u>
<u>settle for simply going to a physician</u>
<u>and saying he just doesn't look right</u>
<u>because I need to offer them some</u>
<u>rationale for what appears to be</u>
<u>happening with the patient. So,</u>
<u>intuitively I went in because I knew the</u>
<u>patient I knew that there was something</u>
<u>wrong with him. I hadn't seen him (it</u>
<u>was a Monday) over the week-end but when</u>
<u>I went in and talked with him I just said</u>
<u>to him something seems amiss here. And he</u>
<u>said I don't know what's going on, I just</u>
<u>don't feel good or right. So I went back</u>
<u>out and then I had to try and find hard</u>
<u>data to validate my observation that</u>
<u>intuitively something was wrong. What I</u>
<u>did find out was there had not been a</u>
<u>consistent care giver in terms of a nurse</u>
<u>or physician who had seen the patient in</u>
<u>over a period of three days who was able</u>
<u>to draw comparisons but in fact what had</u>
<u>happened is that he had a gradual</u>
<u>increase in respiratory rate, he's had a</u>
<u>gradual increase in temperature, although</u>
<u>he was not overtly febrile, that</u>
<u>basically what had happened was he had</u>
<u>developed a fairly significant pulmonary</u>
<u>problem that got him transferred down to</u>
<u>the ICU and he was intubated within two</u>
<u>hours of being there. But that was a</u>
<u>situation where I went in and intuitively</u>

knew something was wrong with him but had
I not paid attention to the information
he probably would have arrested.

Interviewer: How did you develop your
clinical skills?

Interviewee: You mean, like, my
technology skills? Oh, go out and find
people who knew how to do the things like
maybe an LPN or an older nurse, you know,
nursing assistants - anyone who knew how
to do stuff. I had a nursing assistant
who taught me how to clean a foley
catheter. I'd seek out whoever seemed to
be the most proficient at what they knew
and watch them and have them work with
me. In many cases it was not people who
had baccalaureate educations and they
were sometimes intimidated that I would
ask them to show me what to do but then
afterwards have no hesitancy to let me
know that those baccalaureate grads
didn't know much anyway. In fact I would
go out and find everyone who knew how to
do it best.

Interviewer: So you developed your
skills by seeking and watching other
people; rather than going to a procedure
manual?

Interviewee: Oh God, I've never gone to
a procedure manual in my life. I do and
always have used reference texts,
however.

Interviewer: Where you ever afraid you
were doing it wrong or learning it wrong?

Interviewee: Doing it wrong or learning
it wrong? No. In terms of inserting a
foley catheter you know text book the
right way to do it, but if you haven't
actually done it yourself then you need
to find somebody who's done it a number
of ways. If you found for example that
the technique of the person wasn't

exactly right then I'd make that
modification in my practice so that I
didn't contaminate the field but I would
find somebody who was proficient at the
mechanics of it.

Interviewer: And the same in ICU when
you were learning all those new
technologies, did you learn those the
same way?

Interviewee: In the ICU some of it was
that, in the ICU course though you had an
opportunity to practice a lot of those
skills so that was a much more controlled
environment so you weren't jeopardizing
patients. Sometimes I would just review
mentally what it was I knew most about
this and then go for it.

Interviewer: The next section deals with
the role of mentors. At any stage in
your career have you had a relationship
with a person who took a personal
interest in your career and who guided or
sponsored you?

Interviewee: I would say those were
probably the primary people, that cadre
of individuals. Going to the next one,
was anybody especially influential during
my career, <u>there are probably two people</u>   *Mentors*
<u>who are most influential. The first one</u>
<u>was my first head nurse who even now I</u>
<u>see from time to time at the university.</u>
<u>She's just a very special lady</u>. When we
do talk, she's pursuing her baccalaureate
degree now and I see her at school, I'm
in the doctoral program and she just says
"Well you keep going, I know that you're
going to do a good job on this and you
need to get that doctorate". So, she
continues to be influential to me <u>and the</u>
<u>other person who was particularly</u>   *Mentors*
<u>influential is the woman who I described</u>
<u>earlier who was my office mate, who</u>
<u>is...I think one of the reasons she is so</u>
<u>influential is that I am very bright, and</u>

that's not being conceited, but I am
very, very, bright, and she's somebody
who I have met who is brighter than me.
She is just smarter than I am and she
challenged me, and when we talk continues
to challenge me to think beyond my usual
day to day scope.

Interviewer: How did   these   people
influence your career development and
decisions?

Interviewee: I would say that if I had   *Mentors*
not had contact with the one woman who
was my first head nurse that I might very
well   have   continued   on   the   first
surgical/orthopedic   unit   and   been
confident that I knew it all and maybe
not gone on to the other areas that I
have gone on to. And also the fact that
I respected her so much and she had
confidence in me and the second woman, I
would say that it was because of her that   *Mentors*
I realized that having a master's degree
was not necessarily the end of the line
in terms of education and I had just
begun to explore what nursing was about.
I   would   say that she   was   the   primary
influence   in   my   pursuing   doctoral
education. I want to get as smart as she
is.

Interviewer: Can you recall specific
events or situations in your professional
career that encouraged or motivated you
to excel in your nursing practice and you
could describe how they were influential?

Interviewee: The things that prompted me   *Motivation*
to move on were the people not particular
events, I mean it was not some particular
political situation where I screwed up
and said, oh gee I've got to go back and
learn something different or I've got to
function differently. It was people I   *Motivation*
interacted with who motivated me.

Interviewer: At what point in your professional career did you pursue an advanced degree and what prompted this decision?

Interviewee: <u>Again it was intervention by other people, it was the head nurse I worked with in ICU who convinced me that I needed to get back in school and needed to pursue my graduate degree</u> and who went so far as to tell me that if I was going to go to graduate school that I wouldn't be able to work full time and she found a job for me working with a neurology group in a pain clinic being pain clinic coordinator on a part time basis so <u>she not only motivated me to get back into school, she put me into an expanded role which was really the first expanded practice role I had</u>. So that's what happened.

Motivation

Motivation

Interviewer: That was how many years out of school?

Interviewee: About three years.

Interviewer: How do you pursue learning, both knowledge and skills in the areas in which you have felt deficient?

Interviewee: I read and I seek out other people who have expertise in that area and pick their brains for information.

Interviewer: How did you learn the necessary information about you current clinical specialty?

Interviewee: That was through a combination of more traditional reading textbooks, combined with clinical experience. But you could not learn what I know simply by reading books because things don't happen the way they are in books.

Interviewer: How would you compare the role of experience with that of cognitive knowledge development in relation to the impact they had on your clinical advancement?

Interviewee: I would say that for me what has happened is that <u>I have had interspersed periods of cognitive knowledge development and clinical experience</u>. Where I first had my baccalaureate education and when I finished and went out and practiced for a period of time and then I went back and concentrated more on graduate level education and cognitive development and went back out and practiced and tried to take that cognitive knowledge and make some sense out of it in clinical practice. Now I'm in the process of trying to do both at the same time which is interesting but fairly productive in terms of taking knowledge derived directly from my work at school and trying to find ways to use it every day.

Experience

Interviewer: How did you develop your problem-solving and decision-making skills?

Interviewee: <u>Well, I really don't (know) except that perhaps over time, in trial and error I just became more skillful and more adept at it. And that I would engage in a problem-solving activity and not come up with the right answer and so I would not apply it then. But beyond that, I think it was experientially-based</u>.

Experience

Interviewer: What helped you to learn to set priorities for patient care?

Interviewee: <u>Well, that's absolutely experience</u>. When you first come out of school you have a certain set of notions about what your priorities are for patient care but after you've been

Experience

practicing for a period of time you realize that your priorities change on a minute to minute basis and not simply based on the patient's clinical condition but also based on other environmental factors that are influencing you. You know, I mentioned earlier that when I was in that situation after graduating where I had about 20 patients I was responsible for my priority was getting those meds into them. Well now my priority would be are they all alive and are they all breathing and who cares if the meds are to be given at like 10 and 12, they may get them all at one time if it's not going to have an adverse affect for the patient. <u>That's all based on my experiences and my observations</u>.   *Experience*

Interviewer: Can you recall advancement programs or promotional practices that influenced your professional advancement?

Interviewee: No. <u>Anything that I've done I've done because it's been internally motivated</u>.   *Institutional Incentives*

Intrinsic Motivation

Interviewer: So you didn't have any clinical ladder or anything?

Interviewee: <u>No, I never participated in a clinical ladder program</u>.   *Clinical Ladder*

Profile of Interviewees: Interfactorial Analysis

Interviewee #1

Basic Educational Preparation: BSN
Highest Degree: MS
Years in Nursing: 10
Years as CNS: 4
Clinical Area of Specialization: Gerontology
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

FACTOR # 1:   INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Able to describe patient situations thoroughly.   Looks   at   the   whole   patient.   Uses   a standardized   approach   to   assessment.   Focuses   on psychosocial needs of patients.   Identifies subtle problems. Functions independently.

Problem-Solving: Validates problems with the   patient. Solves   problems   through   case   management   and   utilizing resources.

Intuition: Uses intuition and thinks it is reliable.

FACTOR # 2:   MENTORS AND MENTORING

Had   a   mentor   immediately after   graduation   from   nursing school.   The relationship lasted four years.   The mentor was a   good   role model and was responsible for keeping her   in nursing.   The   mentor guided her to   her   current   clinical specialty.

FACTOR # 3:   MOTIVATION AND EDUCATION

Motivation: Motivated by the fear of looking unintelligent, by   working   with experts in the field, and   by   wanting   to change practice because of existing poor patient outcomes.

Education: Entered graduate school after her third year   of practice.   Graduate school reinforced   advanced   assessment skills.   Learned the necessary information about   speciality in graduate school.   Graduate school facilitated her ability to function as a clinical nurse specialist.

FACTOR # 4:   EXPERIENCE

Experience helped her learn how to be effective in taking care of patients. Participating in clinical emergencies facilitated learning. Experience provided wisdom, enhanced her skills of physical assessment, helped her learn how to anticipate patient problems, and be effective in achieving good patient outcomes.

FACTOR # 5:   INSTITUTIONAL INCENTIVES

Had none. Did not participate in a clinical ladder program.

Interviewee #2

Basic Educational Preparation: Diploma
Highest Degree: MSN
Years in Nursing: 14.5
Years as CNS: 6 Mos.
Clinical Area of Specialization: Gerontology
Has This Always Been Clinical Area: No
If Not, Why: Opportunity for autonomous advanced practice
involving direct patient interventions

FACTOR # 1: INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Functions   independently.
Prioritizes based on patient risks. Looks at the whole
patient and incorporates psychosocial needs in patient care.

Problem-Solving: Collects information, examines options and
ramifications of each option.

Intuition: Uses intuition and thinks it is based on subtle
changes in assessment data.

FACTOR # 2: MENTORS AND MENTORING

Had several mentors. One was a nurse educator who offered
support regarding decisions for pursuing advanced education.
Another mentor was a colleague who practiced in the same
meticulous manner as she did.   Another was a program
director in graduate school who offered encouragement and
was a role model. Valued mentor's advice regarding advanced
education.

FACTOR # 3: MOTIVATION AND EDUCATION

Motivation: Motivated by internal desires attributed to
personal characteristics of perfectionism and a need to
facilitate growth in other nurses.

Education: Learned assessment skills in bachelor's program
and continuing education courses. Learned information about
speciality in graduate school. Education facilitated her
advancement.

FACTOR # 4: EXPERIENCE

Experience improved assessment skills, assisted in
predicting patient outcomes, and provided the opportunity to
learn appropriate nursing interventions. Learned to look at
the patient as a holistic being and to apply physiology.
Experience assisted in identifying patient risks,
identifying priorities, and in learning how to gain a
patient's cooperation.

FACTOR # 5: INSTITUTIONAL INCENTIVES

Advanced in a clinical ladder program and felt it validated
knowledge and experience and offered a sense of success.
The clinical ladder program acknowledged expertise in
practice, both monetarily and in image.

FACTOR # 6: INTRINSIC MOTIVATION

Motivated from within to achieve and excel.

Interviewee #3

Basic Educational Preparation: ADN
Highest Degree: MSN
Years in Nursing: 9
Years as CNS: 2.5
Clinical Area of Specialization: Medical Nursing
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

FACTOR # 1: INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Prioritizes based on discriminating assessment skills. Organizes thought processes. Able to anticipate patient needs. Functions independently without need for validation.

Problem-Solving: Begins process with assessment. Applies information from past situations.

Intuition: Uses intuition and describes it as an unsettling or gut feeling about a patient.

FACTOR # 2: MENTORS AND MENTORING

Had a mentor who oriented her to a new specialty and was a role model. Mentor motivated her to succeed and pursue further opportunities.

FACTOR # 3: MOTIVATION AND EDUCATION

Motivation: Motivated by a fear of failure, curiosity, desire to gain respect and credibility from physicians, other role models, need for further knowledge, and to be considered a resource for colleagues.

Education: Learned basic assessment skills during bachelor's program and advanced assessment skills in graduate school. Education enhanced credibility for her. Graduate education provided more options for advancement.

FACTOR # 4: EXPERIENCE

Education promoted physical assessment skills and setting priorities. Helped to learn about technology. Facilitated becoming a credible leader.

FACTOR # 5:   INSTITUTIONAL INCENTIVES

Had opportunity to pursue school, work four days a week and
maintain full benefits. Advanced on a clinical ladder but
did not feel it had an impact on her achievement.

Interviewee #4

Basic Educational Preparation: Diploma
Highest Degree: MSN
Years in Nursing: 8
Years as CNS: 1.5
Clinical Area of Specialization: Critical Care Nursing
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

FACTOR # 1: INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Focuses on psychosocial aspects of patient care. Able to see total picture of patient and family needs. Uses nursing theory in practice.

Problem-Solving: Uses deductive reasoning based on current literature and research.

Intuition: Uses intuition in patient care.

FACTOR # 2: MENTORS AND MENTORING

Had a mentor in graduate school who she admired.

FACTOR # 3: MOTIVATION AND EDUCATION

Motivation: Motivated by other credible colleagues, a desire to be a good clinician, a need to practice more effectively because of scope of responsibility, by observing other poor role models, a need to learn more about disease processes, and a goal to achieve a clinical promotion.

Education: Graduate education provided knowledge to enhance growth and development. Education facilitated the development of clinical skills, advanced physiology, and research.

FACTOR # 4: EXPERIENCE

Experience in critical care helped see situations in their entirety. Learned skill of anticipating patient problems, patterns of illness and wellness, setting priorities for patient care, and clinical skills.

FACTOR # 5:   INSTITUTIONAL INCENTIVES

Flexibility allowed during graduate school. Advanced on a clinical ladder and identified that goal early in career. The clinical ladder did not help in achievement, but did offer structure and a goal.

FACTOR # 6:   INTRINSIC MOTIVATION

Motivation to excel came from within.

Interviewee #5

Basic Educational Preparation: BSN
Highest Degree: MSN
Years in Nursing: 13
Years as CNS: 8
Clinical Area of Specialization: Cardiovascular Critical Care Nursing
Has This Always Been Clinical Area: Partially
If Not, Why: Started out in general critical care, then moved into cardiovascular critical care

FACTOR # 1: INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Prioritizes based on discriminating assessment skills. Intervenes appropriately in difficult patient situations based on knowledge of pathophysiology. Uses subtle assessment skills. Uses technology to validate assessments. Interventions are patient-oriented and functions independently and directs others. Anticipates patient needs based on patient presentation.

Problem-Solving: Begins with assessments, next defines the problem, plans interventions and evaluates results. Goes through the process without thinking about the steps.

Intuition: Uses intuition and feels it is based on observable changes in the status of the patient.

FACTOR # 2: MENTORS AND MENTORING

Had several mentors who were colleagues, instructors, and supervisors. Primarily influenced her through role modeling. Her main mentor did more for her, not only in her current position, but in her development as a professional. She was very instrumental in her career being successful. She allowed her to be challenged and grow in areas where she felt comfortable and wanted to stay.

FACTOR # 3: MOTIVATION AND EDUCATION

Motivation: Motivated by role models.

Education: Education assisted in clinical decision-making and provided the motivation to remain in nursing.

FACTOR # 4: EXPERIENCE

Experience helped to learn how to anticipate patient problems and to use intuition. Helped to develop clinical skills and skill of setting priorities for patient care. Experience facilitated the application of knowledge. Experience has decreased the time required for problem-solving and decision-making.

FACTOR # 5: INSTITUTIONAL INCENTIVES

Had none.

FACTOR # 6: INTRINSIC MOTIVATION

Motivation to excel came from within.

Interviewee #6

Basic Educational Preparation: BSN
Highest Degree: MSN
Years in Nursing: 14
Years as CNS: 4
Clinical Area of Specialization: Oncology
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

FACTOR # 1:   INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Functions independently by being a patient advocate. Relies on validation and affirmation from own observations. Uses general information and relates it to the clinical situation and then individualizes the information to the particular patient situation and what is known about the physiological and psychological history. Able to anticipate problems.

Problem-Solving: Synthesizes   information,   generates alternative solutions, and prioritizes solutions.

Intuition: Uses intuition constantly.

FACTOR # 2:   MENTORS AND MENTORING

Had a mentor who was her first head nurse. This nurse encouraged her, had confidence in her, and offered career guidance. Another mentor was an office mate who challenged her intellectually and was the primary influence in her pursuing doctoral education.

FACTOR # 3:   MOTIVATION AND EDUCATION

Motivation: Motivated by mentors who were role models and an internal desire to achieve.

Education: Graduate education facilitated advancement. Education assisted in the application of knowledge to clinical practice.

FACTOR # 4: EXPERIENCE

Experience provided the environment for making comparisons, helped in learning how to anticipate patient problems, promoted opportunity to synthesize information during problem-solving and decision-making, and in setting priorities for patient care.

FACTOR # 5: INSTITUTIONAL INCENTIVES

Had none.

FACTOR # 6: INTRINSIC MOTIVATION

Motivation to excel came from within.

Interviewee #7

Basic Educational Preparation: Diploma
Highest Degree: DNSc
Years in Nursing: 12
Years as CNS: 2.5
Clinical Area of Specialization: Perinatal Nursing
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

FACTOR # 1: INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Identifies, clarifies, and diffuses problems. Focuses on psychosocial assessments. Functions independently in clinical decision-making. Anticipates patient problems based on subtle cues. Uses nursing theory and research in practice. Focuses on the patient in the context of the family environment.

Problem-Solving: Validates and reframes the problem. Then examines resources available to the patient and family to assist in solving the problem.

Intuition: Uses intuition in practice. Describes it as a culturally accepted description for a whole process of mental activities.

FACTOR # 2: MENTORS AND MENTORING

Had several mentors. The first was a nurse who offered encouragement to pursue opportunities and other experiences. The second mentor was a Dean in a baccalaureate program who assisted her in seeing the next step and encouraging her to advance. She had high expectations of her. Other mentors included faculty and a Dean who for a period of five to six years nurtured her professional identity.

FACTOR # 3: MOTIVATION AND EDUCATION

Motivation: Motivated by internal desire to expand knowledge and skills.

<u>Education</u>: Pursued graduate education after two years of practice. Graduate education helped in problem-solving. Education enhanced research skills and facilitated using those skills in clinical practice. Education helped in understanding total family dynamics. The academic environment provided support for continuing on with nursing as a career. Saw education as providing more power and authority.

FACTOR # 4:   EXPERIENCE

Experience helped in seeing common patterns among patients and families and in crisis management.

FACTOR # 5:   INSTITUTIONAL INCENTIVES

Had exposure only to advancement into management positions. Was never exposed to a clinical ladder program.

Interviewee #8

Basic Educational Preparation: Diploma
Highest Degree: MS
Years in Nursing: 13.5
Years as CNS: 10 Mos.
Clinical Area of Specialization: Trauma
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

FACTOR # 1: INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Constantly thinking about the total situation affecting the patient. Able to predict injury patterns. Assesses the whole patient. Autonomous in decision-making. Processes information very quickly. Anticipates patient problems based on the mechanism of injury. Evaluates patients by looking, feeling, talking, and integrating diagnostic findings. Approaches nursing interventions holistically and focuses on psychosocial aspects of care. Independent in resuscitation efforts. Automatic in thought processes and can combine many activities and decisions at the same time.

Problem-Solving: Examines all possible questions related to the problem.

Intuition: Uses intuition and describes it as a feeling. Based on past clinical experiences.

FACTOR # 2: MENTORS AND MENTORING

One mentor was a clinical nurse specialist who offered encouragement to pursue additional opportunities. Another mentor was an assistant head nurse who offered support and encouragement when she was in school. Another mentor was a head nurse who offered reassurance during graduate school. This head nurse was influential in her continuing on in school.

FACTOR # 3: MOTIVATION AND EDUCATION

Motivation: Motivated by a need not to feel overwhelmed and incompetent, by feeling bored and wanting more challenges and new situations, by an internal desire to achieve, and by role models.

<u>Education</u>: Has a strong passion for education. Feels a need to continually pursue knowledge through education. Learned the theoretical component necessary for practice from education as well as the necessary information for clinical specialty.

FACTOR # 4: EXPERIENCE

Experience helped in learning how to anticipate patient problems, develop clinical skills, and in setting priorities for patient care. Learned information related to clinical specialty from experience. Experience helped in learning decision-making skills. Her leadership skills evolved through experience.

FACTOR # 5: INSTITUTIONAL INCENTIVES

Never participated in advancement programs.

FACTOR # 6: INTRINSIC MOTIVATION

Motivation to succeed came from within.

Interviewee #9

Basic Educational Preparation: BSN
Highest Degree: MSN
Years in Nursing: 8
Years as CNS: 10 Mos.
Clinical Area of Specialization: Pediatrics
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

FACTOR # 1:   INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Able   to   anticipate   patient problems, interventions, and outcomes. Able to look at the whole picture and all body systems. Functions independently based   on   a   good   understanding   of   physiology   and pathophysiology.   Integrates   standards   and   research   in patient care.

Problem-Solving: Examines the whole picture.

Intuition: Uses intuition and thinks it is very valuable. Describes it as a feeling or a physical experience.   Partly based on knowledge and partly on experience.

FACTOR # 2:   MENTORS AND MENTORING

Her   mentor   was a faculty advisor who offered support and encouragement during graduate school.

FACTOR # 3:   MOTIVATION AND EDUCATION

Motivation: Motivated by a desire to always feel in control of situations, by building relationships with patients and families, by wanting to do a good job and feel competent and knowledgeable, by role models, by an internal desire to achieve, by educational conferences, and by boredom.

Education: Education helped in enhancing clinical skills and in clinical decision-making. Graduate education was necessary to practice at an advanced level.

FACTOR # 4:   EXPERIENCE

Helped to see the whole picture of patient care and the psychosocial aspects of care. Facilitated learning clinical skills. Learned to see the value in achieving expected outcomes for patients. Experience helped evaluate multiple parameters of patient care, learn to anticipate patient problems, and discover information about clinical specialty.

FACTOR # 5:   INSTITUTIONAL INCENTIVES

Advancement programs included lectures and educational conferences. Most of the incentives came from within. Exposed only to a management advancement track.

FACTOR # 6:   INTRINSIC MOTIVATION

Motivation to succeed came from within.

Interviewee #10

Basic Educational Preparation: Diploma
Highest Degree: MSN
Years in Nursing: 13
Years as CNS: 2
Clinical Area of Specialization: Diabetes
Has This Always Been Clinical Area: No
If Not, Why: Personal and professional interest and growth

FACTOR # 1: INFORMATION-PROCESSING, PROBLEM-SOLVING, INTUITION

Information-Processing: Looks at the whole patient including psychosocial needs. Functions independently. Anticipates patient problems through a complete assessment.

Problem-Solving: Begins by assessing from a variety of perspectives and involving other resources. Evaluates outcomes continuously.

Intuition: Uses intuition all the time and feels it is based on prior experiences.

FACTOR # 2: MENTORS AND MENTORING

Had a mentor who was her supervisor. She offered support in expanding her position.

FACTOR # 3: MOTIVATION AND EDUCATION

Motivation: Motivated by a desire to learn more, by an internal desire to achieve, by her competitive personality, by boredom, and by negative experiences early in career.

Education: Was constantly seeking advanced education. Felt education was a necessity for her practice and for career advancement. Started a baccalaureate program immediately following graduation from diploma program. Education facilitated clinical decision-making, enhanced self-confidence, and developed clinical skills. Needed advanced education to more effectively intervene in patient situations. Felt that graduate education was necessary for expanded practice and felt the environment facilitated her personal growth. Education helped in setting priorities for patient care.

FACTOR # 4:   EXPERIENCE

Helped to build confidence and learn how to set priorities for patient care.   Experience helped to learn clinical skills.

FACTOR # 5:   INSTITUTIONAL INCENTIVES

Committee involvement, tuition reimbursement, and merit-based evaluations.   Has never been exposed to a clinical ladder program.

FACTOR # 6:   INTRINSIC MOTIVATION

Motivation to succeed came from within.

Profile of Interviewees: Advancement From Novice-to-Expert

Interviewee #1

Basic Educational Preparation: BSN
Highest Degree: MS
Years in Nursing: 10
Years as CNS: 4
Clinical Area of Specialization: Gerontology
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

NOVICE

Practice during this time was focused solely on looking at the patient's systems rather than their function. Could not anticipate any patient needs. Focused on parts rather than the whole patient. Had no sense that the patient's illness would affect him later.

ADVANCED BEGINNER

Beginning to assume some very limited responsibility for patient outcomes.   Started to learn how to recognize a patient situation in its entirety rather than just episodes of care.

COMPETENT

Able to manage multiple patient needs at the same time and prioritize effectively.

PROFICIENT

Able to evaluate the total patient and to perform holistic care.

EXPERT

Evaluate patients quickly, in an automatic and routine fashion.   Focuses on function, rather than systems only. Concerned about how the disease is affecting the patient's function.   Focuses on assessment of psychosocial needs. Effectively identifies subtle and early problems and functions independently.

Interviewee #2

Basic Educational Preparation: Diploma
Highest Degree: MSN
Years in Nursing: 14.5
Years as CNS: 6 Mos.
Clinical Area of Specialization: Gerontology
Has This Always Been Clinical Area: No
If Not, Why: Opportunity for autonomous advanced practice
involving direct patient interventions

NOVICE

Functioned in a very dependent manner and guided primarily
by physician's orders. Was not confident of assessments,
interventions, and ramifications of interventions.   Relied
on textbook pictures of patient symptoms.

ADVANCED BEGINNER

Was beginning to feel comfortable on the unit and had a
desire to learn more. Was intervening correctly and had
some good outcomes. Felt comfortable with using the nursing
process.   Assessments were becoming more accurate   and
skillful. Exhibited more confidence. Was approaching each
patient more methodically and was challenged by   the
patients.   Generally, still unsure of practice.   Began to
realize that nursing goes beyond what is written down as a
physician order. Used more problem-solving skills, but in a
very rudimentary and rigid fashion.

COMPETENT

Practice was much more confident. Knew what to expect from
patients, the parameters to assess, and where the trouble
areas were on the majority of the patients in a very
homogenous specialty. Began to function as a preceptor for
new employees.   Had assessment skills   validated   for
accuracy.

PROFICIENT

Much more confident with assessments.   Began to broaden
perspective beyond unit and functioned as a resource.   Felt
able to handle most new situations.   Able to evaluate
physiological problems and identify any potential ones.

EXPERT

Functions independently. Has a sense of calm when new situations arise and able to deal with them in an orderly fashion. Able to prioritize based on identification of patient risk factors.

Interviewee #3

Basic Educational Preparation: ADN
Highest Degree: MSN
Years in Nursing: 9
Years as CNS: 2.5
Clinical Area of Specialization: Medical Nursing
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

NOVICE

Very curious. Evaluations of patients focused on objective signs only (i.e., color, presence of respirations). Thought processes were not organized. Unable to make distinctions between relevant and non-relevant data.

ADVANCED BEGINNER

Was feeling more comfortable with practice. Realized there was a lot more to learn about normal physiology. Thought processes were more organized. Began to assume responsibility for some limited patient outcomes. Recognized responsibilities that are within nursing practice.   Began to recognize patient situations in their entirety rather than as individual episodes. Began to understand the ramifications of symptomatology and rationale for treatment.

COMPETENT

Focused more on patient outcomes. Developed more effective assessment skills. Knowledge was respected by physicians and colleagues.

PROFICIENT

Became adept at physical assessment, especially in using the tools (i.e., stethoscope).

EXPERT

Able to discriminate among assessment findings. Thought processes are organized and focused. Assessments and judgments about findings have been validated and are accurate.   Able to anticipate patient needs and treatment interventions. Functions independently. Relies on own knowledge and skills.

Interviewee #4

Basic Educational Preparation: Diploma
Highest Degree: MSN
Years in Nursing: 8
Years as CNS: 1.5
Clinical Area of Specialization: Critical Care Nursing
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

NOVICE

Organization skills and tasks were most demanding and challenging. Unable to focus on patient outcome, physiology, or any specific nursing intervention. Did not think about nursing interventions and how they impacted on the patient. Functioned by rote practice. Clinical decisions were not accurate.

ADVANCED BEGINNER

Began to understand that nursing interventions had a direct impact on patients. Confident in organization skills. Began to pursue a clinical ladder program and involvement in unit activities, such as developing patient education materials. Expanded interests beyond daily patient assignments.

COMPETENT

Able now to understand physiology and the whole body system as a functional unit. Able to assume responsibility and accountability for patient outcomes. Functioned as a preceptor for new employees. Understood patterns of illness, wellness, and recovery through repeated experiences with many patients and reading the literature.

PROFICIENT

Able to evaluate patient symptoms by assessing the whole patient unit, including the family. Focused more on psychosocial needs of the patient.

EXPERT

Able to provide insights for patients regarding treatment decisions. Involved in hospital committees and staff education. Able to see total needs of patients and their families. Uses nursing theory in practice. Functions as a patient advocate.

Interviewee #5

Basic Educational Preparation: BSN
Highest Degree: MSN
Years in Nursing: 13
Years as CNS: 8
Clinical Area of Specialization: Cardiovascular Critical Care Nursing
Has This Always Been Clinical Area: Partially
If Not, Why: Started out in general critical care, then moved into cardiovascular critical care

NOVICE

Focused on the technology rather than evaluating and assessing the patient.   Unable to integrate all of the physiological parameters.   Nursing practice was rule-driven and required a step-by-step approach.   Unable to change focus from technology to patient status.   Very dependent in decision-making.   No validation of patient assessment data. Assessments were not integrated.

ADVANCED BEGINNER

Still following rules.   Assessments were more integrated and did not have to be in systems order.   Did not consciously think about observable data and approaches to assessments. Began to prioritize during physical examinations.

COMPETENT

Practice was much more smooth and organized.   Did not feel it necessary to consciously think about each step when approaching nursing interventions.   Able to plan activities for the day based on accurate priority-setting.   Could perform multiple tasks at one time while interacting with the patient. Developed discriminating assessment skills. Could accomplish many more things with one intervention. Began to integrate nursing practice. Began to see the bigger picture related to patient findings.

PROFICIENT

Was intrigued by subtle differences in symptomatology.   Was challenged to expand physical assessment skills.   Was becoming more automatic in evaluating and treating patient problems.   Wanted to problem-solve all aspects of patient care and to compare patients.

EXPERT

Able to accurately assess and intervene based on patient presentation. Integrates psychosocial and physiological data. Able to detect subtle physical changes. Focuses on the patient rather than any technology or equipment. Uses technology to validate assessments. Functions independently and directs others. Able to see the whole picture. Used frequently as a resource. Anticipates problems by patient presentation.

Interviewee #6

Basic Educational Preparation: BSN
Highest Degree: MSN
Years in Nursing: 14
Years as CNS: 4
Clinical Area of Specialization: Oncology
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

NOVICE

Totally fixated on technology to the exclusion of the patient. Had tunnel vision. Thought processes were focused on physician interventions only. Very dependent in nursing interventions. Was not confident during clinical decision-making. Unable to problem-solve effectively.

ADVANCED BEGINNER

Still lacked confidence. Moved to a critical care unit and was again fixated on and intimidated by the new technology, but was able to integrate the technology into patient care because of prior experiences.

COMPETENT

Very comfortable taking care of any patient in a critical care setting and was very effective almost immediately. Involved the patient and family in planning.

PROFICIENT

Did not see nursing practice in "chunks" but rather more complete and whole.

EXPERT

Constantly questioning aspects of patient care that other people usually do not. Functions independently as a patient advocate. Nursing interventions are automatic in nature. Does not need validation from others, but rather obtains it from own observations. Anticipates patient problems by relating general information to the clinical situation and then individualizing the information to the patient based on physiological and psychological data.

Interviewee #7

Basic Educational Preparation: Diploma
Highest Degree: DNSc
Years in Nursing: 12
Years as CNS: 2.5
Clinical Area of Specialization: Perinatal Nursing
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

NOVICE

Functioned by routines and structure. Delivered functional nursing care. Unable to identify rational for situations. Relied on rules but lacked in the mental map that assists in anticipating patient problems. Was not confident in nursing interventions. Focused on procedures and technology. Contributed to aspects of patient outcomes. Very limited with problem-solving skills.

ADVANCED BEGINNER

Felt more self confident, but also humble because there was so much more to know. Had mastered the technology and procedural aspects of patient care. Began to integrate the family in nursing practice.

COMPETENT

Organization skills were perfected. Able to set long-term goals for the patient and family. Assumed responsibility for patient and family outcomes.

PROFICIENT

Able to see the bigger picture of how the patient is integrated into the family constellation.

EXPERT

Uses advanced physical assessment skills to evaluate physiological and psychological status. Approaches nursing interventions by setting patient objectives. Independent in clinical decision-making. Can identify subtle physiological changes in patient status and anticipate problems. Incorporates theory and research into practice.

Interviewee #8

Basic Educational Preparation: Diploma
Highest Degree: MS
Years in Nursing: 13.5
Years as CNS: 10 Mos.
Clinical Area of Specialization: Trauma
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

NOVICE

Was overwhelmed by the technical aspects of patient care. Practice was very technically-oriented. Relied on objective data and technology to evaluate patient status. Could not interpret diagnostic findings. Focused totally on the technology without assessing the patient. Very dependent in decision-making. Lacked self-confidence. Committed to getting the tasks completed. Psychosocial aspects of family needs were overwhelming. Did not problem-solve and participate in planning for patient care.

ADVANCED BEGINNER

More confident but still relied on technology rather than assessing the patient. Still very task-oriented.

COMPETENT

Able to understand the physiological data and treat the symptoms. Evaluated patients now by assessment rather than relying solely on the technology. Unable still to understand the pathophysiology.

PROFICIENT

Began to learn leadership skills. Acted as a resource for other staff. Became involved in staff education. Able to relate pathophysiology to clinical manifestations. Was usually the nurse assigned to the most critically ill patient. Actively participated in patient and family educational programs.

EXPERT

Oriented by mechanism of injury and relates clinical manifestations to injury process. Anticipates and predicts injuries and injury patterns based on the trauma and the accident. Looks at the whole patient and family related to the impact the injury has on both. Autonomous in decision-making, but relies on resources for further information. Evaluates outcomes continuously. Processes information quickly and automatically. Anticipates problems and complications based on mechanism of injury. Able to integrate all data into nursing practice. Approaches nursing interventions holistically.

Interviewee #9

Basic Educational Preparation: BSN
Highest Degree: MSN
Years in Nursing: 8
Years as CNS: 10 Mos.
Clinical Area of Specialization: Pediatrics
Has This Always Been Clinical Area: Yes
If Not, Why: N/A

NOVICE

Used objective data, primarily vital signs, to evaluate condition of patients.   Completely task-oriented and structured in approach to nursing interventions.   Functioned dependently.   Unable to process any physiology or pathophysiology because of focus on tasks.

ADVANCED BEGINNER

Very fearful of making mistakes.   Felt very comfortable with the technology.

COMPETENT

Felt very comfortable with intervening in a wide variety of patient situations.   Had a great deal of self-confidence which was attributed to years of experience.

PROFICIENT

Had the self-confidence to take risks and branch out to pursue new experiences.   Had the confidence to intervene in any patient situation and the knowledge of appropriate resources.

EXPERT

Good knowledge of pathophysiology and expected outcomes. Able to anticipate patient complications, interventions, rationales, and outcomes based on observed clinical manifestations and years of experience.   Able to look at the whole picture, not just one aspect of patient care. Intervenes quickly and automatically based on a thorough knowledge of pathophysiology and expected outcomes. Functions independently in clinical decision-making. Integrates standards of care and research into practice.

Interviewee #10

Basic Educational Preparation: Diploma
Highest Degree: MSN
Years in Nursing: 13
Years as CNS: 2
Clinical Area of Specialization: Diabetes
Has This Always Been Clinical Area: No
If Not, Why: Personal and professional interest and growth

NOVICE

Used very basic assessment skills, primarily objective data
to evaluate patients. Task-oriented in approach to nursing
interventions. Unable to look at the whole patient in terms
of needs. Practiced functional nursing. Very dependent in
approaches to nursing interventions. Anxious about making
mistakes. Focus was to complete tasks in allotted time and
make the patients comfortable.

ADVANCED BEGINNER

Not confident in nursing practice. Still fearful of making
mistakes and harming a patient. Loved working with people.
Focused on patient safety. Still very dependent and timid
in approaches to nursing interventions. Had a great desire
to learn more about how to handle situations with patients,
families, physicians, and the stress of the job, and did so
by observing other practitioners.

COMPETENT

Completed baccalaureate degree so was able to integrate more
theory into practice. Still felt lacking in adequate
experience to feel totally confident and independent in
decision-making. Still had a strong desire to learn more
from colleagues.

PROFICIENT

Had desire to seek out new areas of clinical nursing.
Had much more confidence and performed more independently.
Functioned as a patient advocate by examining the patient
holistically. Began to mentor less experienced nurses.
Still had a strong desire to learn more. Took a very
progressive role in patient care and functioned autonomously
in writing nursing orders. Functioned as a primary nurse.
Was utilized as a unit resource.

EXPERT

Examines the patient in detail as a total unit, including the family. Includes physiological and psychosocial needs in planning nursing interventions. Functions independently with a wide base of knowledge and experience. Masterful in problem-solving. Anticipates patient problems and complications utilizing an extensive and thorough assessment and past experiences. Utilizes knowledge and experience to prioritize patient needs.

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