THE USE OF INTUITION BY EXPERT CLINICAL NURSING TEACHERS IN THE ASSESSMENT OF THE CLINICAL PERFORMANCE OF NURSING STUDENTS

BY

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A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfilment of the Requirements
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ABSTRACT

In this qualitative, exploratory study, the use of intuition by expert clinical nursing teachers in the assessment of the clinical performance of nursing students was explored. The Dreyfus and Dreyfus (1986) model entitled: ***Six Key Aspects of Intuitive Judgment (Dreyfus & Dreyfus, 1986)*** was used as a conceptual framework to guide the content analysis of the data resulting from semi-structured, in-depth interviews with nine expert clinical nursing teachers of undergraduate nursing students. The findings supported that intuition is used by expert clinical nursing teachers in their assessment of nursing student clinical performance. The findings also supported the Dreyfus' Model as an appropriate framework for the examination of a portion of the study data.

Seven themes, associated with the nature of the intuitive experiences of clinical nursing teachers in relation to nursing student clinical performance, emerged. These were: a) experiencing intuition, b) analyzing and interpreting intuition, c) using intuition, d) valuing intuition, e) differentiating the intuitive experiences of novice and expert clinical nursing teachers, f) profiling the intuitive processing of the expert clinical nursing teacher, and g) reflecting on intuition.

The nine expert clinical nursing teachers in the

study had experienced many intuitive occurrences, of both a positive and negative nature, in relation to students' clinical performance. Further, the intuitive experiences of a negative nature were more readily recalled by the majority of participants. Participants maintained that caring in students was assessed by intuitive means. Participants valued their intuitive experiences, and believed in their accuracy. However, they reasoned that, in most situations, validation by objective data was necessary to make intuited data useable in the analytical world.

The differences between novice and expert clinical teaching were described in participants' narratives. As well, evidence is presented to support that novice clinical teachers do have intuitive experiences related to nursing student clinical performance. The intuitive experiences of novices, however, are qualitatively different than those of the expert. A prototype of the intuitive processing of the expert clinical nursing teacher is suggested.

Recommendations regarding the development and use of intuition in clinical teaching, and further research on intuition in nursing are offered.

DEDICATION

To my beloved husband Carl, whose unconditional love and acceptance is a boon to my soul.

To my dear son Jason, whose sense of humour and insight into human behavior keeps me focused.

To my darling daughter Jessica, who always knows when I need a kiss and a hug.

To my precious parents, Alice and Guy McClelland, who taught me the meaning of love, family and integrity.

To my best friend, Leslie Walsh, whose steadfast friendship is a neverending source of support and strength.

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Jean Burrows, Acting Dean, Applied Sciences, Red River College - has been, and always will be, my greatest mentor. Her futuristic, sensible and rational beliefs about the profession of nursing, and where it is headed, have been an inspiration to me. She has been a wonderful role model, and my admiration for her leadership abilities is immense. She believes strongly in continuing professional education for her faculty, and has done whatever was necessary to put that belief into practice. She has been a great employer, and a good friend. Thank you, Jean, for everything.

PERSPECTIVES ON INTUITION

"There are two equally dangerous extremes - to shut reason out and to let nothing else in."

... Pascal Pensees, Mathematician, 1670

"Intuition is like cosmic fishing. First you feel the nibble, then you hook the fish."

... Buckminister Fuller, 20th Century Architect and Philosopher

"Pure logical thinking cannot yield us any knowledge of the empirical world; all knowledge of reality starts from experience and ends in it. Propositions arrived at by purely logical means are completely empty of reality. ... The only real valuable thing is intuition."

... Albert Einstein, Scientist

"The dilemma of any statesman is that he can never be certain about the probable course of events. In reaching a decision he must inevitably act on the basis of intuition that is inherently unprovable."

... Henry Kissinger, Former American Secretary of State

"It is fashionable stupidity to regard everything one cannot explain as fraud."

... Carl Gustav Jung, Pioneer Psychologist

"... intuitive humans ... have been and still are carrying civilization on their shoulders."

... Daniel Cappon, Modern Psychiatrist and Writer

"I've talked with and studied the most successful traders in the securities business to find out how they do it, and it comes down to this: They get a feeling and they act on it. All the statistics in the world, and all the so-called inside information, isn't worth a damn against a gut feeling."

... Charles Srebnik, Wall Street Investment Specialist

"It's hard to explain. It's feeling punches before they come...like you can see a radar wave in the air."

... Mohammad Ali, Former World Heavyweight Boxing Champion

"When I am, as it were, completely myself, entirely alone, and of good cheer - say travelling in a carriage, or walking after a good meal, or during the night when I cannot sleep; it is on such occasions that ideas flow best and most abundantly. Whence and how they come, I know not; nor can I force them."

... Wolfgang Amadeus Mozart, Musical Composer

"I make all my decisions on intuition. I throw a spear into the darkness: that is intuition. Then I must throw an army into the darkness to find the spear: that is intellect."

... Ingmar Bergman, Renowned Filmmaker

"Intuition will tell the thinking mind where to look next."

... Dr. Jonas Salk, Physician and Discoverer of the Polio Vaccine

(REFERENCES FOR QUOTES: PERSPECTIVES ON INTUITION - APPENDIX A)

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CHAPTER I

INTRODUCTION

My interest in intuition, in the context of the clinical assessment of nursing students, began with a personal experience in the early 1980s. This clinical illustration stands out as an 'exemplar', as defined by Benner and associates (1991), that made me re-think my beliefs about assessment of nursing student performance in the clinical setting.

As an experienced clinical nursing instructor in a pediatric setting, I was responsible for supervising and evaluating the clinical performance of eight nursing students. On this particular day, I had a new group of students, one of whom had had difficulties in clinical practice in other areas in the program. I was aware of her history as a 'weak' student, and was prepared for the fact that she would need more assistance and supervision in the pediatric setting. This student had confided in me that she was worried about the implications of her poor performance to date, and was nervous about working with children. I spent some time helping her relax, and assuring her that I would give her as much guidance as I could. However, I also pointed out that she would need to perform at a safe, competent level by the time she completed the pediatric rotation.

The incident that had such a profound affect on me began innocuously. The student was caring for a four-week-old baby who was on strict fluid restriction. I cannot remember what was wrong with the infant, but I do remember the fluid restriction, because it was critical to the focus of this story. The infant was also on Intravenous (IV) medication, and buretrols were still the mode of choice on this unit for delivering such medication, even to infants.

When the time came to prepare and deliver this infant's IV medication, the student was very anxious. She commented a number of times about having had an experience in another area with an IV running dry, and how traumatic that had been for her. Since I could see that the thought of this IV running dry was a major issue for the student, I spent considerable time discussing with her the more serious concern, in this situation, of the infant receiving too much parenteral fluid. I emphasized that the IV medication was to be placed in the minimum, safe amount of IV solution for a four-week-old infant. I further emphasized that, upon completion of the delivery of the medication by IV, the tubing was to be flushed with the minimum, safe amount of flush IV. Upon completion of the medication delivery and flush, the IV was to be set at a TKO (To Keep Open) rate of 10 mL./hr. and maintained diligently. We discussed at length the significance of monitoring the IV to ensure that no excess fluid was infused, because the implications of

that occurring were very serious for this infant. When she commented about the possibility of the IV running dry, I remember clearly telling her that it would be better for it to run dry, than for the infant to receive too much solution.

She prepared and gave the IV medication and flush safely, under my supervision, and correctly re-set the flowrate at a TKO rate of 10mL./hr. Before leaving to assist another student, I re-emphasized the significance of not allowing excess fluid to infuse. The student confidently re-iterated that she understood the significance of this, and would be diligent in her monitoring of the IV.

I recall leaving the room with vague feelings of uneasiness, but not knowing why I felt this way. I moved on to assist another student with a complicated dressing which took some time, but the uneasiness never left me. In fact it increased, and I began to become anxious about getting back to the first student's room to ascertain the situation with the infant's IV. By the time I was able to follow up on my 'intuition', I felt a strong sense of urgency to get back to that room.

When I finally returned to the room, I discovered that the student had filled the infant's buretrol with 100 mL. of IV solution, and left the room. When I located her and expressed my distress about her deliberately endangering this infant by ignoring the clear guidelines she

had been given about safe levels of fluid infusion, her comment was that she had to leave the room for awhile, and was afraid the IV would run dry.

To this day, I do not know what gave me the feeling of uneasiness that expanded to full blown anxiety, about this situation, and this student. It would be easy to say it was because she had expressed worry about the IV running dry. However, there had been many previous circumstances in which students had expressed concern about IVs running dry. This student had been given clear, adequate information about the ramifications of too much fluid for this infant, and had given every verbal and non-verbal indication that she understood the significance of this information, and would monitor the IV carefully. I am confident that she gave me no overt reason to doubt that she would care for this baby appropriately.

What was it that triggered this intuitive concern on my part? I still don't know. I do know, however, that something in that circumstance, with that student, alerted my intuition that the situation was not safe. I have felt since that time, that intuition often plays a part in the clinical assessment of students, and have been curious about the intuitive experiences of other clinical teachers.

Statement of the Problem/Need for the Study

Clinical performance assessment is a requirement of all practice-based professions (Infante, 1975; Lenburg, 1979). In fact, arguments made in the research literature claim that educators of professionals are accountable to the public for ensuring that graduates are competent to practice (Lenburg, 1979). Thus, accurate assessment of student practical performance is a critical role for the teacher. How to perform such assessment adequately and fairly is controversial in most professions, including nursing.

Nursing has embraced analytical thinking, deductive reasoning and objective assessment. Subjective, intuitive opinions of student clinical performance are unacceptable. Yet there is a preponderance of literature that clearly shows experts, both in nursing and other fields, ***do*** use subjective, intuitive means for acquiring accurate data about situations and circumstances related to their area of expertise (Benner & Tanner, 1987; Benner & Wrubel, 1982; Bosque, 1995; Brykczynski, 1989; Burnard, 1989; Connors, 1995; Cooper, 1994; Davidhizar, 1991; Dreyfus & Dreyfus, 1986; Easen & Wilcockson, 1996; Gillan, 1993; Gruber, 1989; Hackleman, 1984; Harlowe, 1994; Hellner & Norberg, 1994; Hempsall, 1996; Leners, 1990, 1993; Magistro, 1989; Morse, Miles, Clark, & Doberneck, 1994; Pyles & Stern, 1983; Renz, 1993; Rew, 1987, 1990, 1991; Schraeder &

Fischer, 1987; Tanner, 1993; Umiker, 1989a; Young, 1987; Zerwekh, 1991).

On the basis of the quantity of literature supporting the presence of subjective, intuitive data collection in expert professional practice, it would be logical to infer that it is an element of the practice of expert clinical nursing teachers. Only two studies noted in the literature actually examine expert clinical teaching in nursing, and both support intuition as an element of that expertise (Kramer, 1996; Scanlan, 1996).

There is, however, no research available that examines the use of intuition by expert clinical nursing teachers in the assessment of nursing student performance in the clinical setting. Scanlan (1996) notes that "intuition played an important role with experts in determining whether the student was capable of functioning on his/her own" (p. 169). However, the focus of Scanlan's study was not the in depth examination of intuition as an element of expert clinical teaching. Cooper (1994) talks about using intuition in assessing student performance but her focus is philosophical and broad, and she does not relate it to expert clinical teaching. An exploratory study into intuition use in this context would be an appropriate start to examining this provocative ability in a new context.

Purpose of the Study

The purpose of this study was to examine the use of intuition by expert clinical nursing teachers in the assessment of the clinical performance of nursing students. The data gathered through the research questions which follow, were expected to add to the general body of knowledge on intuition, expert clinical teaching and the assessment of nursing students.

Research Questions

The research questions which this study proposed to address were:

1. What is the extent of the use of intuition by expert clinical nursing teachers in their assessment of the clinical performance of nursing students?

2. What is the nature of the intuitive experiences expert clinical nursing teachers have in relation to the assessment of the clinical performance of nursing students?

3. What value do expert clinical nursing teachers place on their intuitive experiences in relation to the assessment of the clinical performance of nursing students?

Assumptions of the Study

Four assumptions that underlay this study were:

1. There are expert clinical nursing teachers who are willing to discuss the nature of their experiences with the assessment of the clinical performance of nursing students.

2. Expert clinical nursing teachers can recognize intuitive experiences they have had in assessing the clinical performance of nursing students.

3. Expert clinical nursing teachers can remember intuitive experiences they have had in assessing the clinical performance of nursing students.

4. Expert clinical nursing teachers can articulate, in a meaningful manner, intuitive experiences they have had in assessing the clinical performance of nursing students.

Definition of Terms

These terms are defined for purposes of this study, and supported by a broad range of literature discussed in Chapter II.

1. **Intuition** -

Intuition is knowledge that is:

a) perceived as a whole.

b) perceived immediately.

c) processed at a non-conscious level.

d) arrived at by non-linear, non-analytic thought processes.

Intuition is also the process of acquiring such knowledge.

2. **Linear/Analytical reasoning** -

Linear/analytical reasoning is the process of acquiring knowledge:

a) in distinct steps.

b) by examining binary relationships.

c) rationally.

d) consciously.

e) empirically.

3. **Expertise** -

The thinking and performance of an individual who operates within the highest level of capability of his/her domain or discipline.

4. **Expert clinical nursing teacher -**

A clinical nursing teacher who:

a) has a minimum of five years experience as a clinical nursing teacher.

b) is identified as an expert clinical nursing teacher by his/her superiors.

c) is currently a clinical nursing teacher, or has not been absent from active clinical teaching as a component of his/her professional responsibilities for more than one year.

5. **Assessment of nursing student clinical performance -**

The data gathering activity which guides the teaching of nursing students in clinical practice, and forms the basis for evaluating nursing student clinical performance.

The purpose of this research is to meaningfully articulate the facets of intuition that are components of clinical nursing education. The results of the study will hopefully encourage ideas, questions, and potential comparisons and contrasts for future quantitative, and structured qualitative research, on intuition in the context of clinical nursing education.

CHAPTER II

REVIEW OF THE LITERATURE

The comprehensive literature review that follows is separated into six sections. In Part One, the concept of intuition, including its relationship to linear reasoning, diagnostic reasoning, heuristics, and tacit knowledge is examined. In Part Two, the relationship of intuition to other fields and areas of study, including nursing, is discussed. A description of a variety of instruments available for measuring intuition is provided in Part Three. In Part Four, an examination of the concept of expertise is offered. The relationship between intuition and expertise is examined in Part Five. Finally, in Part Six, the selection of the conceptual framework for the study is discussed.

PART ONE - INTUITION: THE CONCEPT

The Nature of Intuition

The literature does not provide a generic, all-encompassing definition of intuition. It does, however, provide repeated reference to certain attributes that, drawn together, offer a workable conglomerate definition. The four critical features that are repeatedly ascribed to intuition are: knowledge presented as a whole; knowledge

perceived immediately; knowledge processed at a non-conscious level; and, knowledge acquired through non-linear, non-analytical thought processes. A description of each of these critical attributes follows:

1. **Knowledge presented as a whole** - This is a cardinal component of intuition, identified in descriptions of the phenomenon in a multitude of contexts. The literature identifies intuition as a process of synthesis, with a gestalt cognitive presentation (Bastick, 1982; Brykczynski, 1989; Cappon, 1989, 1993; Davidhizar, 1991; Easen & Wilcockson, 1996; Fisher, 1981; Goldberg, 1983; Jennings, 1990; Kelly, 1995; McCormack, 1992; Miller, 1989; Morse et al., 1994; Radwin, 1990; Rew, 1986, 1989; Schraeder & Fischer, 1986; Schoeder, 1991).

2. **Knowledge perceived immediately** - This aspect of intuition is related to its holistic nature. Intuition is knowledge perceived immediately, in contrast to knowledge perceived cumulatively, over a span of time (Agyakwa, 1988; Bastick, 1982; Cappon, 1989; Easen & Wilcockson, 1996; Gerosa, 1993; Goldberg, 1983; McCormack, 1992; Moch, 1990; Morse et al., 1994; Noddings & Shore, 1984; Radwin, 1990; Rew, 1986; Schraeder & Fischer, 1986; Schoeder, 1991; Stewart, 1988; Westcott, 1968b).

3. **Knowledge processed at a non-conscious level** - The literature identifies four terms to describe this attribute: unconscious, subconscious, preconscious and subliminal (Agan, 1987; Bastick, 1982; Benner & Wrubel, 1982; Bunge, 1962; Cappon 1989, 1993; Chinen, Spielvogel, & Farrell, 1985; Dixon, 1981; Easen & Wilcockson, 1996; Fisher, 1981; Gerosa, 1993; Goldberg, 1983; Kenny, 1994; Leners, 1990, 1993; Magistro, 1989; McCormack, 1992; Morse et al., 1994; Radwin, 1990; Rew, 1986; Rosenblatt & Thickstun, 1994; Schraeder & Fischer, 1986; Simonton, 1980)

4. **Knowledge acquired through non-linear, non-analytical thought processes** - Although the literature differs in its explanations as to exactly what process is involved in acquiring intuitive knowledge, there is general agreement that it is not a linear, analytical one (Bastick, 1982; Benner & Tanner, 1987; Bunge, 1962; Cappon, 1989, 1993; Dixon, 1981; Ennamorato, 1986; Gerosa, 1993; McCormack, 1992; Moch, 1990; Morse et al., 1994; Radwin, 1990; Rew, 1986; Schroeder, 1991; Westcott, 1968b).

In addition to these four critical attributes, several other characteristics are commonly linked to intuitive experiences including: sensations; synchronicity; pattern recognition; non-verbal nature; reflection and incubation; subtle cueing; common sense understanding; rapid, efficient processing; deep grasp. The elaboration of

each of these features follows:

5. **Sensations** - Many authors describe emotional and sensate aspects to intuition. The words used usually relate to sight, hearing, and visceral and tactile feeling. Words and phrases like:

- a red flag
- clairvoyant
- picture, the big picture
- a light bulb going on
- flashdots coming together
- a bullet hitting the target
- insight
- illumination
- pattern recognition
- missing pieces
- mosaic
- metaphor
- representation
- symbolic

emphasize the visual nature of intuition. Cappon (1993) theorizes that intuition's origins are in culture-free, pre-verbal, primitive thinking and are, therefore, primarily visual. As well, Cappon suggests that it is the visual nature of intuition that promotes its use in dreams, imagination and fantasy, and allows it to be playful. Furthermore, vision is the fastest sense, and can accommodate more information than all the other senses combined (p. 45). Bastick (1982) believes that intuition often possesses the property of **hypnogogic reverie**: a chaotic association of images and ideas that usually occurs in a relaxed, near sleep state (p. 341).

An auditory aspect to intuition is reflected in words and phrases like:

- antennae
- telepathy
- attunement
- cues
- warning bells
- inner voice
- tuning in
- alarm
- voice in my head
- satellite dish picking up signals
- discernment

In contrast, words and phrases like:

- grasp
- incubation
- sensitivity
- acuteness
- raw
- catalytic
- gut feeling
- emotional
- hunches
- euphoric understanding
- goosebumps
- cold feeling
- acumen
- tightness
- alertness
- uneasiness
- arousal
- doesn't feel right

attest to the visceral, tactile and emotional experiences associated with intuitive knowing. Consequently, it is common to hear intuition described as a 'sixth sense' (Brykczynski, 1989; Burnard, 1989; Gillan, 1992; Rew, 1986, 1990).

6. **Synchronicity** - Several authors view intuition as a process that sychronizes missing links and serendipitous pieces of data. Burnard (1989) and Slater (1992) believe that intuition often gives meaning to what, on the surface, appears to be coincidence. Cappon (1989), Chinen et al. (1985) and Zerwekh (1991) associate this synchronicity with intuition's ability to fill in the missing links in a recognizable pattern. Goldberg (1983) goes further, and contends that intuition leaps chasms, and makes logical connections from seemingly illogical ones. Schraeder and Fischer (1986) and Sullivan (1992) both emphasize the intuiter's astute ability to make connections and links between and among data.

7. **Pattern recognition** - The literature often describes intuition as a process of pattern recognition and matching (Bastick, 1982; Brykczynski. 1989; Goldberg, 1983; Gruber, 1989; Rosenblatt & Thickstun, 1994; Schroeder, 1991; Simonton, 1980). Arnheim (cited in Stewart, 1988) believes that intuition recognizes and perceives the overall structure of configurations (p. 175). Leners (1993) suggests that intuition finds the elusive patterns that linear reasoning misses. Pattern recognition is also associated with experience and expertise. The relationship between intuition and expertise, to be discussed later in this chapter, may begin with pattern recognition.

8. **Non-verbal nature** - The nature of intuition is seen by many as non-verbal (Bastick, 1982; Cappon, 1989, 1993; Kenny, 1994; Renz, 1993; Stewart, 1988). The support for intuition being a non-verbal phenomenon is based on the belief that it is an older primordial skill, essential to survival in the time before human language (Cappon, 1993; Fisher, 1981; Noddings & Shore, 1984). Furthermore, Kenny (1994) contends that the essence of an intuitive experience is often lost in the translation to words.

9. **Reflection and incubation** - Several authors associate reflective and incubated thinking with the non-conscious nature of intuition, and the complexity of relationships being examined in the phenomenon (Benner & Wrubel, 1982; Bunge, 1962; Burden, 1957; Cappon, 1989, 1993; Chinen et al., 1985; Fisher, 1981; Goldberg, 1983; Jennings, 1990; Leners, 1990, 1993; McCormack, 1992; Noddings & Shore, 1984; Rew, 1987; Rose & Parker, 1994; Stewart, 1998).

10. **Subtle cueing** - Because the nature of intuition is non-linear, the literature often suggests that it connects to subtle, covert cues (Bastick, 1982; Burden, 1957; Davidhizar, 1991; Gillan 1992; Hackleman, 1984; Leners, 1990, 1993; Schraeder & Fischer, 1986; Zerwekh, 1991).

11. **Common sense understanding** - This aspect of intuition is noted by several authors and is especially associated with

intuition in situations with which the intuiter has had previous experience (Bastick, 1982; Bunge, 1962; Benner & Tanner, 1987; Easen & Wilcockson, 1996).

12. **Rapid, efficient processing** - The ability to quickly zero in on salient data is noted as a characteristic of intuition in some of the literature (Agyakwa, 1988; Bastick, 1982; Blomquist, 1985; Bunge, 1962; Cappon, 1989, 1993; Manion, 1990; Milne, 1992; Schroeder, 1991; Westcott, 1968b). According to some authors, this efficiency of processing makes intuition a higher order cognitive skill than the laborious, analytical processing associated with linear thinking (Burden, 1957; Goldberg, 1983; Sternberg & Horvath, 1995).

13. **Deep grasp** - Many authors support that the use of intuition produces a deep grasp of the situations, circumstances and solutions associated with the complex problems it is most amenable to solving (Benner & Tanner, 1987; Burden, 1957; Easen & Wilcockson, 1996; Goldberg, 1983; Kelly, 1995; Kenny, 1994; Leners, 1990, 1993; Stewart, 1988).

There are other properties occasionally associated with intuition in the literature. These sporadically associated aspects are often the perspective of a particular author, or associated with a more ethereal perception of

intuition than is meant to be used in this study. Some of these less common or more aesthetic characteristics applied to intuition are identified in later sections of this literature review. Nonetheless, the nine characteristics cited above, four of which the literature supports as critical to intuition, clearly show that the phenomenon is a complex process of thought synthesis.

The General Process of Intuitive Thinking

A composite of the general process of intuitive thinking can be gleaned from key pieces of literature. This composite purports that intuition has three discreet general steps. These are:

First step - Tuning in to a situation, or problem, amenable to intuitive thinking.

Second step - Non-conscious, incubated processing of the perceived data. This processing may include cognitive processes such as sorting, discriminating, checking, jumping, matching, linking, merging, connecting, synchronizing, and globalizing until a holistic thought or solution is reached.

Third step - Elevating the intuited thought or solution to conscious awareness, and articulating it in the elevated state (Bobb, Halm, Riggs, & Scordo, 1990; Cappon, 1990,

1993; Chinen et al., 1985; Fisher, 1981; Hunt, 1982; Leners, 1990, 1993; Norris & Achilles, 1988; Rosenblatt & Thicksun, 1994).

The Nature of Linear, Analytic Thinking

Bastick (1982) describes linear reasoning as a process involving the examination of relationships, two elements at a time, in a step-by-step manner. Linear reasoning is primarily deductive. It is a systematic, conscious, rational and intentional activity designed to produce a selective response (Norris & Achilles, 1988). Simonton (1991) states that linear reasoning denotes syntactical relationships, and is best for learning deterministic relationships and conjunctive concepts.

Intuitive Reasoning and Linear Reasoning: What is their Relationship?

The literature makes several points about the roles of intuitive and analytical reasoning. Several authors believe that analytical reasoning is self-limiting (Agan, 1987; Goldberg, 1983; Norris & Achilles, 1988; Umiker, 1989a). Agyakwa (1988) suggests that without intuitive knowledge some empirical knowledge would be impossible to know (p. 167). Intuitive reasoning, according to Bastick (1982), is continuous, simultaneous and multirelational, while analytical reasoning is discrete,

consecutive and binary (p. 52-53). Throughout the literature, however, there are two recurring themes regarding the relationship between intuitive and analytical thinking.

The first recurring theme is that ***intuitive and linear reasoning complement each other*** (Blomquist, 1985; Burnard, 1989; Forker & Billings, 1989; Goldberg, 1983; Milne, 1992; Paul & Heaslip, 1995). Cappon (1989, 1993) believes that science and intuition interact meaningfully. He further contends that linear reasoning must be complemented by lateral reasoning, and logic must be complemented by insight and wisdom. Doheny (1990) states that experts believe the best of both intuitive and analytical reasoning is brought forth when the two processes work together. These views are echoed by Gearhart and Young (1990) who argue that the highest cognitive achievements may be made with integrated brain work.

The second recurring theme is that ***linear reasoning can be used to validate intuitive reasoning*** (Ashworth, 1990; Blomquist, 1985; Bobb et al., 1990; Bourne, 1993; Brykczyski, 1989; Easen & Wilcockson, 1996; Forker & Billings, 1989; Kenny, 1994; McCormack, 1992; Milne, 1992; Reilly & Oermann, 1992; Rew, 1986, 1987, 1988b). Bunge (1962) points out that intuition often produces a 'raw' result, which linear reasoning can refine. Also, the literature endorses the belief that both intuitive and

linear cognitive skills have a place in human knowledge acquisition. Goldberg (1983) colloquially asserts that, choosing one mode of reasoning exclusively, causes one to "tune in mono to a stereo world"(p.27). 'Tuning in mono to a stereo world' in western society is a trait exclusively attributed to linear, analytic thinkers.

Intuition and Diagnostic Reasoning

The work of Christine Tanner (1989, 1993), one of the foremost researchers in clinical judgment in nursing, supports that intuition is a component of the diagnostic reasoning process. Kingten-Andrews (1991) suggests that intuition is likely a component of critical thinking. A study by Westfall, Tanner, Putzier and Padrick (1986) on diagnostic reasoning showed that experienced nurses made more complex diagnostic hypotheses, suggesting a deeper grasp of the situation.

Intuition and Heuristics

Those who are unable to accept intuition as a form of knowledge acquisition distinct from linear reasoning, often support the premise that intuition is heuristic reasoning. Heuristics is "a rapid form of cognitive reasoning...used under conditions of uncertainty or the unavailability or indeterminacy of important information" (Farrington, 1993, p. 231). Heuristic reasoning allows for

'short cuts', so that complex judgements become more cognitively manageable. In the early 1970s, work on heuristics by two Israeli psychologists, Amos Tversky and Daniel Kahneman, supplied a set of principles for guiding and examining decision-making in imprecise circumstances. These principles are described as follows:

1. **Representative heuristic** - the degree to which one thing represents or resembles another (Cioffi & Markham, 1997). This heuristic allows for categorization, and the recognition of similarities to known situations.

2. **Availability heuristic** - the ease with which a specific instance similar to the one under question is elicited from memory, or imaginable (Tversky & Kahneman, 1973). This principle supports the process of assigning a higher degree of likelihood to a more easily recalled circumstance.

3. **Adjustment and anchoring heuristic** - the tendency to make judgments by having a base anchor, and then adjusting the anchor as new information is added (Tversky & Kahneman, 1973).

4. **Simulation heuristic** - the construction of hypothetical scenarios which produce potential outcomes (Kahneman & Tversky, 1990). The various potential outcomes can be examined for likelihood using other heuristic principles.

In addition, Ajzen (1977) suggested the:

5. **Causality heuristic** - the degree to which a judgement is based on the presence or absence of a perceived causal relationship.

Heuristic principles are designed to produce a linear cognitive predictability, or a degree of probability in decision-making. The appeal of defining intuition as high-speed heuristics is strong. However, even its most ardent supporters agree that there are built in biases to heuristic processing, and not all the characteristics usually ascribed to intuition can be explained by heuristics. For example, heuristics are described as producing short cuts in the decision-making process, while intuition is usually described as producing an unconscious acquisition of the completed decision in an holistic form. As well, heuristics are considered a means of ascertaining the degree of probability, while intuition is more often described as a means of ascertaining relative certainty. What is more probable is that heurisitic processing is a component of intuitive processing. As such, intuition cannot be equated with it or explained by heuristic principles alone. In fact, Kahneman and Tversky describe intuition as an unstructured mode of reasoning which does not use analytic methods or deliberative calculations (Kahneman & Tversky, 1982).

Intuition and Tacit Knowledge

The relationship between intuition and tacit knowledge, like that between intuition and heuristics, is difficult to articulate. The term tacit knowledge is associated with the 20th century Hungarian scientist and philosopher, Michael Polanyi. Polanyi describes tacit knowledge as unarticulated underlying knowledge which is subsidiary, but essential, to expressed operative knowledge at any other level (Polanyi, 1967). Meerabeau (1992) describes tacit knowing as "when we know something only by relying on our awareness of it for attending to a second activity" (p. 109).

Some tacit knowledge, such as learning the nuances of one's language, is general, and gained by being an experienced, functioning human being. Other tacit knowledge may be specialized, and acquired through long term association with a particular body of knowledge, such as that of a profession (Carroll, 1988; Sternberg & Horvath, 1995).

Is tacit knowledge synonymous with intuition? The literature would suggest not. Tacit knowledge is likely an element of the intuitive process, or a component of an intuited piece of information. Polanyi (cited in Young, 1987) describes intuition as a system which operates in tacit knowing. He suggests that intuition is a process that

senses a hidden resource (tacit knowledge) available for finding an answer to a problem, and proceeds to search for that hidden resource. Once discovered, the hidden resource (tacit knowledge) is examined, reflected on, evaluated, selectively chosen, and used in the intuitive process as needed (Young, 1987).

Resistance to Intuition as a Legitimate Cognitive Process

While there is a preponderance of literature, both general and research-based, that firmly supports the existence, validity and reliability of intuition, skepticism and resistance towards the concept remain (Bobb et al., 1990; Gillan, 1993; Pyles & Stern, 1983; Rew, 1990; Rew, Agor, Emery, & Harper, 1991). Some of the skepticism is reasonable. Morse et al. (1994) assert that two of the biggest detractors to intuition's mainstream acceptance are the perceived bias among researchers and writers who support intuition, and the lack of examples of stories showing when intuition is incorrect. Farrington (1993) echoes this point by emphasizing that care must taken to show when intuition has brought incorrect results (p.233). However, Silva (cited in Rew, 1991) tempers this concern somewhat when he says, "Knowledge from intuition may not always be correct, but neither is knowledge arrived at with all the advantages of the scientific method" (p. 62). A third difficulty with intuition gaining general acceptance is put forth by Radwin

(1990), who argues that there is little effort in the literature to develop consistency of meaning for the phenomenon. Having reviewed in excess of two hundred pieces of literature on intuition for this study, I would concur with Radwin's point.

PART TWO - INTUITION: ITS RELATIONSHIPS AND CONNECTIONS

Intuition and Philosophy

Eastern societies have a long history of valuing intuition as a concept (Noddings & Shore, 1984). The earliest Greeks and Romans valued both intuitive and logical thinking. With the advent of the classical Greek philosophers, however, the legitimacy of intuitive thinking was placed under scrutiny. This scrutiny of intuition continued, with varying degrees of intensity, into modern times.

Socrates was the first to examine human thought and wisdom from a rationalist perspective. Socrates believed that true wisdom could be delineated in definitions and principles, thus implying that intuited thought was not 'true knowledge' (Darbyshire, 1994). When experts on piety and justice could not isolate the elements and rules underlying the concepts, but only describe examples of the concepts in action, Socrates became disconcerted. As a result, he determined that such concepts were not true

knowledge (Dreyfus & Dreyfus, 1986).

Plato, in an effort to assist his teacher and mentor Socrates, suggested that experts did use rules, and did know the underlying elements of concepts, they had just forgotten them (Darbyshire, 1994). Plato supported the belief that true knowledge was explainable, and that while intuition did exist it was not rational, and therefore, a lower order of thinking. Aristotle was a less detached thinker than his mentor, Plato. He believed that underlying all rational knowledge was an inherent perceptive skill (i.e.intuition) that allowed for expert judgment, and superseded reason in particular circumstances (Noddings & Shore, 1984).

Plato's theory-based model of knowledge gained further prominence among Renaissance philosophers such as Rene Descartes. Descartes supported subject-object dualism, and believed that any problem could be solved by breaking it down into its component parts. He continued the quest to determine the nature of ultimate knowledge through principles. Descartes posited that there were two ways of acquiring true knowledge; deduction and intuition. He believed both operations were rational, and produced fundamental, infallible principles and axioms through which humanity could discern true knowledge; that being 'God's knowledge' (Bunge, 1962; Schraeder & Fischer, 1986).

Pascal, a 15th century mathematician and

philosopher, refuted Descartes scheme, proposing that such ideas were not effective for the real, day-to-day existence of general humanity. According to Pascal, everyday knowledge and perception had to be based on experience, custom, emotions and intuition (Dreyfus & Dreyfus, 1986).

Spinoza, another well-known 15th century philosopher, described three levels of knowledge: opinion, reason and intuition. He believed intuition was the essence of true knowledge, and like Descartes, posed that true knowledge was 'God's knowledge' (Miller-Field, 1992).

Hume, a 16th century historian and philosopher, postulated that true knowledge was grounded more in common sense and concreteness. This was a very different focus than many of his 15th century predecessors had taken. Hume believed that knowledge stemmed from learning through human experience and successful human coping. He took issue with Descartes and his followers' position that humanity could acquire 'God's knowledge'. Although Hume believed in a natural intuitive knowledge outside the realm of 'God's knowledge', he still felt such knowledge could be analyzed into its basic components (Dreyfus & Dreyfus, 1986).

Rousseau, a 16th century French contemporary of Hume, believed that intuition was an innate ability with which humans were born. He espoused that, as humans were inherently good, left alone, they would use this innate

intuition to divine true right and wrong (Noddings & Shore, 1984).

Kant, the classic philosopher of the 18th century, focused on knowledge as two cognitive capacities: intuition and intellect. 'Pure' intuition came from the a priori knowledge of time and space with which all humanity is born (Falkenstein, 1991).

From Kant's time, the gap between intuition and reasoned, empirical thinking widened. During the late 19th and early 20th century, discussion of this philosophical dichotomy began anew with the advent of phenomenology, hermeneutics and existentialism. These philosophical branches need not be separated from one another in an attempt to examine intuition's philosophical roots. All supported the tenet that the nature of knowledge was not primarily rational and context-free (Pascoe, 1996). However, the major re-introduction of intuition as a form of knowing that produced knowledge of an equivalent, if not higher order, than empiricism, came with the advent of the 20th century German phenomenological philosophers.

Husserl, perhaps the earliest phenomenological philosopher, posited that understanding could only come from experiencing knowledge in context, and interpreting its meaning. Intuition was considered a legitimate and necessary means of acquiring knowledge (Noddings & Shore, 1984).

Husserl's protege, Heiddegger, expanded the phenomenogical perspective of intuition by describing three modes of engagement in knowledge acquisition. These three modes of engagement, as described in Tanner (1993) are as follows:

1. **Ready-to-hand mode** -
The knowledge acquired via this mode is holistic and understood as a network of interrelatedness.

2. **Unready-to-hand mode** -
The knowledge acquired via this mode is discovered when there is a problem which breaks down the ready-to-hand mode. The salient feature of the breakdown becomes apparent, but it is still viewed as an element in the context of the whole.

3. **Present-at-hand mode** -
The knowledge acquired via this mode is discovered only when the person detaches from the holistic, context-driven circumstance, and examines the problem in a detached, context-free manner using deliberative, rational, calculative processes (p. 21).

It is in the ready-to-hand mode, and to some degree the unready-to-hand mode, that Heiddegger saw intuition as essential and significant.

Throughout the history of philosophical

development, two prevailing facts about intuition can be seen. First, few philosophers denied the existence of intuition. Second, their beliefs often differed in relation to the nature of intuition in the search for true knowledge, or the value of intuition in comparison to other forms of knowledge acquisition.

Intuition and Spirituality/Religion

Concepts in philosophy and spirituality often overlap, and this is true of intuition. Eastern religions, like eastern philosophical thought, have always valued intuition. In early western society mystics and seers, considered expert intuiters, were also highly valued. With the advent of Christianity, and later the widespread acceptance of analytical thinking as the route to true knowledge, western society systematically stifled and de-valued intuition as a route to wisdom (Taylor, 1993).

From a spiritual perspective, the underlying rationale for western stifling of intuition is two-fold. Eastern religions support active intuition by promoting the use of emotion in seeking wisdom and the will of God. Christianity, according to Noddings and Shore (1984), supports a more passive intuition. The Christian belief in the need to be receptive to revelations from God, a one-way process, is an example of this passivity. With the exception of evangelical faiths, western stifling of active

intuition in seeking God's knowledge and will increased, as the dogma and formalization of Christian denominations increased. The advent of scientific thought, and its power struggle with the established church in western society, caused the mystical nature of spiritual intuition to become further suspect.

In recent years, the Christian church has begun to critically examine the concept of passive receptivity as the route to God and spiritual wholeness. The rise of charismatic sects in many denominations bears witness to this fact. Noddings and Shore (1984) contend that modern religious writers express a desire for a more balanced relationship with God, and see an important place for intuitive thinking in this process.

The renewed belief in the spiritual nature of humanity, irrespective of religious affiliation, has gained widespread support in western society over the past several decades (Burden, 1957; Fuller, 1973; Vaughan, 1979; Rew, 1989; Miller, 1995). This has allowed the concept of intuition as a higher level of intellectual consciousness to be given reconsideration.

In its desire to be seen as scientifically legitimate, nursing in the later half of the twentieth century, systematically de-valued examining the spiritual aspect of nursing practice. Recent research suggests, however, that nurses who successfully use and value

intuition, are motivated by levels of consciousness that reflect a spiritual nature, readily admit that there is a spiritual component to their practice, and see the spiritual health of their clients as an important part of their practice (Jennings, 1990; Miller, 1995; Mohnkern, 1992; Rew, 1989).

Intuition and Creativity

Bunge (1982) purports that creative thinking does not come from 'nothingness'. Assagioli, the pioneer Italian psychiatrist, described intuition as a higher form of cognitive ability associated with creativity and synthesis (Rew 1988b). Much of the literature on intuition relates it to imagination, perception, the senses and the emotions. Bastick (1982) discusses the creative element of intuition under the concept of ***physiognomic perception***: the ability to visualize emotional qualities in non-emoting items. Cappon's (1993) research on intuition further postulates that much of intuition is cognitively visual, and the artistic community supports his view.

Creativity is associated with receptivity, and there is considerable literature that suggests setting an atmosphere of emotional and cognitive receptivity enhances intuitive skill (Burden, 1957; Correnti, 1992; Ennamorato, 1986; Gearhart & Young, 1990; Radwin, 1990).

Chinen et al. (1985) argue that the creative

process parallels their design of the intuitive process: a three stage operation of ***attunement, articulation and interpretation***, with symbolism as a key thread.

Creativity is associated with unconventionality. Westcott and Ranzoni's (1963) research on the correlates of intuitive thinking supports this widely held belief. Their meta-analysis of five studies produced a composite of the most successful intuitive thinkers as: unconventional, involved affectively in whatever they were doing, emotionally labile, challenged best by abstraction, and comfortable with doubt, uncertainty, risk and instability (p. 610). Many of Westcott and Ranzoni's identified characteristics of intuitives, particularly being risk-takers, unconventional and non-traditional, are supported in more current literature (Davidhizar, 1991; Gearhart & Young, 1990; Goldberg, 1983; Miller, 1993, 1995; Wondrak, 1992).

Agyakwa (1998) describes intuitive knowing as aesthetic knowing. Aesthetic knowing, Agyakwa contends, is associated with the arts, music and other creative endeavors. According to Carper (1978), aesthetic knowing is an element of the art of nursing.

Intuition and Psychology/Psychiatry/Personality

Perspectives on intuition from a psychiatric/psychological/personality point of view have evolved from philosophy. However, while the philosophical perspective

emphasizes the role of intuition in answering life's ultimate questions, the psychiatric/psychological/ personality perspective examines the role of intuition in human behavior and personality development.

Sigmund Freud, one of the earliest and best known psychiatrists, began his examination of the human psyche, and the development of psychoanalytic approaches to mental illness, near the end of the Victorian era. While his psychoanalytic approach did not purport any role for intuition per se, it did initiate the examination of the unconscious as a source of information about human behavior (Papilia & Olds, 1998).

The German gestalt psychologists of the early 20th century proposed that healthy behavior resulted from attending to the world of human experience, and that psychologically healthy individuals focused on solutions to problems in the here and now. Like psychoanalysis, gestalt psychology did not delineate any particular role for intuition *per se*. However, some of the underlying principles in the gestalt perspective bear close scrutiny in relation to intuition. Noddings and Shore (1984) state that gestalt psychology supports that:

1. the total of human experience and thought is greater than the sum of its parts.

2. healthy human behavior results from attending to triggering stimuli that promote awareness and mobilization of resources for action.

3. solutions to life's problems often demand understanding of deep cognitive structure.

4. human behavior is motivated by a quest for wholeness, balance and unity, which may not be found through the use of logic alone.

The concepts of holism and holistic thought, triggered awareness, deep cognitive structure and the limitations of logic suggest that the gestaltists were clearly moving towards the discovery of an intuitive element to human behavior.

Carl Jung was a student, and later a colleague, of Sigmund Freud. In the early years of his psychiatric practice in Switzerland, Jung was a Freudian psychoanalyst. Over time, however, he determined that Freud's perspective on the underlying motivation for human behavior was too narrow. As he theorized from his own research and practice, Jung came to believe that intuition was a factor in human behavior and personality. In his 1921 publication ***Psychological Types***, Jung identified, what he termed, four cognitive functions. These are:

1. **Thinking** - the function that allows for logical, objective judgment of truth or falsehood.

2. **Feeling** - the function that allows for the determination of the subjective judgments of like or dislike, pleasant or unpleasant, acceptable or unacceptable.

3. **Sensation** - the function that allows for the objective reception of internal and external sensations.

4 **Intuition** - the function that allows for the non-judgmental perception of implications, possibilities and totalities.

In addition, Jung postulated that humans perceived the world from two different attitudes, or frames of reference. These are:

1. **Introversion** - the frame of reference that made the source of the most insistent stimuli internal.

2. **Extroversion** - the frame of reference that made the source of the most insistent stimuli external.

Thirdly, Jung contended that humans operated in three levels of consciousness. These are:

1. **Personal conscious** - the level of conscious awareness

2. **Personal unconscious** - the level that houses the

unconscious and subliminal knowledge resulting from the individual's personal life experiences

3. **Collective unconscious** - the level housing the unconscious knowledge and understanding of universal human situations, experiences and archetypes. This level is re-born in the brain structure of every human being (Jung, 1921/1923/1971).

Jung also believed that the intuiter perceives, unconsciously and uncritically, possibilities and situations as a whole, at the expense of detail (Westcott, 1968b). He later theorized that the intuitive processes of the collective unconscious were more important than those of the personal unconscious. From that point onward, much of his work emphasised the philosophical and spiritual aspects of the human personality. Jung was, however, the first major psychiatrist/psychologist to theorize that intuition was a part of the human personality, and that it played a significant role in human behavior.

Jung's theories provided the framework for the work of Katharine Briggs, and her daughter, Isabel Briggs Myers. Briggs and Myers expanded on Jung's work, and gave it practical application (Tieger & Barron-Tieger, 1992). Briggs and Myers determined that there were sixteen personality types, half of which had a dominant intuitive factor (Myers & Briggs, 1976).

Starting in the 1940s, Briggs and Myers began developing a test instrument to measure personality type. Between the 1940s and 1970s this instrument was tested, refined and improved into the tool currently known as the ***Myers-Briggs Type Indicator (MBTI)***. This tool is widely used as a personality analysis instrument, and its results are used for determining career paths, group dynamics, and many other personality-related decisions (Tieger & Barron-Tieger, 1992). It is also widely used as a research instrument in projects focused on the discernment of a relationship between personality type and selected behaviors.

Eric Berne, in his early years, theorized that intuition was a subconscious reasoning process that could be associated with psychoanalysis (Berne, 1949). His writings on the psychodynamics of intuition were the origins of his most famous theory: **Transactional Analysis**. "Transactional analysis postulates that each person has three elements to [his/her] personality, in greater or lesser operation at any given point in time. These elements are (1) the immature, need-gratifying aspect, referred to as the Child, (2) the moralistic, rigid, standard-setting aspect, referred to as the Parent, (3) and the mature, reality-based aspect, referred to as the Adult" (Taylor, 1990, p.443). Berne believed that intuition was an archetype psychic phenomenon which, in transactional analysis, was most free to operate

in the Child ego state, repressed in the Adult ego state, and impaired in the Parent ego state (Berne, 1962).

Much of the empirical work done on intuition from a psychological perspective was performed by Malcolm Wescott during the 1960s (Wescott, 1961; Westcott, 1968a; Westcott, 1968b; Westcott & Ranzoni, 1963). Westcott saw value in the Myers and Briggs approach to personality typing, and used their theories and instrument often in his studies. Westcott focused much of his work on vocational aptitude, and on examining intuition from the perspective of perceptual inference. Much of his research examined two variables: the number of cues required before an individual would render a judgment, and the correctness of the ensuing judgment (Goldberg, 1983). The premise that most of his research supported was that intuitive thinkers required fewer cues to make correct decisions (Westcott, 1961; Westcott, 1968a; Westcott & Ranzoni, 1963). From his research, Westcott contended that intuitive thinkers had the edge in accurate decision-making and response to behavioral cues.

More recent research, particularly in nursing, has questioned Westcott's contentions. The results of studies by Epley (1994), Kerlin (1992), Madrid (1993), Sanford (1985) and Walton (1986), all suggest that intuitive thinkers are no better at making accurate decisions, or responding accurately to behavioral cues, than their opposing personality types. The study by Kerlin provided a

clue as to why these results conflicted with Westcott's, and presented another element in the relationship between psychology and intuition. Kerlin found that, regardless of psychological type, the nurse executives in her study who valued and trusted intuition as a legitimate decision-making tool, used it, and acknowledged using it (Kerlin, 1992).

Throughout the 1980s and 1990s there has been a significant increase in research on psychological growth and change in adulthood. As a result of such research, some new thoughts on intuition and psychological development have emerged. Research on adult cognitive development shows that with age, ***fluid intelligence***, the ability to apply mental processes to solve new problems that require little or no previous knowledge, appears to decline (Schaie, 1994; Sternberg, 1985). However, ***crystallized intelligence***, the ability to to remember and use information collected over the lifespan, appears to increase (Hoyer & Rybash, 1994; Schaie, 1994; Sternberg, 1985). Furthermore, postformal theorists purport that there are unique characteristics to the way adults think. Sinnott contends that adults become progressively more capable of integrating emotion with intelligence and experience with learning, thus making them superior to their younger counterparts in practical problem-solving (Sinnott, 1996). More importantly, however, some research on adult cognitive development clearly supports that, at least in practical problem-solving, the frequency

and accuracy of intuition use increases with age (Cornelius & Caspi, 1987; Perlmutter, Kaplan & Nyquist, 1990).

The recognition of intuition in psychiatry and psychology has evolved slowly. However, the legitimacy of intuition as an element of human behavior and personality has continued to gain support in both fields of practice.

Intuition and Brain Function

The right and left hemispheres of the human brain have distinct functions. In the majority of people, the left hemisphere is responsible for language-based skills, and the ability to use logical and analytical thinking processes. The right hemisphere, on the other hand, is responsible for the interpretation of sensory and spatial analysis information, and recognizing three-dimensional relationships (Martini, 1998, p.461). The corpus callosum is a band of commissural fibres that connects the two hemispheres, and permits communication between them (Martini, 1998, p.458). The limbic system, which contains components of the cerebrum, diencephalon and mesencephalon, is responsible for "establishing emotional states and related behavioral drives...linking the conscious, intellectual functions of the cerebral cortex with the unconscious and autonomic functions of the brain stem, and...facilitating memory storage and retrieval" (Martini, 1998, p.464). The reticular activating system (RAS) in the

mid-brain is responsible for alertness and arousal levels (Martini, 1998, p.471). This established brain physiology is the underlying basis for most of the theories related to intuition and brain function.

The earliest researchers postulated that, because of the nature of intuition, it was a right-brain skill (Agor, 1984; Bastick, 1982; Fisher, 1981; Goldberg, 1983). The classic work of Springer and Deutsch (1981) on cerebral hemispheric operations supported the idea that intuition was primarily a right-brain function. Their work described the left brain as tending to deal with rapid, linear time movements, and the analysis of subject detail. The right brain, on the other hand, tended to deal with simultaneously occurring relationships, and the global, holistic properties and patterns of subjects. Concurrent and later research contended that intuition was a more complex skill than such a simple explanation implied.

Psychiatrist and neuroscientist Eugene d'Aquili posed a circuitry theory of brain operation to explain the emotional, sensate and confusion elements often associated with the intuitive process. D'Aquili's theory contends that intuitive thoughts formulated in the right brain are censored when they cross the corpus callosum to the left brain. The feelings associated with such thoughts, however, go through the limbic system to the left brain unhindered (Black, 1982). D'Aquili's theory would help explain the

common testimony that the first connection to an intuitive thought is a feeling. Although provocative, the theory has never been formally researched, and d'Aquili has both supporters and disbelievers in the fields of psychiatry and neuroscience.

The triune brain theory, postulated by neuroscientist Paul MacLean, examines brain function from an evolutionary perspective. The brain, MacLean believes, is divided into three sections. The earliest developed, the reptilian brain (brain stem), is responsible for physiologic habits and behavior patterns, and instinctive behavior. The second evolutionary level, the limbic system, is responsible for motivation and emotion. The most recently developed portion of the brain, the neocortex, is responsible for intellectual operations. The neocortex is divided into the left and right hemispheres, with the left being responsible for analytical, rational thought processes, and the right being responsible for holistic, intuitive thought processes (Doheny, 1990). MacLean contends that an intuitive thought originates in the right brain, signalling the limbic system to respond emotionally. The intuition is then translated by the left brain into a logically verbalized thought. Like d'Aquili, MacLean has detractors and supporters for his theory, and continues to expand his research in this area, as the specialty of neuroscience expands.

Psychiatrist and neuroscientist Larry Squires has a different perspective on brain function, and its influence on intuition. Squires believes that the human brain has a capacity for two levels of memory operation. The declarative memory system is used in problem-solving new situations, and is a conscious process. The reflexive memory system, used when accessing well-known, well-integrated information, is primarily unconscious and reflexive in operation. It is within the reflexive memory system, according to Squires, that intuition operates (Bagne, 1994). Squire's theory is based primarily on work done with brain-damaged individuals, and like d'Aquili's and MacLean's theories, has not been scientifically validated.

Neuropsychologist Karl Pribram is credited with establishing a hologram theory of brain function. The hologram theory contends that information storage in the brain is done in a manner similar to wave patterns in a hologram. Thus, each piece of information can be accessed in every part of the brain (Goldberg, 1983). If there is validity to Pribram's theory, it would suggest that knowledge acquisition and retrieval "may not depend entirely on a sequence of neuronal connections over time and physical space. This could account for the amazing rapidity of intuition" (Goldberg, 1983, p. 132).

While the earliest theories on the relationship between brain function and intuition focused heavily on the

right hemisphere connection, later theories, like those of Squires and Pilgram, lend credence to the belief that brain operations involving intuition are more complex than originally thought. The more complex theories of the intuitive process have coincided with advances in the understanding of brain operations generally. The hemispheric focus on intuition has gradually given way to an understanding that intuitive thinking, while perhaps originating in the right hemisphere, is probably a multiphasic and interactional brain operation.

Fallik and Elliot (1984) support the contention that intuition is not a hemispheric-bound process. The researchers tested 200 undergraduate students at the University of Maryland, using ***Westcott's Test of Intuitive Ability***, and found no distinct hemispheric tendency in the intuitive process. In fact, their results showed that the most intuitive subjects showed considerable hemispheric mix of cognitive processes.

Future research into brain function will help clarify further the true nature of intuitive thinking. In fact, scientists in Japan have been given a $560 million U.S. grant to spearhead a ten-year project to build a computer that will 'duplicate' human intuitive thinking processes (Ashai, 1992).

Intuition and Gender

General folklore in most societies suggest that women are more intuitive than men. In western society, belief in women's intuition is part of common mainstream thinking. Historically, women were often priestesses and seers whose wisdom was valued, and whose power was respected. The change in thinking regarding the value of intuition, and consequently women's place in the intellectual hierarchy, began in western society with the Greek philosophers. Aristotle believed that women were not capable of reason, and thus were intellectually inferior to men (Ennamorato, 1986). This denigration of intuitive thought, and women's intellectual skill, continued unabated into modern western society. The literature offers a variety of perspectives on intuition and women, including an anthropological, psychological and sociological, and sexism and feminism perspective. An elaboration of each of these perspectives follows.

The Anthropological Perspective

There are two anthropological perspectives in the literature which attempt to explain the premise that females are, by nature, more intuitive than males. Anthropological research shows that women have been the childraisers, gatherers and hearthkeepers in most societies, since

prehistoric times. The skills necessary for these tasks involved attention to detail, nuances, and subtle changes in situations, and in human relationships. These are all skills associated with intuitive ability. Researchers Maccoby and Jackson found that across cultures and classes even today, women are better able to perform these skills than men (Josefowitz, 1984).

A second anthropological slant contends that female intuitive ability is a survival response to forced subservience to males (Ennamorato, 1986). A study by a Harvard researcher showed evidence of this phenomenon. In experimental situations in which they were required to be followers, women demonstrated a high degree of intuitive sensitivity. In similar experimental circumstances, however, so did men. Both genders showed a reduced intuitive sensitivity when they assumed the leadership roles in the experiment (Ennamorato, 1986).

The anthropological perspective on intuition and gender will evolve further as anthropologists discover and extrapolate information about, as yet unknown, past societies and cultures.

The Psychological and Sociological Perspective

The anthropological evidence of women's historical role as nurturer and sustainer of human relationships, has lent considerable support to the belief that women are

more intuitive than men. Subsequent psychological and sociological research has sustained this opinion, but narrowed it to argue that it is primarily in the arena of human relationships that women are better intuiters (Bowles, 1984; Cappon, 1989; Chinn, 1989; Fallik & Eliot, 1985; Gerosa, 1993; MacKay, 1989).

The belief that female psychological development is significantly different from male psychological development came to the forefront with the research work of Carol Gilligan in the early 1980s, and Belenky, Clinchy, Goldberger and Tarule in the mid 1980s. Gilligan's research asserted that women's psychological development focused on relationships and human connectedness (Papilia & Olds, 1998). Belenky and her colleagues went further, asserting that a female's psychological and intellectual development were fundamentally different than a male's. They argued that intuition played a significant role in women's subjective and connected ways of knowing (Belenky, Clinchy, Goldberger & Tarule, 1986). The work of both Gilligan, and Belenky, Clinchy, Goldberger and Tarule has been heavily scrutinized since it was completed, and remains controversial. Subsequent studies have shown that, as males and females become more socially and economically equal, gender differences in psychological development are less pronounced (Orr & Luszcz, 1994). One nursing study on the use of intuition by nursing academic administrators reported

no gender differences (Roberts, 1990).

A less purported sociological perspective suggests that, until relatively recently, women have not been educated to think logically. In response to this, they have focused their knowledge development on intuitive forms of acquiring information (Fisher, 1981; MacKay, 1989).

The Sexism and Feminism Perspective

Some researchers contend that sexism is the underlying reason why women are viewed as more intuitive than men. Such sexism, they maintain, comes in several forms. Since intuition is considered a lower form of intelligence in western society, the fact that intuition is associated with women, from a sexist point of view, seems natural. Research shows more covert examples of the influence of sexism on intuition. Several studies point out that research suggesting women are more intuitive than men may be inaccurate. Men's fear of being associated with intuition causes them to be discouraged from using it, to be extremely resistant to admitting using it, and to use more acceptable, male-slanted visceral language when describing it (Burnard, 1989; Chinen et al., 1985; Gerosa, 1993). It is this same sexism that makes women reluctant to admit using intuition, even in the face of seeming male comfort with the concept, for fear of being intellectually discredited (Dixon, 1989; MacKay, 1989).

In contrast, many nurses, the majority of whom are women, readily support intuition as a source of knowledge equal to analytical reasoning. Most of these nurses are also comfortable with the concept of a feminine base for intuitive thought (Chinn, 1989). Many women, however, particularly those in business and the 'hard' sciences, are uncomfortable with what they see as excessive feminist efforts to push intuition as a legitimate form of knowledge. They fear that this push by feminists will cause intuition to become ghettoized as a lower level of knowledge acquisition. Worse still, they fear a backlash against giving intuition any legitimate, reasonable place in the knowledge acquisition process (Bradshaw, 1995; Parse, 1988).

One of the most entrenched arguments favouring women as more intuitive, is based on the belief that women have structurally and operationally different brains than men. The major conjectures about these differences were the result of work in split-brain research in the 1980s and early 1990s. This research suggested that women were more right-brain oriented, had a better ability to use either brain hemisphere for the same task, and could switch hemispheres more rapidly and fluidly than men (Doheny, 1990; Goldberg, 1983). The research of anthropologist Ralph Holloway in 1982 reported that the corpus callosum in women's brains was, on average, 10% larger than the corpus callosum in men's (Strauss, 1996). Since the corpus

callosum is the major nerve pathway linking the two brain hemispheres, Hathoway's results were considered mainstream scientific support for what, to that point, had only been speculation.

Split brain research has become increasingly controversial, and in 1996, a meta-analysis of forty-nine studies on the corpus callosum conducted by two University of Alberta psychologists, determined that, in fact, women's corpus callosums were, on average, 3% smaller than men's (Strauss, 1996). The argument that women's brains are structurally and/or functionally different from men's will continue. The most current research, however, indicates that the size of the corpus callosum, at least, is not a legitimate rationale for the argument.

Whether females are more intuitive than males remains uncertain. As the roles of males and females continue to evolve, and physiological research into brain function becomes more sophisticated, further gender research on intuition may provide more definitive answers.

Intuition and Science/Mathematics

No two fields are considered more representative of linear, analytic reasoning in action than science and mathematics. In fact the term 'scientific method' is synonymous with deductive, linear problem-solving. Students studying in the fields of science and mathematics are

rewarded for learning that is based on already known theorems and modes of proof (Wilder, 1967). Mainstream scientists and mathematicians are what Maslow referred to as scientific 'marine animals' who build their 'coral reef' minute fact by minute fact, repeating experiments over and over, and cautiously modifying theories. However, Maslow also identified an elite group of scientists and mathematicians who are the 'eagles' of their fields, making soaring leaps and imaginative flights that lead to revolutionary thought (Goldberg, 1983, p.20).

Do Maslow's beliefs about the 'eagles' of science and mathematics hold up under scrutiny? The literature suggests that they do. Most of the greatest minds in science and mathematics were and are highly intuitive, and public about their own beliefs in the value of intuition. Albert Einstein, Sir Isaac Newton, Sir Alexander Fleming, and Jonas Salk are only a few of the great scientists of the past who readily affirmed intuition as the spark that lead to their monumental scientific discoveries (Budnik, 1995; Habid, 1988; Goldberg, 1983). Poincare and Courant, two distinguished mathematicians, were also known to be highly intuitive (Hunt, 1982; Westcott, 1968b). In our own time, William Kautz, an engineer and mathematician, and founder of the Centre for Applied Intuition (CAI) was a research scientist at the Stanford Research Institute for 35 years. He was among the scientists who developed the first

mainframe computer for the banking industry (Sullivan, 1992).

Two studies, conducted 32 years apart, suggest that intuition is a common component of both scientific and mathematical discovery. A 1931 study of 232 scientists revealed that 83% had occasional to frequent flashes of intuition (50% occasional; 33% frequent) in relation to their scientific work (Bunge, 1962). A 1963 study by Westcott and Ranzoni noted that successful intuitive problem-solvers had higher mathematical aptitudes than their less intuitive counterparts (Westcott & Ranzoni, 1963).

How is it that two fields so traditionally rigid about the validity of analytical reasoning, have provided some of the world's most intuitive minds? Perhaps the reason is most succinctly put by the famous philosopher of science, Karl Popper who said, "There is no such thing as a logical method of having new ideas..." (Goldberg, 1983, p.21-22). In fact, within their own tight inner circles, scientists and mathematicians readily honour and praise those of their own who are highly intuitive. This private honouring and praising, however, is rarely extended to public acknowledgement of intuition as an acceptable process for discovery in science and mathematics (Parse, 1988).

How is intuition used in science and mathematics? P. B. Medawar, the winner of the 1960 Nobel Prize for Medicine, contended that linear analysis alone is inadequate

for scientific reasoning. He proposed that intuition is fundamental to the scientific process and allows for the generation of hypotheses that may be subjected to logical analysis (Schroeder, 1991, p.19). Goldberg summarizes the role of intuition in science best when he says, "Formal proofs [in science] are instruments of verification and communication....they are the end products, the logical, orderly presentations compiled after all the sloppy work has been done, all the false starts and dead ends corrected, all the vague hunches and gut feelings sorted out (p.21)... The real objectivity of science pertains to the macrocosm, the collective enterprise where hunches, beliefs, and intuitive convictions confront one another in the public arena and are rigorously evaluated. What survives is called objective, scientific knowledge" (p. 20).

Intuition use in science allows the scientist to:

1. play with ideas at a looser level when not bound by principles, and theories (Budnik, 1995).

2. delve deeper than traditional intellect can go (Budnik, 1995).

3. decide where to look, what to ask, how to frame the problem and how to interpret data (Goldberg, 1983).

4. try different ways of perceiving and discriminating (Bunge, 1962).

5. interpret what are, on the surface, artificial signs (Bunge, 1962).

6. represent visually and form metaphors (Bunge, 1962).

7. make catalytic inferences (Bunge, 1962).

8. use inventiveness and inspiration (Bunge, 1962).

The role of intuition in mathematics parallels that of science. The distinguished mathematician, Richard Courant, once stated that "it is common for mathematicians to ponder long over a problem, eventually have an intuitive insight into the solution, and then carefully construct a proof that makes it sound as if they had reached the conclusion by impeccably logical steps" (Hunt, 1982, p.136-137). Poincare, perhaps the best-known modern day mathematician, believed intuition has three patterns of expression in mathematics. It is a means of:

1. projecting mathematical evidence and ideas visually. Mathematicians who use intuition in this manner are referred to by Poincare as ***geometers***. (Westcott, 1968b, p.49).

2. apprehending order and system among a vast number of possible mathematical combinations. The patterns and combinations selected are those that are most likely to be productive. Poincare believed this means of using intuition is a special esthetic capability critical to mathematical

discovery. Those not having this skill, contended Poincare, will not be mathematical discoverers (Westcott, 1968b, p.49-p.50).

3. apprehending sudden, illuminated certainty of discovery that is the delayed result of difficult, concentrated effort that may have been fraught with error (Westcott, 1968b, p.50).

There is also a school of thought called mathematical intuitionism that is founded on the belief that the logic of mathematics is in the self-evident truths that are proofs in themselves. These ultimate proofs cannot be proven by mathematical manipulation (Bunge, 1962; Westcott, 1986a; Wetcott, 1968b). This perspective on mathematics and intuition is more of a philosophical than an operational one.

To separate science and mathematics from intuition would negate one of the most fertile fields of recent scientific discovery, that of quantum physics. One of the principles underlying quantum physics is that there is an interconnectedness to all particles in nature (Hover-Kramer, 1990). It is quantum physics that has produced the ability to examine the three-dimensional images known as holograms. One of the discovered properties of holograms is that each small piece of a holographic image contains an entire three-dimensional image of the whole (Slater, 1992). This

property of holographic images has lead several physicists to re-evaluate beliefs about the properties of the human mind and the universe as a whole. These physicists theorize that the mind itself may be a hologram within which is a complete, intact hologram of the universe (Slater, 1992). The implications of such a possibility in relation to the role of intuition in human existence is profound.

The literature, and scientists and mathematicians themselves, support intuition as a necessary process in their fields. Agan (1987) contends that the traditional scientific view is self-limiting, and intuitive knowledge will gain prominence as the limitations of science become greater. Einstein, arguably the most famous scientist of modern time, firmly believed that the solutions to the deepest problems of humanity and the universe are beyond the capabilities of pure intellect (Budkin, 1995). Only more advanced research in both science and mathematics will be able to negate, or more firmly establish, Einstein's view.

Intuition and Business/Management/Leadership

There is a general public perception that successful business people and managers consistently base their decisions on objective data and rational thought. The literature, however, provides evidence to the contrary.

Dr. Weston Agor, during his tenure as director and professor of the Master of Public Administration Program at

the University of Texas in the early 1980s, was one of the first researchers to examine the use of intuition in the decision-making processes of high level executives. Agor tested over 2000 managers across the United States in the early 1980s, and found them to be highly intuitive. As well, he discovered that the higher the level of management, the higher the intuitive ability (Agor, 1984). A second 1984 study by Coulson and Strickland noted that the business executives in the sample (300 of the 603 subjects) were highly creative and intuitive (Norris & Achilles, 1988). A 1985 study of 34 senior managers and business executives reported that 94% of the subjects used intuition, and 88% viewed it as important to their work (Chinen et al., 1985). A 1987 government study concluded that top level executives in major U.S. corporations used intuition regularly to guide their decision-making (Rew, 1988a). Similar results were found in a study by Harper in 1988 (Rew, Agor, Emery & Harper, 1991). A more recent study by Agor of 70 top executives revealed that 69 admitted to using intuition frequently in making decisions (Dixon, 1989).

Studies done on the use of intuition by nurse executives and managers produced results consistent with those found in studies of intuition use by business executives and managers. A 1990 study on the use of intuition by 119 nursing academic administrators reported a statistically significant level of intuition was used by the

administrators in their decision-making (Roberts, 1990). A 1992 study of nurse executives noted that the majority indicated that they used intuition to make decisions (Kerlin, 1992). A smaller exploratory study of 10 first-line nurse managers purported that 8 of 10 believed they used intuition in making decisions (Nixon, 1995).

The evidence clearly shows that executives and managers believe that they use intuition in their decision-making processes. The research, however, also shows some interesting relationships between intuition and various aspects of management/leadership/business.

Some studies show a relationship between intuitive ability and the quality of decisions made. A study conducted in the early 1970s by Douglas Dean and colleagues examined the intuitive abilities of 25 business executives. The results showed that the 12 executives who scored highest on the precognition ability test had all doubled their companies profits in five years (Davidhizar, 1991). Although the study's statistical rigor has been questioned, it does encourage further research into the connection. A study by Cosier and Alpin clearly supported the premise implied in the Dean and associates study. One hundred and eleven business students were tested on intuitive ability, and then divided into high and low intuitives. Each student was then given business decisions to make. The group classified as highly intuitive made statistically better

decisions (Cosier & Alpin, 1982). A 1993 study of 304 nursing managers showed a statistically significant relationship between intuitive ability and level of manager. The results showed that managers with higher levels of intuitive ability, were more likely to be higher level nurse managers (Janney, 1993).

While the research shows intuitive ability is an important characteristic in successful managerial decision-making, Umiker (1989b) speculates further. He suggests that the higher a person rises in an organization, the more important intuition becomes for futuristic and long-range planning (Umiker, 1989b, p. 58). Referring to work done by Brandrowski, Umiker says it is at the top and bottom levels of an organization that intuition is typically highest. He speculates that perhaps this is the reason why middle management is so susceptible to downsizing (Umiker, 1989b, p. 59).

Dreyfus and Dreyfus (1986) contend that it was the success of Japanese business corporations, simultaneously coupled with the decreasing success of the U.S. in the world marketplace in the 1970s and 1980s, that fuelled mainstream interest in alternative methods of business decision-making and management. Japanese organizations have traditionally valued intuition in business decision-making (Sullivan, 1992). Western organizations, like western society in general, have tended to support only analytical problem-

solving methods as legitimate (Cappon, 1993). This is clearly illustrated in a 1989 study by Cappon who noted that, while many company executives used intuition regularly and successfully in their decision-making, they were reluctant to admit this for fear of losing customers (Cappon, 1993).

In the late 1970s and 1980s it became clear, however, that analytical business skills alone were not going to keep western companies competitive in the marketplace, and were not consistently able to assist businesses in making the 'right' decisions. One of the best examples of the inadequacies of basing business decisions exclusively on objective data, was the well-known fiasco associated with the decision to change the taste of Coca Cola a few years ago (Davis, 1991).

Whatever the reason, mainstream acceptance of intuition as a legitimate form of business thinking began in the late 1970s and progressed substantially over the subsequent 20 years. Two organizations for the promotion of intuitive decision-making were founded during that time, and a large portion of the clientele of both these organizations is from the business community. The Centre for Applied Intuition was established in 1977 in California, and in the late 1980s the Global Intuition Network was founded by Weston Agor (Dineen, 1992; Sullivan, 1992).

Research suggests that intuitive thinking has

found a legitimate place in western business practice. The literature also shows that perhaps it has always been there, but not publically acknowledged. Ennamorato (1986) identifies several famous leaders and business executives who have always been open about their use of intuition. These include Winston Churchill, well-known American attorney F. Lee Bailey, Canadian entrepreneur 'Honest' Ed Mirvish, and George Cohon, President of McDonald's Canada.

Intuition and Education

It is commonly believed that the public education system operates within a set of values that are a reflection of those of its host society. Since western society values deductive reasoning and analytical thought, and de-values intuitive knowing, so does its public school system (Ennamorato, 1986; Lampert, 1984; Norris & Achilles, 1988; Westcott, 1963). Some authors go so far as to contend that the education system stifles intuition (Ennamorato, 1986; Noddings & Shore, 1984; Westcott, 1968a).

The literature provides some interesting secondary evidence of this fact. Norris and Achilles (1988) note that, contrary to the trend in all other fields, the higher up the management ladder, the less intuitive educational managers are (p. 111). In his profile of the most intuitive, creative thinkers among his research subjects, Westcott included *undistinguished academic careers* as a

common characteristic of these individuals (Westcott, 1968a). Further evidence of this can be gleaned by examining a list of some of the most distinguished intuitive and creative minds in recent western history, who were notoriously poor students: Winston Churchill, Walt Disney, Thomas Edison, Albert Einstein, General George Patton, U. S. President Woodrow Wilson (Ennamorato, 1986).

Lampert (1984) contends that intuitive knowledge is part of the day-to-day knowledge of the child. The younger the child the more intuitive his/her world. The formal knowledge of the school system is separate from the child, and foreign to his/her world. Lampert believes that children often use intuitive ways of making sense in the formal world of the school. Teachers need to find ways to use intuitive *and* formal learning in the classroom to have the best learning take place. The dilemma posed by this problem is a classic one for educators: how to balance the needs of the individual student with the norms and expectations of the school system itself (Lampert, 1984, p.10). Norris and Achilles (1988) assert that until the educational hierarchy provides intuitive, innovative leadership, the problem will remain unsolved (p. 114).

Correnti (1992) believes that nursing has almost come full circle in terms of its beliefs about nursing education. Until the late 1960s, nursing always had intuitive elements to its practice. The push for nursing to

become a legitimate mainstream profession resulted in its intuitive practices giving way exclusively to scientifically-based care, thinking and reasoning. In the mid-1980s, the weaknesses in teaching only linear reasoning processes to nursing students began to be illuminated (Benner & Tanner, 1987; Carroll, 1988; Collie, 1989; Jacobs-Kramer & Chinn, 1988; McMurray, 1989; Rew & Barrow, 1987).

Subsequent research on intuition and non-linear thinking in nursing supported the need for nursing education to: value intuition as a legitimate way of knowing; openly discuss intuition within the profession; mentor novice nurses to develop and enhance their intuitive skills; teach intuitive thinking and reasoning skills to its students; and, evaluate the intuitive thinking and reasoning skills of its students (Blomquist, 1985; Bourne, 1993; Christie, 1996; Collie, 1989; Cooper, 1994; Correnti, 1992; Kerlin. 1992; McCormack, 1993; McMurray, 1989; Murray, 1994; Ruth-Sahd, 1993).

Educational leaders in the public school system, and in nursing education, have been slow and inconsistent in buying into the legitimacy and importance of intuitive knowing. Until they do, the process of incorporating intuition into educational curricula will be difficult.

Intuition and Nursing

A review of the literature produced more than 70 works on intuition in nursing, exclusive of its relationship to expertise. All but one of these articles were published since 1980, and 47 were published since 1990. Twenty-six articles presented research on intuition in nursing. Fourteen themes related to intuition in nursing were found in this literature, and are elaborated as follows:

1. Clinical anecdotes of intuition in nursing in action (Burnard, 1989; Demott, 1995; Gillan, 1992, 1993; Gruber, 1989; Hackleman, 1984; Murray, 1994; Renz, 1993). Most of the research on intuition in nursing includes anecdotes of intuition in action.

2. Descriptions of intuition in nursing as a concept, phenomenon and process, including concept analyses and identification of characteristics/attributes (Leners, 1990, 1993; McCormack, 1992; Meerabeau, 1992; Mitchell, 1994; Morse, Miles et al., 1994; Rew, 1986, 1987, 1998b, 1990; Rew & Barrow, 1987; Schraeder & Fischer, 1986; Slater, 1992)

Leners (1990) identifies themes, domains, characteristics and variables associated with intuition in nursing. Rew (1988b) and (1990) identifies nurses' descriptions of their own intuitions. Rew (1990) also suggests ways in which nurses' intuition can be enhanced.

3. Intuition as an element of the aesthetic or artistic nature of nursing (Agan, 1987; Ashworth, 1990; Berrigan, 1998; Carper, 1978; Cooper, 1994; Gearhart & Young, 1990; Hover-Kramer, 1990; Jacobs-Kramer & Chinn, 1988; Jennings, 1990; Leners, 1990, 1993; Manion, 1990; Miller-Field, 1992; Moch, 1990; Mohnkern; 1992; Rew, 1989; Rose & Parker, 1994).

The general literature in this area describes the aesthetic nature of intuition in nursing and its connection to holism, ethics, caring, personal knowing, reflection, communication with patients and spirituality. The research literature examines the significance of intuition in nursing in relation to the meaning, experience and depth of nurses' work and nursing practice (Cooper, 1994; Jennings; 1990; Leners, 1990; Miller-Field, 1992), to transpersonal caring and the culture of nursing (Leners, 1990), and to the element of presence in nursing (Mohnkern, 1992).

4. Examination of the relationship between intuition and analytical/linear reasoning in nursing (Easen & Wilcockson, 1996; Forker & Billings, 1989; Miller & Rew, 1989; O'Connell, 1992; Parse, 1988; Reilly & Oermann, 1992; Rew, 1987; Rew et al., 1991)

5. The value of intuition in nursing (Ashworth, 1990; Leners; 1990, 1993; Rew & Barrow, 1989; Wondrak, 1992).

6. Intuition as an element of critical thinking and decision-making (Hughes, 1988; Janney, 1993; Kingten-Andrews, 1991; Nixon, 1995; Paul & Heaslop, 1995; Radwin, 1990; Rew, 1988a, 1990; Rew & Barrow, 1987; Watson, 1995).

Research supports the contention that nurses do use intuition in decision-making (Nixon, 1995; Rew, 1988a, 1990; Tanner, 1989, 1993; Watson, 1995; Westfall, Tanner, Putzier & Padrick, 1986). It also shows that there is a statistically significant relationship between intuitive ability and level of nurse manager (Janney, 1993). However, reported results in some studies show inconsistencies in relation to nurse managers having and using intuition. Janney's study (1993) supports that nurse managers have a high level of intuitive ability. It does not support that they necessarily use this ability in decision-making. Janney does show, however, that the majority of nurse managers in the study were open to the use of intuition. The Nixon study (1995) indicates that nurse managers have intuitive ability and use it in making decisions. In contrast, Hughes (1988) shows that nurses who evidence decision-making stability use limited risk, and little intuition in their decision-making process. Hughes, however, does not indicate whether or not the stability of the nurses' decision-making equates with the correctness of the decisions made. It is evident that further research in

relation to the use of intuition in decision-making by nurses is necessary to get a clearer picture of the many complexities of this relationship.

7. Intuition as a personality characteristic of nurses, and how it impacts on other variables. Epley (1994) found no relationship between intuition as an identified personality characteristic, and the manner in which the assessment and management of pain in burn patients was conducted by nurses. Kerlin (1992) found no relationship between intuition as an identified personality characteristic, and the decision-making practices of nurse executives. Madrid (1993) found no relationship between intuition as an identified personality characteristic, and patients' perceptions of received empathy from nurses. Sanford (1985) found no statistically significant relationship between intuition as an identified personality characteristic, and the number of perceptual cues needed by nurses to accurately diagnose patient problems. Walton (1986) found that nursing students identified as intuitive thinkers on the ***Myers-Briggs Type Indicator***, had statistically significant lower mean scores of diagnostic ability than those identified as sensing and feeling.

8. Intuition in the context of various nursing settings such as intensive/critical care, management, mental health nursing and crisis management (Ashworth, 1990; Bobb et al.,

1990; Davidhizar, 1991; Rew, 1991; Rew et al., 1991).

9. Intuition in relation to the education of nurses (Blomquist, 1985; Collie, 1989; Correnti, 1992; McCormack, 1993; McMurray, 1989). Aspects examined include evaluating nursing student skill in using intuition, student anecdotes of intuitive experiences, the need for educating staff nurses in using intuition and the implications of this need on curriculum in both undergraduate and staff nurse education programs.

10. Intuition as a gestalt experience (Pyles & Stern, 1983; Rew & Barrow, 1989).

11. Tools for measuring intuitiveness in nurses (Himaya, 1991; Miller, 1990, 1993).

12. Intuition and gender/feminism (Miller & Rew, 1989; Miller, 1995; Parse, 1988).

13. Difficulties with researching intuition (Kenny, 1994).

14. The characteristics of intuitive nurses (Miller, 1995; Rew, 1990).

It is evident by the quantity and quality of the literature on intuition and nursing that the phenomonen is of considerable interest to many practising nurses and nurse researchers.

PART THREE - INTUITION: MEASUREMENT INSTRUMENTS

Tools for Measuring Intuitiveness

Six tools that measure intuitiveness were found in the literature. Four of these tools are designed for use with the general population, two for use with nurses. Of the four that measure intuitiveness in the general population, two measure it as an element of overall personality, one measures it primarily as an aptitude, and one measures it as a personality trait independent of overall personality type.

Myers-Briggs Personality Type Indicator (MBTI)

As noted earlier, the Myers-Briggs Type Indicator (MBTI) is a valid, reliable personality analysis instrument containing in excess of 150 forced-choice items. Its results categorize the test-taker into one of 16 personality types, of which 8 have intuition as a functioning component (Briggs & Myers, 1976). The instrument is widely used in research across a number of disciplines, including nursing.

Singer-Loomis Inventory of Personality (SLIP)

Similar to the MBTI, the Singer-Loomis Inventory of Personality (SLIP) also measures cognitive style, including intuition. Its advantage over the MBTI, according to its developers, is its independent, rather than forced-

choice instrument items (Rew, 1986). This instrument would appear to be used less widely than the MBTI. Only one study related to intuitiveness in nursing, in which the the SLIP tool was used, was found (Madrid, 1993).

Westcott's Measurement of Intuitive Leaps

The Westcott instrument is a series of 20 problems, containing distinct pieces of relevant data, obtainable only in a fixed sequence (Westcott, 1961, p.269). The instrument determines the distribution of individuals along two dimensions: willingness to make inferences based on little information, and the degree of correctness of conclusions reached (Westcott, 1961, p.267). The tool operates on a perceptual inference definition of intuition as, "the process of reaching a conclusion on the basis of little information which is normally reached on the basis of significantly more information" (Westcott & Ranzoni, 1963, p.595).

The results produce a profile of the subjects as:

1. **Intuitive thinkers** - those using little data to reach correct conclusions

2. **Wild guessers** - those using little data but reaching incorrect conclusions

3. **Careful successes** - those using a lot of data to reach

correct conclusions

4. **Careful failures** - those using a lot of data but reaching incorrect conclusions

The Westcott instrument was used primarily for aptitude and vocational testing in the late 1960s, but there is little reference to its use as an instrument to measure intuition since that time (Wescott, 1968a; Westcott, 1968b).

Intuition Quotient Test (IQ2)

The Intuition Quotient Test (IQ2) was developed in the early 1990s by Daniel Cappon, a contemporary Canadian psychiatrist, who is a well-known proponent of the value of intuition in a variety of human enterprises. The IQ2 tests for a set of 20 skills which Cappon has determined are elements of intuition. The test consists of a set of more than 300 visual images that examine the twenty skills in four categories of objects (inanimate, plant, animal and human), and four levels of difficulty (number of perceptual cues increase with each decreasing level of difficulty). The pictures are flashed across the screen for seven seconds and the participants are then asked to answer questions about the picture frameworked by the words: who, what, which, when, how and why (Cappon, 1993). No reference in the literature to the tool being used by anyone other than Cappon was found.

Miller Intuitive Instrument (MII)

The Miller Intuitive instrument (MII) was developed by Dr. Virginia Miller as part of her doctoral work in nursing at the University of Texas at Austin (Appendix I). Dr. Miller's instrument is a Likert scale questionnaire containing 43 items that measure a nurse's self-perception of intuitiveness. The instrument was tested on 228 practising nurses in Texas and was determined to have construct validity, and to produce valid and reliable statistical results (Miller, 1990, 1993). Dr. Miller has given seven graduate students permission to use the MII in their graduate research projects. As yet, she has received completed results from only one of these individuals, and has not seen any published results from its use by the others in the literature (Dr. Virginia Miller, e-mail communication, February 23, 1998).

Himaya Intuition Semantic Scale (HINTS)

The Himaya Intuition Semantic Scale (HINTS) was developed by Dr. Jo Ann Himaya as part of her doctoral work in nursing at Texas Woman's University. Based on support from the literature, Dr. Himaya selected four measurement components for her instrument: wholeness, approximation, spontaneity, and personalization. The instrument was tested on a random sample of 450 nurses. The results indicated the

instrument had both methodological and construct validity and was statistically reliable (Himaya, 1991). No evidence was found in the literature of the HINTS tool being used beyond its original work.

PART FOUR - EXPERTISE: THE CONCEPT

The Nature of Expertise

Although the literature provides a number of theories about the nature of expertise, Kassinger, Kuipers and Gorry (1982) make the compelling argument that it is unlikely that "expertise...will be found to derive from a single, general-purpose, problem-solving method" (p.253).

Chi, Glaser and Farr (1988) describe the following seven characteristics of experts:

1. **Experts excel in their own domains** - This domain-specific expertise is not transferrable to other domains, because its basis is a rich mass of domain-specific knowledge.

2. **Experts perceive large meaningful patterns in their domains** - This reflects the unique organization of the expert's knowledge base.

3. **Experts perform the skills of their domain rapidly. They solve problems quickly, and with little error** - This occurs because practice produces automation, and cognitive pattern recognition versus piece recognition.

4. **Experts have superior short-term and long-term memory** - This occurs because the automaticity of much of the expert's skill frees up considerable memory storage capacity.

5. **Experts see and represent a problem in their domain at a deeper level** - This occurs because the expert's richer knowledge base allows for semanantic or principle-based categorizing.

6. **Experts spend considerable time analyzing a problem qualitatively** - This occurs because the expert builds a mental representation of a problem from which inferences, relationships, and alternatives can be examined.

7. **Experts have strong self-monitoring skills** - This is related to the expert's deeper knowledge base which allows for better predictablity of the complexity, difficulty and nuances of a problem (pp. xvii-xx).

Benderly (1989) supports several of the points made above, and believes that as an expert's knowledge base expands, thinking patterns change. Benderly quotes Robert Glaser as saying, "[As] the [expert] information base...[becomes] larger...it becomes more abstract, more organized for use...more principled...[more] structured around underlying regularities" (p. 36). Sternberg and Horvath (1995) have similar views and suggest that "experts bear a family resemblance to one another" (p. 9). Further,

Sternberg and Horvath's research and writings on expertise in teaching identify a prototype of the expert very similar to that of Chi et al. (1988). The characteristics of the Sternberg and Horvath prototype expert are:

1. **Experts bring more knowledge to bear more effectively on problems within their domain of expertise than do others** - The organization of the expert's knowledge base, combined with better known and utilized social and political domain knowledge (domain 'street smarts'), is responsible for this characteristic (Sternberg & Horvath, 1995)

2. **Experts solve problems more efficiently and with less effort within their domain of expertise** - Because experts, through practice, automatize well-learned skills, their cognitive energy can focus on non-automatized knowledge processing (Sternberg & Horvath, 1995).

3. **Experts use higher order, executive processes in solving problems** - Sternberg (1985) says this involves the use of cognitive metacomponents that allow for defining the problem, and planning, processing, monitoring, and evaluating problem-solving in process. Research by Larkin (cited in Sternberg & Horvath, 1995) demonstrates that experts spend considerable time gaining an understanding of all the components and ramifications of the problem before they begin to solve it.

4. **Experts arrive at more creative solutions to problems** - Sternberg (1985) postulates that this creativity is the result of three underlying processes at work in expert problem-solving. These three processes are:

Selective encoding - the process of differentiating relevant from irrelevant data.

Selective combination - the process of recognizing relevant relationships among pieces of data.

Selective comparison - the process of applying information acquired in another context to this problem through analogy.

The literature relates a number of theoretical explanations for the cognitive processes associated with expertise. A brief description of these theoretical explanations follows.

Chunking Theory

One of the most frequently supported theories in the literature is that experts cognitively 'chunk' . This 'chunking theory', first postulated in the late 1950s, is well-researched in the work of Larkin, McDermott, Simon, and Simon (1980). The premise of chunking theory is that, as a result of repeated exposure to a data set as a group, experts recognize the grouping as a singular whole. This

chunking pattern is supported by other authors including Benderly (1989), Dreyfus and Dreyfus (1986), Hampton (1994), Hunt (1982), Glover, Ronning and Bruning (1990), Pichert and Elam (1985) and Thompson, Ryan, and Kitzman (1990). According to Pichert and Elam (1985), the more expertise the individual has, the bigger, better organized, and more numerous and interrelated the chunks become. Benderly (1989) states that chunking effectively "moves more and more of the intermediate stages [of cognitive processing] out of awareness" (p. 40).

Network Theory

The spreading-activation theory of semantic processing (network theory) proposed by Collins and Loftus (1975) is also used to describe the cognitive nature of expertise. Network theory contends that cognitive elements are represented as nodes in a network. The network supports bidirectional links between the nodes (Collins & Loftus, 1975). Thompson et al. (1990) suggest that new experiences within a discipline cause new nodes and new relationships to be added to the network. Expertise gained through experience strengthens node relationships, and increases the speed, efficiency and automaticity of the synapses.

Schema Theory

Schema theory purports that knowledge is organized into representations called schemata, which are prototypes, or structural descriptions (Glover et al., 1990). New information entering the cognitive system is put through a pattern matching process, and when the best schemata match is made the information is encoded and stored in that particular schemata. Anderson (cited in Hampton, 1994), contends that schemata may be linked hierarchically. This schemata matching can go from bottom up or top down in the hierarchy simultaneously. Glover et al. (1990) believe that expertise relates to schemata development in three ways:

1. **Accretion** - with the increase in knowledge that results from expertise, schemata change so that greater matching flexibility within the schema system can occur.

2. **Tuning** - schemata are fine tuned and modified so that they become more useful and efficient in relation to the purposes for which they were designed.

3. **Re-structuring** - new schemata are created.

In other observations of expertise, Kolodner (1984) contends that the difference between expertise and novice performance is related to the relationship between theoretical knowledge acquisition (semantic memory) and

experiential knowledge acquisition (episodic memory). The novice, according to Kolodner, can theoretically have the same amount of semantic store as an expert, but he/she **cannot have** the same amount of episodic store. It is the episodic store that allows the expert to interpret and use the semantic store more effectively and efficiently than the novice. The efficiency of expert processing is reflected in Crandall and Getchell-Reiter's (1993) research which supports the contention that experts can be differentiated from non-experts by their superior ability to use perceptual skills. Experts noted subtler and more numerous cues in the study situations, and noted such cues quicker than non-experts.

Dreyfus and Dreyfus (1986) believe that experts can be differentiated from non-experts by their:

1. ability to perform fluidly

2. deep involvement with their task

3. ability to become 'one' with the task

4. holistic grasp of situations

5. use of deliberative rather than calculative rationality (pp. 30-38).

The Expert versus the Experienced Non-Expert

While experience is a critical factor in the development of expertise, not everyone with vast domain-specific experience becomes an expert. Bereiter and Scardamalia (1993) contend that experts use cognitive resources that have been freed-up through automization to develop higher-order, more complex problem solving models. Experienced non-experts, on the other hand, use freed-up cognitive resources to spend more time trying to structure problems to fit the already known problem-solving methods.

A qualitative study by Hanneman (1996) examines this difference between expert and non-expert practice in nursing. Hanneman's study endorses, through the constant-comparative method of grounded theory, two different processes in play as nurses gain domain-specific experience. Nurses who convert to the **Gestaltic Nursing Process** become experts, nurses who remain in the **Dissociative Nursing Process** do not. The two processes are delineated in Figure 1. The transition from non-expert to expert is described by Hanneman (1996) as a ***Theory of Conversion***, in which the nurse is seen to develop clinical expertise through the methodical acquisition of flexible, context-dependent problem-solving strategies (p. 334), and re-defining domain boundaries in a broader, more context-dependent manner (p. 335).

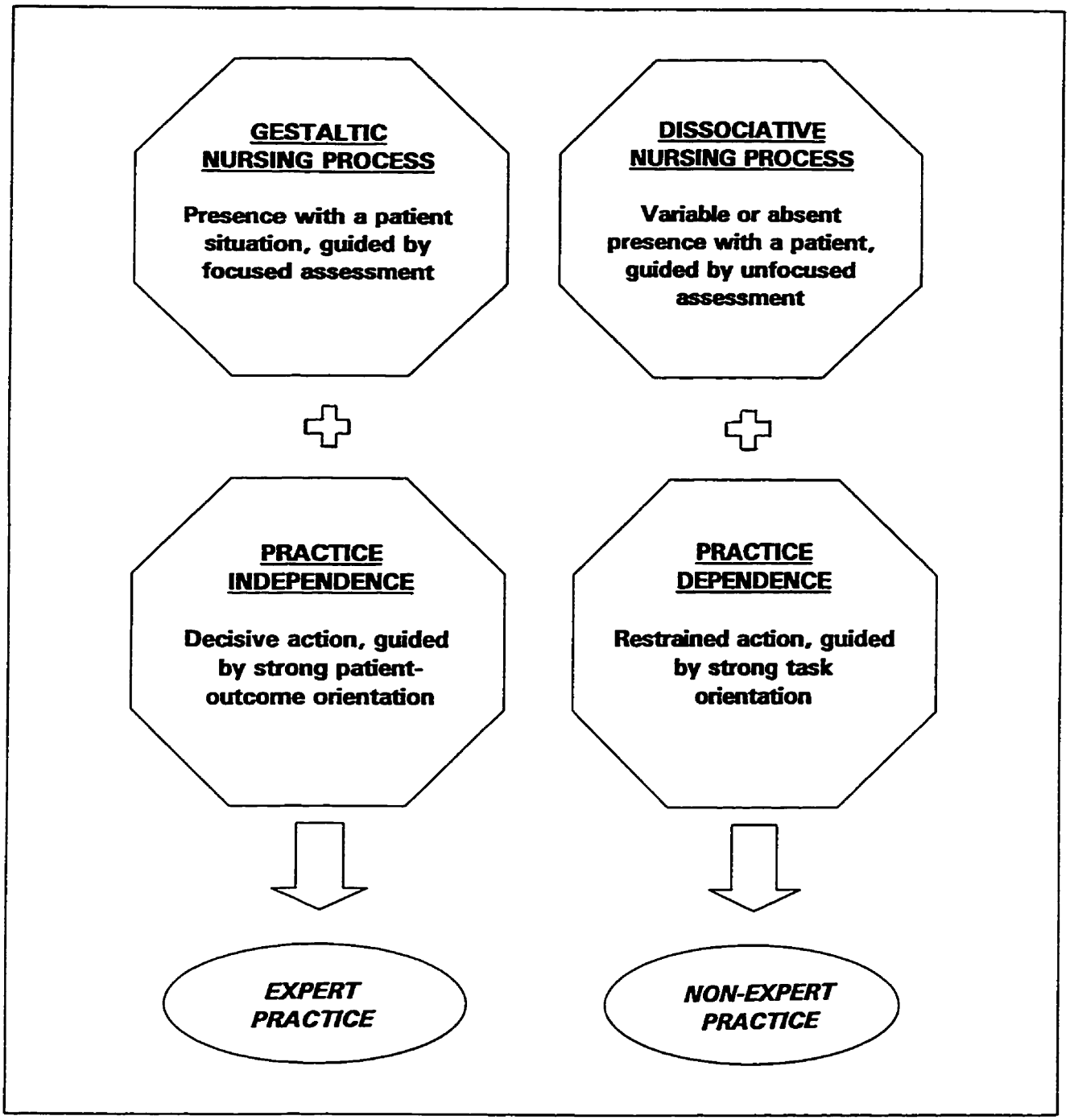

Figure 1: Characteristics of the Practice of Expert and Non-expert Nurses (Hanneman, 1996, p. 332)

Expertise in Nursing

Studies and writings on expertise in nursing provide data that are consistent with findings in studies and writings on expertise in other fields. The work of Benner (1983, 1984), Benner and Tanner (1987), Benner, Tanner and Chelsea (1996) and Benner and Wrubel (1982) on expertise in nursing describe it as:

... based on -

1. past concrete situations that become paradigms. These paradigms act as turning points in knowledge acquisition and processing.

2. context-driven, situation-specific knowledge that is embedded in practice.

... developed through -

1. testing, revision and refinement of theoretical knowledge through practice experience.

... and characterized by having -

1. an ability to detect meaningful data, and cue in to subtleties quickly.

2. an holistic perspective of the patient situation.

3. a deep grasp of the patient situation in context.

4. deep involvement with, and commitment to, the patient.

5. an ability to provide response-based practice.

6. embodied know-how.

7. ability to use critical reflection in relation to practice.

One of the key elements of Benner and colleagues' tenets is that rule-bound practice hinders expertise, and that the practice of experts forced to follow rules will deteriorate (Benner, 1984; Dreyfus & Dreyfus, 1986). Other works on expertise in nursing support this key belief of Benner and her colleagues. The characteristics of expertise in nursing noted in other literature on the topic include a practice supported by the ability to:

1. recognize and discriminate subtle patient cues.

2. use a rich, deep, clinically-based, context-driven knowledge base.

3. gain a deep grasp of the patient situation and circumstances.

4. use patient-centred perception.

5. use critical reflection.

6. gain an holistic grasp of the patient situation.

(Connors, 1995; Crandall & Getchell-Reiter, 1993; Eberhart, 1992; Elster, 1987; Harbison, 1991; Hellner & Norberg, 1994; Hooper, 1994; Kramer, 1996).

PART FIVE - INTUITION AND EXPERTISE

The Relationship Between Intuition and Expertise

Researcher and Nobel Laureate Herbert Simon believes that expertise and intuition are not separate concepts, but aspects of the same thing. Further, Simon contends that intuition is "the predictable product of the way experts think...[experts are] intuitive precisely because - and to the extent that - they possess expertise" (Benderly, 1989, p. 36). Cappon (1989, 1993) supports Simon's view, and adds that the more expertise people have, the more intuitive they are in that domain.

My literature search produced 16 studies by nurses in which the relationship between intuition and expertise was examined in some context. Of those 16 studies, 15 supported a significant relationship between expertise and the use of intuition (Christie, 1996; Connors, 1995; Downey, 1991; Eberhart, 1992; Elster, 1987; Harlowe, 1994; Hellner & Norberg, 1994; Hempall, 1996; Kelly, 1995; Kramer, 1996; Pyles & Stern, 1983; Schraeder & Fischer, 1987; Slunt, 1989; Tanner, 1993; Williams, 1996). Only one study, by McGregor (1991), found that intuition was not significantly

related to expertise development, although the researcher did note that the nurse participants stated that intuition was an important element of their practice.

The Work of Hubert and Stuart Dreyfus, and Patricia Benner and Colleagues on Intuition and Expertise

The work of Dreyfus and Dreyfus (1986) delineated five stages in the development of expertise: Novice, Advanced Beginner, Competence, Proficiency and Expertise (pp.16-51). They theorize that the use of intuition begins in the proficiency stage, and becomes fully operational in all aspects of performance in the expert stage. (pp. 29-30). The Dreyfus' model of skill acquisition, and their ***Six Key Aspects of Intuitive Judgment*** (delineated in detail in **PART FIVE - THE CONCEPTUAL FRAMEWORK**), form the underlying framework for the landmark research of Dr. Patricia Benner and colleagues on expertise, skill development and intuition which began in the early 1980s.

Benner (1984) and Dreyfus and Dreyfus (1986) argue that there are limits to formalizing knowledge and skill. They believe, and their work supports, that some aspects of knowledge and skill cannot be totally explained by linear, objective means. Benner and Tanner (1987) and Dreyfus and Dreyfus (1986) contend that it is intuitive judgment that distinguishes human expertise from artificial intelligence. More recently, Benner et al. (1996) supports that "expert

practice is characterized by increased intuitive links between seeing salient issues in a situation and ways of responding to them" (p. 142). Benner and various colleagues have become synonymous with in-depth qualitative work in the area of expertise, intuitive judgment, caring and excellence in nursing practice.

The Voice of the Detractors

Benner, (and by association, Hubert and Stuart Dreyfus), are not without their detractors. The four published critiques of Benner's work are all by nurses from the United Kingdom. The most plausible reason for this geographical anomaly is that Benner's (Dreyfus') model of skill acquisition has gained widespread acceptance as a suitable framework for the United Kingdom's nursing education reform project known as *Project 2000* (English, 1993). As with all major conceptual changes in education, such scholarly discussion is important and useful. The major themes in the criticisms are that Benner:

1. supports a model for intuitive judgment that can be explained by cognitive memory models (English, 1993).

2. proposes a definition of intuition that is subjective and questionable, and of limited value until it can be empirically validated (English, 1993).

3. supports a model that is too contextual to be empirically valid (Cash, 1995).

4. provides examples of expert nursing, but never defines an expert nurse (English, 1993).

5. uses peer assessment to determine who is an expert, which has methodological shortcomings (English, 1993).

6. uses arbitrary means for coding expert behavior in nursing, which results in the concept of such expertise being arbitrary (Cash, 1995).

7. tries to generalize in context experiences (Bradshaw, 1995).

8. implies that intuitive knowledge is the exclusive domain of the expert (Paley, 1996).

9. has a feminist agenda, and devalues rational thought too much (Bradshaw, 1995).

10. supports a concept (intuition) which can have value only in situations where all the players have equal power. Therefore in the nurse-other situations of unequal power, intuition requires a power broker (Cash, 995).

11. does not state whether expertise is a finite skill, or one which may contain levels within it (English, 1993).

12. does not provide a basis on which the rightness or wrongness of intuitive knowledge can be judged (Bradshaw, 1995).

The literature does offer one response in favour of Benner's model from a United Kingdom source. This work, along with Benner's own response to these criticisms, provide rationale as to why these criticisms may be invalid. Darbyshire (1994) believes that the biggest flaw in the criticism of Benner's work is that it has a cognitivist bias, and never addresses Benner's underlying philosophical framework of Heideggerian phenomenology. Her detractors contend that Benner has ignored cognitivism as an option. Darbyshire contends that Benner has not ignored cognitivism, she has seen it as insufficient to explain intuition in the context of expert practice. This view of the inadequacy of cognitivism is supported by the research of Eberhart (1992) who contends that expertise and intuitive thinking confound the model of technical rationality. Benner (1996) believes that the traditionalist opposition to her work is not helpful to nursing, and a more cooperative approach to the articulation of clinical nursing knowledge can only benefit the profession.

PART SIX - THE CONCEPTUAL FRAMEWORK

The literature provides six potential frameworks for a study of intuition. The massive work of Tony Bastick (1982) provides a well-supported set of 20 ***Properties of Intuition***. However, these properties are too numerous and broad, and unrelated to expertise, to be a suitable conceptual framework for this study.

A less commonly known model is Simonton's ***Model of Intuitive Processes***. This model is an information-processing model that delineates personality profiles based on an analysis of intellectual associations of conditional probabilities. The model proposes four personality types, using the total number of intellectual associations, and the consciousness-level in which these associations are made, as the dimensions of the typology. The four typologies are: **Intuitive Genius**, **Analytical Genius**, **Intuitive Normal** and **Analytical Normal** (Simonton, 1980, p.14-17). Simonton's model distinguishes intuitive capability among personality types, but this distinction is made at a purely intellectual level. The model allows the researcher to do empirical study of intellectual intuitive capability, but does not allow for examination of the actual use of intuition, or the relationship between expertise and intuition.

Herrmann's 1981 ***Brain Dominance Model*** assesses cognitive processes on the basis of brain-sided dominance,

and has a quadrant structure similar to that of the Simonton model (Norris & Achilles, 1988). Its rejection as a suitable model for this study is also based on its emphasis on intuition as a capability, rather than an actual used skill, and its inability to examine intuition in the context of expertise.

The ***Process/Phases of Intuition*** is a conceptual model developed by Chinen et al. (1985) from their research on the use of intuition by senior managers in business and training analysis settings. Their model shows intuition as a set of steps:

First step - attunement is the step of becoming psychologically 'open' to intuition.

Second step - articulation is the step in which the intuition expresses itself in a symbolically meaningful way to the intuiter.

Third step - interpretation is the step in which the intuiter deciphers the meaning of the intuition (p.194).

The Chinen et al. model is attractive because of its simplicity. However, it is designed to be used in situations where intuition is viewed essentially as a creative process, rather than an evaluative or assessment one. Similar process models developed earlier by Wallis (cited in Norris & Achilles, 1988), and later by Cappon

(1989), are also primarily focused on intuition as creative process.

The ***Nursing Gestalt Model*** of Pyles and Stern (1983) has an intuitive component that would be useful in analyzing intuition and expertise in clinical nursing instructors. The model was developed using research that examined the cognitive processes used by experienced critical care nurses in making assessments and judgments related to patient care. The researchers describe the model as a "matrix operation whereby nurses link together basic knowledge, past experiences, identifying cues presented by patients and sensory clues including what nurses call 'gut feelings'... nurses then use the strategies of categorization and differentiation to arrive at diagnoses on which they base their care. Nursing Gestalt is a synergy of logic and intuition involving both conceptual and sensory acts" (Pyles & Stern, 1983, p. 52). The following is a figurative representation of the model:

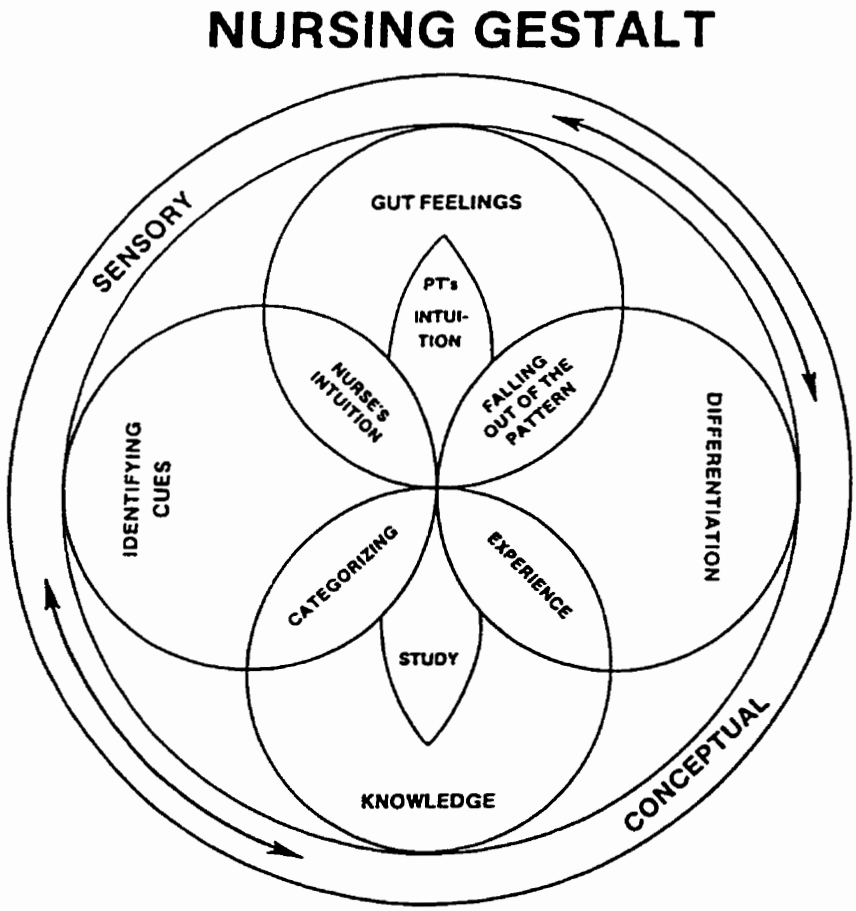

Figure 2: Representation of 'Nursing Gestalt' (Pyles & Stern, 1983, p. 52)

By analyzing intuition in the practice of experienced nurses, the Pyles and Stern model has potential for use in an examination of intuition and expertise. However, there are two aspects of the model that make it unsuitable for this study. First, the model is designed for use in clinical practice, and patient intuition is a major

element of the intuitive component. Second, and of more significance, the model is a synthesis of analytical and intuitive processes, and using it as means of analyzing the intuitive process alone would be unsound.

The ***Six Key Aspects of Intuitive Judgment***, as postulated by Dreyfus and Dreyfus (1986), provides the most useful currently available framework from which to examine the intuitive practices of expert clinical nursing instructors in assessing and evaluating nursing student clinical performance. The six aspects of the Dreyfus model are:

1. Pattern recognition - The ability to perceptually recognize configurations and relationships in contextual, unstructured and ambiguous real-life circumstances (Benner & Tanner, 1987, p.24; Benner et al., 1996, p.23; Gruber, 1989; McMurray, 1989).

2. Similarity recognition - The ability to recognize vague resemblances in circumstances and situations which, on the surface, appear to have significantly different overt features. As well, similarity recognition describes the ability to recognize dissimilarities in circumstances and situations which, on the surface, have significantly similar overt features (Benner & Tanner, 1987; Dreyfus & Dreyfus, 1986).

3. Commonsense understanding - The ability to deeply grasp the meanings in a situation, using the known culture and language of the experience. It includes being flexible in understanding human experiences in the diverse and context-laden circumstances in which they usually occur (Benner & Tanner, 1987; McMurray, 1989).

4. Skilled know-how - The embodied knowledge that comes from practice and experience. It is the ability to perform in a manner that allows the performer and the activity to become one. Skilled know-how considers all the possibilities in inexact circumstances (Benner & Tanner, 1987; Benner et al., 1996; Dreyfus & Dreyfus, 1986).

5. Sense of salience - The ability to readily determine the level of importance of data which have only subtle distinctions and differences among them, and which present in inexact, context-laden situations (Benner & Tanner, 1987; Benner et al., 1996; Dreyfus & Dreyfus, 1986).

6. Deliberative rationality - The ability "to experience a change of perspective by looking at a non-salient element [of a situation] until it becomes salient" (Dreyfus & Dreyfus, 1986, p. 38). It suggests the ability to look at a situation from another perspective which may allow re-interpretation of the meaning of data. McMurray (1989) purports that developing a web of perspectives for examining

situations is possible.

There are a two major reasons why the Dreyfus model is highly suitable for use with this study. First, the Dreyfus perspective on skill acquisition posits that it is at the expert level that practitioners in any field demonstrate consistent ability to use the ***Six Key Aspects of Intuitive Judgment*** in a synergistic, holistic manner (Dreyfus & Dreyfus, p.30-36). Thus, using the model as a conceptual framework for this study is logical, and may support or reject the Dreyfus perspective on intuition and expertise.

Second, the framework has already been used in nursing studies examining expertise and intuition in clinical nursing practice. A qualitative study by Benner and Tanner (1987) examined the nature and role of intuition in the clinical judgment of expert clinical nurses. The analysis and classification of the data collected through interviews and observations of the 21 expert nurses provided consistent and numerous behavioral examples of each aspect of the Dreyfus model.

More recently, Eberhart (1992) examined the clinical thinking of expert clinical nurses in indeterminant practice situations. The Dreyfus model was used to design an interpretive research methodology for the study. The results of the study illustrated that expert clinical thinking involves a capacity to understand situations in

context, a hallmark of the Dreyfus model.

Christie (1996) used elements of the Dreyfus model in her study of the role of cognitive variables and experience in the expertise of nurses' clinical judgments. The results of her study supported the Dreyfus model, particularly the pattern recognition element, of intuitive expertise.

Although the Dreyfus model was not the formal framework, an ethnographic study by Leners (1990), discovered elements of commonsense understanding and pattern recognition as part of the cultural themes that describe the meaning of intuition in nursing practice.

The Dreyfus model thus enables the examination of intuition in the context of expert practice. The model also provides a logical framework for classifying qualitative data related to expert use of intuition. Further, its previously successful use as a conceptual framework by other nurse researchers examining intuition and expert practice, make Dreyfus' ***Six Key Aspects of Intuitive Judgment*** an appropriate choice of conceptual framework for this study.

A Summary: Reflections on the Literature Review

The massive quantity of literature on intuition, expertise, and the relationship between intuition and expertise, examined for this study was, at times,

overwhelming. Efforts to provide a general overall narrative summary were fraught with frustration, and bogged down with content. It finally became apparent to me that a schematic representation of the literature review might provide a visual summary from which a short narrative summary could be extracted. Figure 3, which follows, is a schemata that visually explains the literature review from my perspective. A short narrative summary of the visual schemata, and some personal reflections on the literature, follow Figure 3.

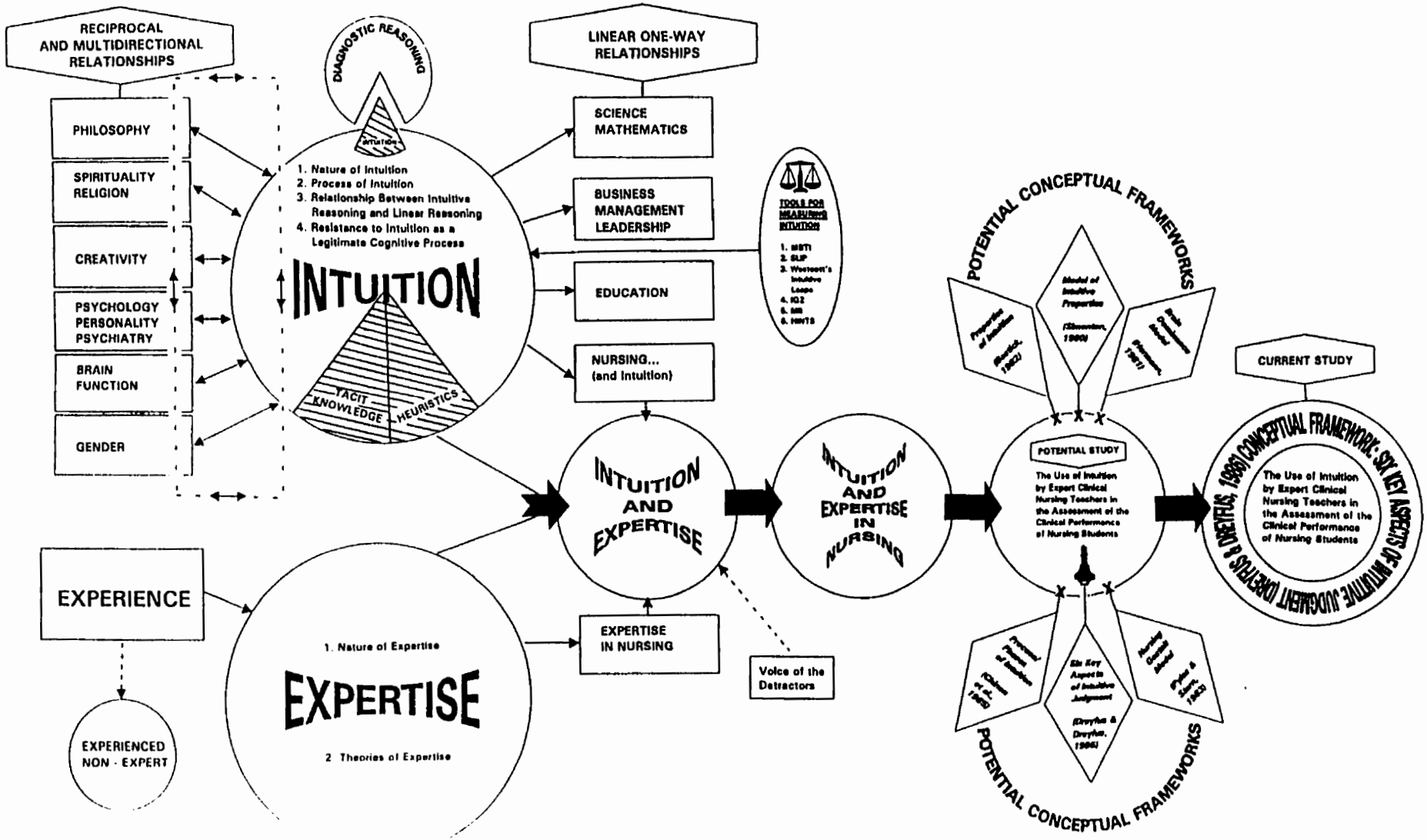

Figure 3: Schematic Representation of the Literature Review

Moving from left to right in the schemata, the literature review showed that intuition has been of interest to humanity since ancient times, from a number of different perspectives and fields of study. The six fields of study/perspectives on the upper far left of the diagram are those that have reciprocal relationships with intuition, and multi-directional relationships with each other and intuition. Each of these fields of study/perspectives has helped illuminate the nature and process of intuition, and the relationship between intuition and linear reasoning. As well, intuition has had some degree of influence on the development of each of the fields of study/perspectives. Further, each individual field of study/perspective has had some degree of influence on the development of the others, and on the relationship of the others to intuition.

Diagnostic reasoning, shown above the intuition circle, was described in the literature as a process of which intuition is a component. Those that argued from the cognitivist perspective purported that intuition is probably heuristic processing, or perhaps tacit knowledge. However, as can be seen within the intuition circle itself, other literature suggested a more likely explanation is that heuristics and tacit knowledge are components of intuition.

On the bottom left of the diagram, experience was seen in the literature as essential to, but not an assurance of, the development of expertise. As the diagram shows,

experience results in the development of either an expert or an experienced non-expert. The literature review provided an explanation of the nature and theories of expertise that helped illuminate what expertise is, and how it develops.

The middle upper section of the diagram shows four fields, one of which is nursing, that have a relationship with intuition that is primarily linear and one-way. There was further evidence in the literature as to the degree to which intuition has influenced, or has been used in the development of, each of these fields. Further to the right, the literature review provided a description of six (6) known tools for measuring intuition.

The middle lower section of the diagram shows a box that represents the part of the literature review that described the nature of expertise as it is seen within the field of nursing. The circle above this box shows that there is evidence that supports the relationship between intuition and expertise. The box to the lower right of that circle notes that there is also evidence in the literature that refutes this relationship.

Once intuition and expertise within the field of nursing are added to the intuition and expertise circle, a narrower literature review focused on intuition and expertise in nursing. It is at this stage of the literature review that the relevance of my study topic becomes most apparent. In order for the study to made operational, I

needed to discover a suitable conceptual framework. Six potential frameworks were examined. Rationale was then provided for why the Dreyfus model known as ***The Six Key Aspects of Intuitive Judgement*** was the most suitable framework (represented in the schemata by a key) for this study. The final circle shows the current study prepared for implementation with an appropriate conceptual framework.

Four key themes extracted from the literature underscore the usefulness of my research. First, it is clear in the literature review that intuition exists. There is little argument suggesting that it does not exist. Controversy in the literature is primarily related to why, how and when intuition exists. Second, there is evidence in the literature that intuition is, to a greater or lesser degree, part of the repetoire of day-to-day existence of most human beings. However, as humans become expert in a particular field or profession, they develop a specialized intuitive skill related to that expertise. Third, intuitive knowledge has been a component of the discovery of new knowledge by highly respected people in almost every field of human endeavour. The public admission of this use by mainstream members of most fields, however, is almost non-existent. Finally, there is evidence to suggest that with more advanced discoveries of knowledge in many fields of study, intuition is beginning to see a revival of acceptance.

CHAPTER III

METHODOLOGY

Reflecting the broad nature of the research questions identified in Chapter I, a qualitative, exploratory design was selected as the methodological approach for this study. The research design, population and participant selection process, instrument design, data gathering process, plan for the analysis of data, means of establishing trustworthiness, rights of human participants and ethical considerations, and preparation of the data for analysis are presented in this chapter.

Research Design

A qualitative research approach was selected for this study because little is known about the use of intuition by expert clinical nursing teachers in the assessment of the clinical performance of nursing students. Polit and Hungler (1997) identify the qualitative design as appropriate in situations where little is known about a phenomenon. The literature review identified considerable research on the concept of intuition, and on intuition as an element of expertise. Only the studies by Kramer (1996) and Scanlan (1996) identify intuition as an element of the expert practice of clinical nursing teachers. However, the exact nature of how this intuition is used is not elaborated

in depth in either study.

Nieswiadomy (1993) states that qualitative designs let the researcher look for patterns and themes associated with a phenomenon or concept, and allow an inductive process of examination. Burns and Grove (1993) further suggest that a qualitative design promotes the opportunity to determine meaning, describe in depth and categorize.

Several potential criteria, appropriate for selecting an exploratory approach, were identified in the literature. The following eight were considered relevant to this study:

1. The topic has not been previously studied from this particular point of view (Brink & Wood, 1989, p. 145).

2. There is a need to make sense of a known [concept] (Brink & Wood, 1989, p. 142).

3. Rich descriptions of the concept under examination are desired (Morse, 1991, p. 21).

4. Delineating the manner in which a phenomenon is manifested is desired (Talbot, 1995, p.90).

5. The sample [participants] have personal experience with the concept (Brink & Wood, 1989, p.145).

6. A small, purposive participant selection strategy is to be used (Brink & Wood, 1989, p. 159).

7. The analysis of data may involve a return to the participants for verification (Brink & Wood, 1989, p. 159).

8. Unstructured data collection techniques and analysis are to be used (Brink & Woods, 1989, p.159).

Because all the criteria listed above were considered relevant to this study, the exploratory design was determined to be the most legitimate and appropriate to capture the desired data.

Population and Participant Selection Process

The literature on exploratory research contends that the target population is anyone who has experienced the concept under study (Brink & Wood, 1989). The nature of this study identified the target population as expert clinical nursing teachers, as defined in Chapter I. The true target population was expert clinical nursing teachers teaching in undergraduate educational programs for registered nurses at three sites in Manitoba.

Because of the nature of exploratory studies in general, and the need for a group of experts, the strategy for participant selection was purposive. Polit and Hungler (1991) state that a purposive participant selection strategy is often used when the researcher wants a group of experts (p. 260). As well, Morse (1991) purports that since the purpose of qualitative research is not the generalizability

of findings, the parameters that bind participant selection in quantitative research do not have the same implications or meaning in qualitative studies. Morse (1991) further states that the most important factors to consider in evaluating the participant selection in qualitative studies are:

1. **Appropriateness** - the degree to which the choice of informants and method of selection 'fits' the study as determined by the research question (p. 134).

2. **Adequacy** - the degree to which the informants are able to provide sufficient, quality data to answer the research question(s) (p. 134).

The choice of informants for this study clearly 'fits' the needs of the research question(s). The number of participants selected was based on what previous researchers doing similar studies in nursing selected. An overview of 14 exploratory and exploratory/descriptive studies related to:

a) nursing and intuition

b) nursing and expertise

c) nursing and expertise and intuition

conducted since 1990, determined a range of 16 participants

to one participant, with the majority (seven studies) having three to six participants (Connors, 1995; Cooper, 1994; Downey, 1991; Eberhart, 1992; Hooper, 1994; Jennings, 1990; Kelly; 1995; Kramer, 1996; Leners, 1990; McGregor, 1991; Miller-Field; 1992; Nixon, 1995; Rew, 1991; Scanlan, 1996). On the basis of this analysis of current similarly-designed studies, the size of the participant group selected for this study was a minimum of 5 participants, and a maximum of 10 participants, dependent on the level of saturation in the data.

The administrative heads of three selected nursing education programs in Manitoba were contacted in writing to identify members of their faculties who fit the criteria of an expert clinical nursing teacher, as defined in Chapter I, and to request access to potential study participants (see Appendix B). This written contact included a brief description of the study and the research process to be used. It also included a copy of the ethics review proposal submitted to the Ethical Review Committee of the Faculty of Nursing, University of Manitoba. Further, the request contained the criteria for selection of potential participants, and detailed how potential participants would be contacted, what information they would be asked to provide, and how they would be ethically protected during the research process.

As more than 10 potential participants who met the selection criteria were identified at the three sites combined, a selection process was needed to ensure a degree of representation from each site. Since all the potential participants met the selection criteria, participants were selected randomly from the pool at each site. This random selection process was a method of convenience, and not used as a sampling strategy in the manner of quantititaive research. The selection strategy used is detailed in Table 1. This participant selection process served two purposes. First, it solved a concern expressed by the Ethical Review Committee as to how participants would be selected should more than the maximum of 10 be identified (see Appendix M). As well, ensuring that there was participant representation from each of the three sites, increased the potential for variation in participant responses. In qualitative exploratory studies, variation in responses produces a broader look at the scope and patterns of the phenomenon under question (Polit & Hungler, 1997, p. 237; Talbot, 1995).

Table 1: PARTICIPANT SELECTION DEMOGRAPHICS

Site	*Number of potential participants identified*	*Number selected and contacted*	*Number available and willing to participate*	*Number who actually participated*
# 1	14	5	5	5
# 2	11	4	3	3
# 3	2	1	1	1

A written description of the study (see Appendix C) was sent to the selected potential participants, who were later contacted by telephone to determine if they were willing to participate. Follow-up contact could not be made with one potential participant from Site # 2. As the remaining nine contacted individuals were all willing to participate and could be interviewed within a relatively short period of time, and nine participants was only one less than the maximum number of participants warranted for the study, the decision was made not to contact another potential participant unless the data from the first five interviews determined that data saturation was unlikely. A date and time was set for each interview at the time of the follow-up contact.

Instrument Design

Exploratory studies are usually conducted using unstructured data collection procedures. Brink and Wood (1989) contend that "since the point of the research is to get at the desired information in the best or most efficient way possible, a trial-and-error approach to what works, with whom, and when, is required" (p. 149).

A common method for gathering data in exploratory studies is the unstructured or semi-structured interview (Polit & Hungler, 1997). By offering flexibility, such interviews can allow for in-depth exploration. The decision was made that semi-structured interviews with each participant would be an appropriate data collection process for this study.

Semi-structured Interview Questions

The design of the semi-structured interview questions was established by the need to access specific information based on the conceptual framework, and the need to access that information in as much breadth and depth as possible. Seven semi-structured questions were designed to guide the interview narratives. Benner et al. (1996) describe "the narrative form of expression [as the one which] most closely matches the structure of everyday living and ... everyday involvements (p.353). Further, "the

speaker is engaged in remembering what occurred in the situation. Spoken accounts allow the speaker to give more details and include concerns and considerations that shape ... experience and perception of [an] event ... Narrative accounts of actual situations give closer access to practice and practical knowledge" (Benner et al., 1996, p.355).

Advice about question design and content was sought from three experts. Dr. Patricia Benner, University of California at San Francisco, is a well-established and respected researcher in the field of expertise in nursing, and the use of intuition in expert nursing practice. Her work is liberally quoted and examined in this study. Her general advice on question content and design was sought and received early in the proposal development stage (see Appendix F). Dr. Benner's general advice was followed in designing a set of draft questions. Dr. Benner's opinion on these draft questions was also sought and received (see Appendix F).

Dr. Virginia Miller, Texas Tech University Health Sciences Center at Lubbock, is the developer of the Miller Intuitive Instrument (MII), a statistically valid and reliable instrument for measuring self-intuitiveness in nurses referred to earlier in this study. Dr. Miller's writings and research on intuition in nursing are also quoted often in this study's literature review. Dr. Miller was contacted (see Appendix G) regarding the MII, and she

sent a complete copy of the tool for use with permission (see Appendix H). While the MII was not an appropriate instrument for use with this study, it did provide several ideas for possible semi-structured interview questions. Dr. Miller's permission to use ideas from the MII, and her advice on the quality and suitability of the draft interview questions, was also sought and received (see Appendix G).

Dr. Lynn Rew, University of Texas at Austin, is another well-known nurse researcher in the field of intuition and nursing, who is cited often in the literature review of this study. Dr. Rew was the third expert from whom guidance was requested and received (see Appendix I). Dr. Rew provided detailed advice regarding the structure and content of the draft interview questions (see Appendix I).

The final set of semi-structured interview questions included revisions and suggestions made by all three of experts. The questions were then reviewed for clarity by three peer colleagues in nursing:

Dr. Evelyn Labun MScN DNSc
Sandra Romano BN MN
Leslie Walsh BScN MEd

who were not potential study participants (see Appendix J). The final set of seven semi-structured interview questions can be found in Appendix K.

Relationship Between the Semi-structured Interview Questions and the Conceptual Framework

The relationship of each semi-structured interview question to the conceptual framework is either direct or inferred. Some questions were designed to elicit data directly related to a category within the conceptual framework. Others were structured such that they allowed the researcher to weigh and determine the value of the data. Thirdly, some questions were designed to allow for the reinforcement or negation of data gathered by other questions. The detailed relationship between the seven semi-structured interview questions and the conceptual framework is described in Appendix L.

Long Interview Techniques Used

While the interviews were conducted using the seven pre-designed, semi-structured questions as salient, the following techniques for long interviews were also used, as appropriate:

1. **'Grand tour' questions** - These questions are general, non-directive and allow the participant to talk about the topic without overspecifying substance (McCracken, 1988). The first pre-designed interview question is a grand-tour question (see Appendix K). Following the first interview, it became apparent that a necessary question needing to be

asked of all participants was a grand-tour closing question. The general framework of that question (Question # 11) is provided in Appendix K.

2. **Other semi - structured questions** - Pre-designed questions # 2 to # 7 (see Appendix K) are semi-structured in that they focus the participant's response, but allow for expansion and elaboration of answers. Again, after the first interview, three additional semi-structured interview questions were asked, if the information being sought by these questions did not come forth unsolicited (see Questions # 8, # 9 and # 10 in Appendix K).

3. **'Floating' prompts** - McCracken (1988) calls the verbal and non-verbal cues which encourage the participant to expand his/her answer 'floating' prompts. 'Floating' prompts includes such things as verbal reflection, repeating or re-phrasing questions, and body language that reflects questioning (e.g. raised eyebrows). Reflection and re-phrasing took place regularly during the interviews in response to lack of understanding of a question, and for clarification of what was said. Considerable use was also made of neutral, conversation-driving 'floating' prompts. Table 3 identifies the actual floating prompts used in the interviews, as determined by analysis of the transcriptions of the interviews.

4. **Planned prompts** - Unlike 'floating' prompts, planned prompts are directive, and include questions which ask for opinions, comparisons, contrasts, exceptions, categorizations, contradictions, inclusions, and exclusions (Brink & Wood, 1989; McCracken, 1988). Pre-designed Questions #2 to # 7 (see Appendix K) have planned prompt elements in them. During the interviews several planned prompts were used to add depth to the data being collected. Table 3 identifies the planned prompts actually used during the interviews, as determined by analysis of the transcriptions of the interviews.

Table 2: ACTUAL PROMPTS USED DURING INTERVIEWS

1. Neutral conversation-driving floating prompts used

- okay...
- yes...
- mm h'mm...
- that's interesting...
- no? (A reflective 'no')...
- really...
- is that so...
- right, right...
- that's an interesting point...
- feel free to think about this for a minute...
- that leads me to the next question which is...

2. Floating prompts requesting expansion/detailing of responses

- such as...
- for example...
- for instance...
- Have you had other experiences like that...
- Were there other circumstances like that...
- Can you give me more detail about...
- anything else about that...
- Can you describe that a bit more for me...
- You have already mentioned...but what about...
- Is there anything more specific about...
- What words would you use to describe...
- What words best describe that for you...
- Tell me what they're like...
- Tell me about them...
- When you think about...what comes to mind...
- You mentioned earlier that...
- If you were to think back about...
- Let's go back...
- Let's back track a little...

3. Reflecting and rephrasing floating prompts/Floating prompts asking for clarification

- Do you understand what I'm asking...
- What I heard you say is...
- I think you're telling me...
- Correct me if I'm wrong, but what I think you said is...
- So you see it as...
- Let me ask this another way...
- Am I interpreting you right by saying that you...
- So you feel that...
- So what you're telling me is...
- I'm reading this to mean...
- Let me be sure that I have this correct...
- You'll have to validate this for me, but I'm understanding you to say that ...
- So for the most part you...
- Did you mean...

4. Planned prompts requesting an opinion, a comparison, a contrast or a classification

- Why is that do you suppose...
- In your opinion...
- How do you see...
- as opposed to...
- as compared to...
- What do you think about...
- Tell me how you distinguish that...
- What's the difference between... and...
- Do you see a relationship between...
- What has changed in the way you...
- Can you pinpoint...
- How does that influence...

Investigator as Instrument

Guba and Lincoln (1985) identify the investigator as a positive instrument in the research process. Since exploratory research requires judgement in process, experience and intellect are essential to expert collection of qualitative data. According to McCracken (1988), however, this must be balanced with a concerted effort to be non-directive, unobtrusive, and objective. Cognizant of the need to be unobtrusive at all times, the first tape was reviewed immediately to determine whether objectivity during the interview process had been accomplished. After hearing the tape I concluded that sufficient unobtrusiveness had been achieved, but general 'chattiness' during the interview could have had an inhibiting effect on the participant's efforts. Therefore, a conscious effort was made in subsequent interviews to limit verbal input to that which was necessary to elicit appropriate data from the participant. Consequently, subsequent interviews were more productive.

Data Gathering Process

Plan for Collection of Data

Using the experience of Scanlan (1996), the interview length was planned for a maximum of one and a half hours. With mutual consent, the interview could be

lengthened, or a second one scheduled to complete data collection. A second contact, in person or by telephone, was planned for the purposes of clarification and interpretation of data. If a second interview was scheduled to continue data collection, it was to be in addition to the contact for data clarification and interpretation purposes.

The interviews took place in mutually agreed upon settings, with consideration for privacy and aesthetics (Burns & Grove, p. 336). The interviews were audiotaped with the permission of the participants (see Appendix D). Written notes of any nuances, or non-audiorecordable data deemed relevant to the study were recorded during the interview.

Collection of Data

All nine interviews were conducted over a two-week period. The short time lapse between each interview, and the immediate reviewing of tapes post-interview, kept subsequent interviewes well-focused. Five of the interviews took place in participants' homes, two took place at participants' places of work during off-hours, and two took place at participants' places of work during work hours, but in private settings away from the individuals' actual offices to ensure privacy and confidentiality.

The interviews lasted from 50 minutes to 65 minutes. As no interview went beyond the agreed upon time

length of one and a half hours, no second interviews were necessary. The time length proved quite adequate to gather the data, and participants remained interested and alert throughout the entire interview. Clarification and interpretation contacts were made after the data were transcribed and examined, and data interpretation initiated. All interviews were audiotaped with the permission of the participants, and occasional hand notes were taken during the interviews, as necessary.

Each interview was preceded by 10 to 15 minutes of relaxed, light social conversation. After this social interaction, the study's purpose was again explained to the participants, and the consent form reviewed in detail. Following this, participants were asked to read and sign the consent forms, and complete the demographic data forms. Preparation of the audiotape recording included ensuring that the recorder was operational, and initialing the tape with the date, time of day and participant identifier (i.e. Participant A, Participant B, etc.).

Immediately prior to beginning the interview, and before starting the audiorecording, I described my interest in the research topic, and told the personal clinical story cited at the beginning of the study. Explaining my interest in the topic, and telling the personal clinical story helped focus both myself and the participant before beginning the actual interview. The tape recorder was started, and the

interview began with the first open-ended question, "Tell me about some of your experiences with assessing the clinical performance of nursing students".

The other semi-structured questions identified under **Instrument Design** were used with each participant, unless the information such questions were designed to elicit was provided unsolicited in the ongoing stories participants told during the interviewing process. Reflection and rephrasing of points, examples and opinions given by participants occurred on a regular basis, as a means of maintaining accuracy of understanding of the data being collected.

After some very data rich information was provided unsolicited by the first participant, two things became apparent. First, a grand-tour closing question was needed (see Appendix K, Question # 11). Second, three additional semi-structured questions needed to be available for possible use during subsequent interviews (see Appendix K, Questions # 8, # 9 and # 10).

All interview sessions were relatively relaxed. However, each session became progressively more relaxed as it proceeded, and each subsequent interview was more comfortable than its predecessor, as experience was achieved with the interview process. All the interviews were uninterrupted, with the exception of one. That interruption was minor, and did not affect the flow of the interview.

At end of each interview, after the tape recorder was turned off, I chatted with the participant about the interview. This conversation included, where appropriate, the identification of aspects of the literature that lent support to some of the participants' thoughts and opinions. This seemed to have a positive effect on the participants' confidence that they had provided worthwhile data. Broad themes that were immediately evident, and some of the major data presented in the interview, were reflected back to the participant for clarification and accuracy. The interviews concluded with the participants being encouraged to feel free to contact me should they think of something at a later date that they wished to share with me. Participants were also told that once data analysis commenced, they would be contacted again by telephone to clarify data, and give their thoughts on some of the analysis.

Plan for Analysis of Data

An overview of participant demographics, and a global description of the participants was planned for the beginning of the data analysis. The data would then be analyzed using a content analysis approach. Content analysis involves making decisions about categories of content in the data collected, and assigning data to these identified categories (Brink & Wood, 1989). Themes expressed in data are often natural categories that arise

from content analysis of exploratory studies. The plan designed for content analysis was two-fold:

Level I - Some data were expected to fit into the pre-determined categories of content in the conceptual framework: ***Dreyfus' Six Key Aspects of Intuitive Judgment***.

Level II - Other data were expected to present support for post-determined themes for categories of content exclusive of the conceptual framework.

Taped interviews and handwritten notes would be reviewed immediately after each interview to discover the rudiments of themes on an ongoing basis. The tapes would be transcribed, and data from these transcriptions would then be extracted, coded and analyzed. Data were expected to fit in the pre-determined categories, or provide the means for identifying post-determined categories.

Means of Establishing Trustworthiness

According to Lincoln and Guba (1985) there are four criteria for establishing the acceptance of qualitative study results as trustworthy: credibility, transferability, dependability and confirmability.

Credibility can be defined as "confidence in the truth of the data" (Polit & Hungler, 1997, p. 304), or "ensuring that the researcher has developed plausible

interpretations and conclusions" (Talbot, 1995, p. 487). Credibility is considered comparable to validity in quantitative research (Talbot, 1995). Transferability is best described as the characteristic that "allows someone other than the researcher to determine whether the findings are applicable to another context or setting" (Talbot, 1995, p. 488). Transferability is considered comparable to generalizability in quantitative research (Polit & Hungler, 1997, p.307). However, since generalizability is not an intent of qualitative research, the relevance of this comparison is questionable. Dependability enables someone other than the researcher to logically "follow the process and procedures ... used in the study" (Talbot, 1995, p. 488). It can also be described as "the stability of the data over time and over conditions" (Polit & Hungler, 1997, p. 306). Dependability is considered analogous to reliability in qualitative research (Polit & Hungler, 1997). Confirmability refers to the degree to which "the findings, conclusions and recommendations are supported by the data and ... [the degree to which there is] internal agreement between the investigator's interpretations and the actual evidence" (Talbot, 1995, p. 488). Confirmability parallels objectivity in qualitative research (Polit & Hungler, 1997, p.307).

The following four techniques for meeting the four criteria for trustworthiness were used:

1. **Prolonged Engagement** - Lincoln and Guba (1985) contend that in order for a qualitative study's results to be deemed credible, the researcher must have a prolonged engagement with the culture and environment in which he/she is conducting the study. I have 28 years experience in the profession of nursing. Of those 28 years, 10 were spent in active clinical teaching of nursing students. As well, the overall interview process involved one and a half to two hours of time with the participants including the pre, intra, and post interview phases. Much time was spent setting an atmosphere of trust and frankness in which the interviews could take place.

2. **Member Checks** - The checking of data, analytical categories, interpretations and conclusions with the study participants for correctness and completeness is a crucial technique for establishing credibility. Member checking was performed with each study participant three times. First, considerable reflection and re-phrasing was used throughout the interview process to ensure that the understanding and interpretion of participants' remarks were correct. Second, summary member checks were done after each interview to double-check the ongoing interpretation conducted during the interview. Third, participants were contacted after the first draft of the data analysis was completed to further validate the accuracy and interpretation of data

after some time had lapsed since the interview.

3. **Rich Data Description** - Lincoln and Guba (1985) note that in order for a study to meet the criteria of transferability a rich description of data must be provided. Rich data description allows the reader to determine similarities and patterns. In-depth accounting of both the process, context and content of the data are included in this report. Liberal examples of exact data, and both short and long quotations from participants' narratives, support that rich data description is evident in this study.

4. **Audit Trail** - Halpern (cited in Lincoln and Guba, 1985, p. 319) confirms the value of leaving an auditable trail of materials that can be viewed by an independent inquiry auditor to determine the dependability and confirmability of qualitative findings. An auditable trail of materials including: raw data, data analysis and reduction products, data reconstruction and synthesis products and ad hoc notes related to the study, has been carefully kept. This auditable trail will be kept for seven years, as is consistent with ethical standards, and then destroyed.

Rights of Human Participants and Ethical Considerations

Polit and Hungler (1997) identify the following critical elements of ethical research:

1. **Beneficence** - freedom from harm and exploitation, and a reasonable risk/benefit ratio.

2. **Respect and human dignity** - the right to self-determination, full disclosure and informed consent.

3. **Justice** - the right to fair treatment, privacy and confidentiality.

The study proposal was reviewed by my thesis committee and their suggested changes implemented. The study was also approved by the Ethical Review Committee of the Faculty of Nursing, University of Manitoba and the External Research Committee of Red River Community College (see Appendices M and N).

Prior to giving consent to participate in the study, participants were apprised in writing of the study's purpose, its risks and benefits, and the research process that would be used to collect data. Participants were also provided with information regarding the approval of the interview questions by the my thesis committee and appropriate experts in the field.

In that same letter, and in the consent to participate form, confidentiality of any data provided was guaranteed, and the anonymity of the participant, and any student who might be inadvertently identified in the course of the interviews, was assured. In addition, the right to

withdraw from the study at any time, the right to ask questions during the study, the right to refuse to answer a specific study question, the right to contact me at any time during the study, and the right to have access to the results of the study was guaranteed (see Appendices C and D). The consent to participate form also advised the participants that the interviews would be recorded, and that occasional handwritten notes would be taken during the interviews. Further, the consent form described the means by which anonymity and confidentiality in relation to the processing, use, storage, and publication of data associated with the study would be protected. (see Appendix D) As well, the consent procedure informed the participants that the results of the study might be published.

At the time of the interview, and prior to its initiation, the consent to participate form was explained to the participants. Participants were then asked to read the consent to participate form carefully before signing it. After signing the consent to participate form, participants were given a copy for their own records.

The interviews were conducted at a time and place convenient to each participant. During one of the interviews, the audiotape was stopped to provide needed reassurance to the participant that the student and scenario under discussion would be disguised to protect anonymity and confidentiality.

Two main activities were used in the study to disguise data. First all students were referred to as either gender-neutral or female. Since all interviewees were female, this technique was not necessary to disguise participants. Second, quotations were carefully examined, prior to use, to ensure that the identity of the participant being quoted, or any student being referred to in the quote, was not evident. If such identifiability was evident, the quote was edited to remove it, and that editing noted in the citing.

Preparation of Data for Analysis

Preparation of the data for analysis is critical to the efficiency of the analytical process. Preparation of the data from this study began with listening to each tape, twice, prior to having it transcribed. The tapes were first listened to immediately after each interview took place. This allowed a re-inforcement or negation of themes, thoughts or raw analysis that had previously, tentatively, emerged. It also allowed confirmation or negation of remembered voice tone, or other identifiable nuances. After all the interviews were conducted and prior to having them transcribed, all the tapes were sequentially listened to a second time so that a global picture of the oral data set could be achieved. As well, I have a moderate hearing loss, and it was helpful to the accuracy of my understanding of

what was actually recorded on the tapes to listen to them twice.

Eight of the tapes were transcribed by a professional transcriber. The ninth tape was transcribed by me because there were a couple of pieces of data on that tape about which the participant had expressed concerns related to confidentiality. Those pieces of data were erased from the tape, and were not included in the transcription.

The transcriptions were double-spaced, and sounds and identifiable nuances were included as much as possible. Each line in the transcription was numbered to allow for accurate content analysis. The tapes were then reviewed a third time while reading the transcriptions in order to pick up transcription errors, and record and nuances missed by the professional transcriber.

Summary

In this chapter the research design and methodological steps used in this study were described. In addition, the establishment of trustworthiness of the findings, and the ethical considerations that were taken into account during the conduction of the study were discussed.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION OF FINDINGS

Examination of the use of intuition in the assessment of the clinical performance of nursing students, by nine expert clinical nursing teachers, provided data of considerable breadth and depth. Seven themes emerged from the analysis of the data. The seven themes are:

1. Experiencing intuition

2. Analysing and interpreting intuition

3. Using intuition

4. Valuing intuition

5. Differentiating novice and expert intuitive experiences

6. Profiling the intuitive processing of the expert clinical nursing teacher.

7. Reflecting on intuition

Within each theme several sub-categories were developed. The themes were examined individually, and to some degree relationally. The boundaries given to the themes, however, are for purposes of theoretical examination and interpretation, and their existence in the practical reality of clinical teaching in nursing remains to be seen.

The narratives of the nine study participants provide data-rich examples of the theoretical points being purported, and offer a glimpse into the world of intuition and clinical teaching that has not previously been examined.

Description of Participants

Description of Participants as a Group

The nine expert clinical nursing teachers who were participants in this study were a highly experienced and educated group, as can be seen in Table 3. All but one of the participants had education beyond the baccalaureate level. Seven of the nine were in the same age range, 40-49 years. The range of years practising nursing was 17-29 years, the average being 21.4 years. The range of years as clinical nursing teachers was 8-18 years, the average being 14.7 years. All participants were female.

As the Manitoba Association of Registered Nurses, the provincial licensing body, requires clinical nursing teachers in undergraduate nursing programs to have a minimum of a baccalaureate degree, the educational level of the participants was understandable. The age of the participants, and the fact that they had, on average, considerably more years of clinical teaching experience than the minimum five years required for this study, was also, to some degree, anticipated. The majority of the potential

participant group from which the actual study participants were selected, had several years experience teaching in diploma nursing programs, prior to their more recent experience in baccalaureate programs.

Table 3: DEMOGRAPHIC PROFILE OF PARTICIPANTS

*Participant Number ***	*Age in Years*	*Highest Level of Professional Education*	*Years as a Practising Nurse*	*Years as a Clinical Nursing Teacher*
# 1	30-39	Master of Nursing	17	15
# 2	50-59	Master of Nursing; Doctoral student in other field	29	8
# 3	40-49	Master of Nursing	21	18
# 4	40-49	Master of Education; Doctoral student in other field	18	14
# 5	40-49	Baccalaureate in Nursing; Masters work in other field	19	14
# 6	40-49	Master of Nursing	20	16
# 7	40-49	Baccalaureate in Nursing	21	18
# 8	40-49	Master of Nursing	26	15
# 9	40-49	Master of Nursing	22	14

**** As participants completed the Demographic Form anonymously, there is no relationship between the chronological participant numbers listed in Table 3, and the participant letter identifiers.**

Description of Participants as Individuals

The previous section provided a description of the nature of the participants as a group. However, the participants were also individuals with unique and shared attributes. The narratives that follow describe how the participants viewed themselves as clinical nursing teachers.

Participant A:

Participant A described herself as a 'feeler' and a 'sensor' in the clinical setting with students. She viewed herself as someone who encouraged students to use their past experiences in both life and nursing to discover solutions to current client care problems.

> ***I guess maybe I'm a 'feeler'. I like to feel the students out, look at their past experiences. If they've had similar kinds of situations, that they can draw on their experience. I can work out stuff with them... and I like to know how they're coping with the responsibility they have... and I like to know what their knowledge is like... (P - A)***

> ***... probably trying to discover who the student is, and what their experiences are, and do they have a common base... not just the 'textbookie' stuff they're all expected to know, but from a life experience point of view.... using a discovery approach to help students explore the contextual type of information that goes along with providing good care. (P - A)***

Participant B:

Participant B described herself as a clinical teacher who tried hard to be fair with students. She also focused on ensuring that her performance expectations were clear to students, and that she gave them regular feedback about that performance. She felt one of her primary functions was that of nursing role model for students.

> ***I think I try to be fair, and to try to look at what it is that they need from me, and I try to make it clear what I need from them... and I try to guide... to be of some guidance to them. Not as sitting in an evaluative role, but as an assist to get them moving along a continuum to... for their own learning. (P - B)***

> ***I try to be fair. I try to be a good role model. I try to give them feedback as they need to go along. (P - B)***

Participant C:

Participant C had difficulty finding words to describe herself as a clinical teacher. Throughout her interview, however, she described behaviors in herself as a clinical teacher that provided a picture of a quiet observer, and a reflective facilitator, of student learning.

> ***... I don't know if you've heard that before, but I often think, what could I have done differently with this particular student. I wonder as an instructor... what could I have done differently that maybe would have made it a different outcome... or been a better... maybe facilitated their learning better. (P - C)***

> ***I would probably say that as to how I assess them... I would say... mostly through standing back and observing. (P - C)***

> ***... I'm much more interested in how they use what they've got, and whether or not I see them moving in the right direction. (P - C)***

> ***... I actually believe that there are lots of different ways of approaching teaching... (P - C)***

Participant D:

Participant D saw herself as a flexible role model, who was able to allow students freedom to learn. She felt she had high expectations of herself, and projected those high expectations onto students.

> ***I guess I would describe myself as a model... a role model in terms of wanting to be able to demonstrate certain things to the students, and then having them go off and do it themselves. (P - D)***

> ***I would see myself as lenient in terms of letting students have chances, and making not terrible mistakes. (P - D)***

> ***I think I would see myself as being fairly... I do have high expectations... with the freedom for the student to work as independently as I can allow them to... I tend to take a positive approach to teaching. (P - D)***

> ***I am a high achiever personally, so I tend to impose those values on the students. (P - D)***

Participant E:

Participant E was quick to describe herself as an honest, forthright, trusting teacher, who was no different in her relationships with students than she was in her general approach to people in life.

> ***I would describe myself as a teacher who is honest, upfront, trusting... by and large honest and upfront... that's who I am. I like the students to know me exactly as I am. I'm no different with students than I am in my life. (P - E)***

> ***I tell them they will only know that what I say is true by what I do. Just as I am getting to know them, they too are getting to know me, and to trust me... (P - E)***

Participant F:

Participant F described herself as a caring, trusting non-conformist. She felt she emphasized decision-making, judgment and caring in her relationships with students, and enjoyed encouraging students.

> ***I trust students. I think that is one of the things that I've learned over the years: start with trust... and so I'm not a tight supervisor of students. (P - F)***

> ***... and it's certainly my view that they're students and now's the time to ask... (P - F)***

> ***... and I think that decision-making... clinical judgment... is the most important role of the nurse, so I spend a lot of time with students developing that. (P - F)***

> ***I think that I am very caring. Caring is very important in nursing, and I do believe that they [the students] need to be treated with caring to learn to care. I think what comes around goes around, so if you've had caring and kindness, then maybe you'll pass it on to someone else. So I try to fill that little niche a little bit with them. (P - F)***

> ***I've become a non-conformist myself, so I allow a lot of latitude with students. (P - F)***

Participant G:

Participant G saw herself as a patient, non-threatening clinical teacher who tried to make herself available to students without over-supervising them.

> ***I think I'd describe myself as being very patient. I've seen those words come across on evaluations. I try to be non-threatening, even though students sometimes do find you that way... but I try to be fairly non-threatening... try to be patient... try to come across as, you know, just in a non-threatening way. (P - G)***

> ***I try to stand back as much as I can until I think people or students require my assistance. (P - G)***

> ***I try to be supportive. I try not to hover, but I try to also be available. (P - G)***

Participant H:

Participant H described herself as a tough, but fair, clinical teacher, who felt responsible for providing students with good learning experiences. She had no wish to become attached to students, and expected focused, committed

performance from them in the clinical setting.

> *I think I am probably a tough instructor. I expect honesty. I would describe myself as, I think, fair, but I'm not terribly... I wouldn't say that I want to be close to them [the students] personally... and I don't want to know a lot of details about their personal life. (P - H)*

> *... but I want students treated fairly. I go to bat for them. (P - H)*

> *I have a belief that you are responsible for the students having a good experience... but I expect them to prepare well, and to be there with energy and commitment, and if they're not, I don't want them on the unit. (P - H)*

> *I don't suffer lackadaisical behavior easily. I don't like students that meander, you know, sort of wander along. I want them to be getting along with the job at hand. (P - H)*

Participant I:

Participant I viewed herself as a positive person who liked to encourage students. She felt she was nice to students, but didn't let that niceness prevent her from having high standards for students. Participant I described herself as being intuitive by nature.

> *I tend to be highly intuitive by nature. (P - I)*

> *I've always been an encourager. I've always felt that building the students up was a more positive style than pulling them apart. (P - I)*

> ***A student once said to me earlier on, "You seem like a really nice person."... and I said, "I am a nice person, that doesn't mean I'm easy." (P - I)***

> ***I am the kind of person that students do like because I'm positive, and I try to create a positive atmosphere in which they can work... but at the same time, I am demanding. I have high standards, and I require that they strive to uphold those standards... but I'm not a nitpicker. (P - I)***

While participants identified attributes in themselves that were unique, I noted several self-assessed characteristics that were shared between two or more participants. Table 4 shows both the unique and shared characteristics identified by participants, and as can be seen, there were almost as many shared self-identified characteristics among the participants as there were unique.

Further information about the nature of the participants was gleaned from an unexpected source. The opening 'grand tour' question was designed to draw out narratives of experiences participants had had in relation to working with students in the clinical setting. However, responses to that question, for the most part, did not produce clinical stories. Instead, participants tended to talk in general terms about the kinds of clinical situations that usually were memorable to them. Only Participant A responded immediately with a clinical story. With further encouraging, Participants H and I related specific stories, but all other participants continued to respond to that

question in general terms.

While this problem required more sophisticated measures to draw out real stories, the responses to the opening 'grand tour' question presented some insight into the study participants. Participants A, C, G and H, either directly or indirectly, noted that clinical situations that had been troublesome or worrisome, or that had a negative slant, came to mind first. Participants D and E indicated that clinical stories with both very positive and very negative outcomes, stood out to them equally. Average situations they found unremarkable. Participants B and F commented that situations in which they had learned something about themselves, or about clinical teaching, were the hallmark stories for them. Only Participant I identified positive outcome situations as the ones that came to her first when she thought about remarkable clinical stories. One can only speculate on how these different perspectives might have an influence on clinical teaching. It is also noteworthy that Participant I was atypical in relation to other categories of data throughout the study, as will be revealed.

Table 4: UNIQUE AND SHARED SELF-ASSESSED ATTRIBUTES OF PARTICIPANTS

Participant (P)	*Self-assessed Attributes Shared Between Two or More Participants*	*Self-assessed Attributes Unique to the Individual Participant*
P - A	- encourager - reflector	- sensor - feeler - explorer
P - B	- fair - role model - facilitator	- guide
P - C	- reflector - facilitator	- self-questioner - quiet observer
P - D	- role model - high expectations - flexible - positive approach	- lenient
P - E	- trusting	- upfront (same as is in regular life) - honest
P - F	- trusting - flexible - role model - patient - mentor	- caring - nurturer
P - G	- patient - fair - liked by students	- supporter - non-threatening
P - H	- fair - high expectations - role model	- tough - responsible for quality of student experience - no personal involvement with students
P - I	- encourager - high expectations - positive approach - liked by students - mentor	- not a nitpicker - nice, but not 'easy' - ** **naturally intuitive**

Experiencing Intuition

Perhaps the most salient finding in this study is that *each* participant described intuitive experiences associated with the assessment of nursing students in the clinical setting. These experiences were numerous, and of both a negative and positive nature for all participants. Except for Participant I, the negative stories tended to be articulated first. In the case of Participant I, I had to re-phrase interview Question # 10 to ask if she had any recollections of *negative* intuitive experiences in order to acquire her negative stories. Each participant was able to delineate more than one story or incident involving intuition. The descriptions of the intuitive experiences were rich and insightful. A representative story from each participant follows. These representative stories illustrate the wide variety of intuitive experiences described by the participants.

Participants' Stories

Participant A:

> ***I remember one student... she was an RPN from before. She stands out in my mind because we had lots of discussion about the need to double check medications. The issue was that it was made very clear to her that she needed to have a second person double check her insulin before she delivered it... just to have a look at the dose, and make sure she had the right type and so on. It's not hospital policy, it's just my own request. I don't know what made me come back to this***

girl. I mean I'm all over the floor with students ... several of them are not in the same spot. I came back to see her though, because I just had this feeling that something was up. It ended up that she had delivered the insulin without checking with anyone else. Immediately after she delivered it, that's when I walked back onto the unit... and she was absolutely beside herself, because at that point she recognized that, not only had she not gone through the five rights like she should have, but that she hadn't appropriately assessed the amount of insulin she was to deliver, and she had given ten times the dose ordered. I remember that situation because, somehow, I had this feeling that something was up. I had this sense of impending doom... and that I had to get back there. (P - A)

Participant B:

I had a circumstance with one of the students who was close to graduation. I got this feeling about this student on the initial tour of the ward... I guess by what she didn't ask, and what she wasn't paying attention to... a sense that something didn't fit... something just wasn't right with her. So what I decided to do with... I didn't want to single her out... so I decided to do some quick questioning of the whole group in conference with a very short, direct quiz. The quiz covered very basic things... and I discovered through this quiz that this student's knowledge of even the most basic things was abysmal. I felt more relaxed after that... after I was able to figure what was bothering me about this student, and allowed me some direction for remedial action. (P - B)

Participant C:

I remember this one student who couldn't put things together. She got flustered easily. When I would stand back and observe her, I would see glimmers of things that I couldn't articulate... a hint of some essence there... but if I wanted to see those glimmers repeated, so that I would have some kind of consistent data, it wouldn't happen.... but I had an intuitive sense that she was going to be fine, because she was warm and conscientious with patients. She eventually graduated, but on paper, with the hard data, she looked very weak, but she was wonderful with patients. (P - C)

Participant D:

I have difficulty thinking of a particular circumstance that stands out. I do remember, however, often having intuitive feelings about students over the years in relation to assessment. I've always been big... I have a big thing about assessment... and so I sense immediately when... you know, I have a sense that they really don't get it. With most of these students I can never get past this gut feeling to the point where I can let them go completely on their own... and this gut feeling is usually correct. I mean I'll go back and check with them and say, "What did you find when you looked at X or whatever?" ... and, you know, "What did you learn when you talked with the patient about whatever?"... and there's this blank look on their face, and then you know for sure you were right. (P - D)

Participant E:

There was one example of a positive nature. A new group of students... this was about eight years ago, so I had been teaching for about ten years. This entire group came to me broken... that's all I can say... broken and floundering, with many of them wanting to quit. One in particular, in the beginning came to me and told me she wanted to quit. I wasn't sure that this was the right answer for this girl... I wasn't sure but my gut said, "This person will be fine"... that I have to do something here to convince this person that, indeed, nursing is for you, and that indeed, you can do it... and this past year and a half is not for not. I was able to spend about an hour with her her. There was a lot of tears... a lot of crying... on both our parts, as a matter of fact... and she went away promising to think about it... and indeed, came back the next day, and said that yes, she was going to try. (P - E)

Participant F:

Do you want a story? It was a student in the senior class, and the student was a very bright, very committed non-conformist, who had chosen a senior clinical setting that I knew wasn't what she should be

doing with her career. I made some suggestions... but it was "No... I want to get this under my belt, so if I can do this, I can do anything." She was on one of the most challenging units in the city and after a period of time I find that she is very, very down... very depressed. Her preceptor is very happy with her work, and thinks she is moving along faster than you could hope for in a setting like this... great with patients, good thinking skills, developing very well. I go and visit, and the student is trying to admit this very complicated patient, and she's close to the edge and wanting to quit. The student is looking at me like... save me from this... save me from myself. So I cast a look inside my brain and said, "Well I think [the student] is bright enough to figure this out"... and so I'm on the edge of - do I take a risk?...{section deleted} But my gut said, "I think this student can do it, and I think it will make a difference in how she sees herself"... It's intuition, you take risk... {section deleted} but I had the confidence that this was the right risk to take because I knew this student, and I was tuned in to what I thought she needed, and it worked. (P - F)

Participant G:

There was a student I had last year... and I do remember that I was quite pleased initially that this student seemed to be doing so well. She started out, at least in the first, you know, week to week and a half doing quite well, and then I began to notice fuzzy things that worried me... I guess as soon as I encountered some difficulties with her I had sense that she wasn't going to be able to improve enough to get through this rotation... she had been a health care provider in another country, and had some personal health beliefs that were not accepted in North American culture. As her subtle behavior became more obvious, I realized that she wasn't able to let go of these beliefs. After that initial surge of confidence, I had a sense that she was too set in her ways, and there was too much history behind this girl for it to work. (P - G)

Participant H:

I had gone to see this student in her senior practicum. I had taken over from another instructor. She'd had relatively good reports to date. I went to see her and they were in the middle of an emergency on the unit. It was obviously going to be a long one, so I left my business cards for both the student and the preceptor, with a little note saying, "I'll talk to you later." I tried phoning later, and found out they'd had a second emergency, and that, according to the preceptor, the student was in good shape. The preceptor was apparently happy with her performance... so I had this benchmark that everything was going fine. The next day I got behind with my visits, and decided that I would not bother going back to this student until the following day. However, the strangest thing happened... as soon as I made the decision to go home and not see this student, I had this sense of agitation that I absolutely had to see her. I tried to talk myself out of it, but my intuition could not be dissuaded. I had to see this student. So I phoned home and told my husband that I would be late, but that I had to go back and see this student. When I got on the unit and saw her face, I knew immediately that she had to talk to me.... then the preceptor saw me and said that she needed to speak with me. As it turned out there was a real concern about this student and [a particular behavior]. To this day, I don't know what I was feeling when I was sitting at the [name of hospital] talking to another student, and knowing that I had to see this student that day, no ifs ands or buts, and I had to see her in person. (P - H)

Participant I:

There was a student that I knew who wasn't academically strong... I was teaching content so I knew she was struggling academically. When she came to me for clinical I had a real sense that she was going to be strong there... didn't know that for sure, but had a real good feeling about it. I assigned her to a toddler who was in isolation. She was in the room with the door closed ... a glass door. I went by part way through the morning, and through the glass window I saw her just delighting in that kid. They were playing together and laughing, and it was beautiful. I told her I had seen this and, you know, she just blossomed after that. She continued to struggle academically, but I sensed she just had a knack for nursing, and I was right. She turned out to be an excellent nurse. (P - I)

The examination of these, and other, participant stories initiated the journey into the intuitive experiences of the nine expert clinical nursing teachers.

Characteristics of Participants' Intuitive Experiences

Throughout the telling of the stories, and the answering of the interview questions, it became evident that participants described their intuitive experiences differently. One of the most insightful descriptions came from Participant B who said:

> *It's the same type of feeling that you get if you're driving your car and you see this kid or dog or whatever by the side of the road... and you have this feeling that something might happen. It looks like they're going to go, and, you know they might bolt, and there's just a sense of anticipation... (P - B)*

Participant C talked about what the intuitive feeling did to her ability to concentrate on other students.

> *I get antsy... that's how I feel, antsy. The other thing that can happen is... if I'm trying to work with another student I get distracted. You know, I'm working with this student, but my mind is still there with the other one, because I'm mulling it over... I feel myself mulling it over in my mind. I might be in the med room, and this student is going through her things, and all of sudden I realize that I haven't been paying attention... and then I have to tell her to start over... like, how much are you going to give, and what's it for, and so on... you know, it's that distractedness. (P - C)*

While Participant H emphasized the tenacity of the discord.

> *I just knew I had to see her... I had to touch base. There was a sense of discord, and there was no persuading me otherwise... I mean, I had to be there. (P - H)*

With the exception of Participant I, participants described their intuitive experiences as having both physical and emotional components. Participant I felt that because she was intuitive by nature, she wasn't in tune with the physical component in the manner of a more inherently sensate individual. Participant I described the attributes of her intuitive experiences as having an intellectual flavour. The variety of the words participants used to describe their intuitive experiences can be seen in Table 5. While several participants used the phrase 'gut feelings' in their narratives, that phrase was not included in Table 5, because many of the interview questions (see Appendix K) included that phraseology.

Table 5: TERMS USED BY PARTICIPANTS TO DESCRIBE INTUITIVE EXPERIENCES WITH NURSING STUDENTS IN THE CLINICAL SETTING

Participant	*Terms Used*
P - A	- hunch - sense of impending doom - queasy stomach - stomach feels like a bottomless pit - something has clicked inside - sense of joy - sense of lightness - something clicked - sense of happiness
P - B	- sense of alarm - heightened awareness - turned on - like an electric current going through you - like you're on guard - sense of anticipation... like seeing a dog on the road
P - C	- a picture - a sixth sense - get 'antsy', can't focus on other student's needs easily - red flags - little glimmers of things - little nudges
P - D	- an uneasy feeling - a light bulb - sense of alertness
P - E	- shivers up and down my spine - uncomfortable feeling - alertness - sense of relaxation - inability to touch student
P - F	- queasiness - it's loud and clear in my head - nagging feeling - gray and muddled feeling
P - G	- sixth sense - urge - alertness
P - H	- agitation - sense of discord
P - I	- exhilaration - quiet satisfaction - worrisome - check mark in the back of my head - 'sees' the feeling

Difficulty Articulating Intuitive Experiences

The non-conscious, non-verbal nature of intuitive experiences was evident in the inability of participants to articulate such experiences precisely. Content analysis of the narratives revealed several examples of phrases used by participants that illustrate the difficulty they had bringing concrete form to their descriptions. Each participant used at least three phrases with vague, imprecise phraseology. The nature of these phrases are illustrated in Table 6. Participant anecdotes also supplied some provocative insights into the non-conscious nature of the phenomenon. Participant A provided the following eloquent description of how she thinks of intuition:

> ***I was thinking that part of what we consider to be intuitive is some kind of connection at a different level of consciousness... and maybe, again, we have difficulty identifying what it is. When something is off, we have a sense that energies are being disrupted somehow... or that energy is coming out in another way. I do believe we have a sense of knowing through that connection. (P - A)***

Table 6: PHRASES USED BY PARTICIPANTS SUGGESTING THAT INTUITION IS DIFFICULT TO READILY ARTICULATE WITH VERBAL PRECISION

Participant A:

- I had this feeling that something was up
- You know there's something off about this student
- ... with what I knew of [the student], it simply didn't jive
- There's a sense to what they're doing that's right

Participant B:

- ... a sense that something didn't fit
- ... something just wasn't right with her
- You have the feeling something's not right
- I really don't know what it is I'm sensing sometimes

Participant C:

- I had the feeling that they never quite got it
- I just know they're not getting the picture
- a hint of some essence there
- It's a feeling that I just don't think it's going to happen

Participant D:

- You just know they don't have it
- I have this sense that they really don't get it
- ... kind of having it all together
- You can just see this one's not going to do it

Participant E:

- My gut has taught me there's something going on
- I wasn't sure but my gut said, "This person will be fine"
- My feeling says that this person is OK

Participant F:

- ... but my gut said, "This student can do it"
- It's the gut that's saying, "Yes, it's going to work"
- ... based on a feeling that the package together didn't have it

Participant G:

- There's just something there that's not quite right
- It's a sense that they're not really there
- It's something telling you that there's something else going on here
- It's a feeling the student is going to be OK
- ... a feeling she's just not going to cut it

Participant H:

- She was sort of one of those students... I knew that she would be fine
- ... just an odd kind of feeling that something wasn't right
- ... a real feeling that there was just something missing
- It's a sense that the student just can't put it together

Participant I:

- I felt there was something there in this girl
- I sensed she just had a knack for nursing
- There was something that said to me, "Watch this one"

Behavioral Triggers of Intuitive Experiences

While participants could not articulate what the exact causes of the their intuitive experiences were, evidence in the anecdotal accounts suggested that were some common student behaviors that triggered participants' negative intuitive responses. Table 7 provides a composite of those triggering student behaviors gleaned from participant narratives. Negative triggers were talked about, directly or indirectly, by every participant, except Participants E and F.

> ***She never approached me... I always happened in on these situations. (P - A)***

> ***A flurry of unfocused student activity always alerts me. (P - B)***

> ***If there is a sense of indifference, that sort of puts up some red flags for me... (P - C)***

> ***... and there's this blank look on their face, and then you know for sure you were right [your intuition was right]. (P - D)***

> ***It may be a sense that they're flippant. (P - G)***

> ***... sometimes you get a sense that the student is a bit deceptive... that they're hiding stuff. (P - H)***

> ***The student seemed to me to be overconfident. (P - I)***

*Table 7: STUDENT BEHAVIORS THAT OFTEN TRIGGER A NEGATIVE INTUITIVE RESPONSE IN THE CLINICAL TEACHER AS REPORTED BY TWO OR MORE PARTICIPANTS (** Number of participants reporting behavior noted in brackets)*

1. **Physical behaviors such as a sense of:**

- excessively scattered activity (3)
- excessive inertia or reticence (3)
- avoidance of the patient or teacher (4)
- incongruent body language (e.g. eye expression, facial expression, demeanor) (3)

2. **Personality behaviors such as a sense of:**

- overconfidence (3)
- defensiveness (2)
- flippancy (2)
- indifference (2)

3. **Social behaviors such as a sense of:**

- inappropriate chitchatting with patient, family, staff, teacher (2)
- deceptive behavior or lying (4)
- diversionary behavior (2)

4. **Verbal behaviors such as a sense of:**

- unusual or inappropriate questions being asked (2)
- inappropriate or excessive requests for help (2)
- inappropriate manner in questioning the teacher (2)
- questions not being asked that should be asked (2)

Positive Intuitive Experiences

When asked, with the exception of Participant I, participants were able to identify positive experiences of intuition with students in the clinical setting. Participant I focused on positive intuitive experiences throughout the interview, and did not require questioning to initiate remembrances of these experiences.

Three types of positive intuitive experiences were described by participants. The most common type involved

intuition that left the clinical teacher with a sense that the person had what was necessary to be a 'good' nurse, sometimes in spite of objective data to the contrary. This often involved students who participants felt were just slower at reaching goals and were worth waiting for.

> *There are those students who... they don't seem to be faring all that well when you ask them a question. They can't seem to grasp it, but there's a feeling that says that if this person can get past these humps, they are going to be a really good nurse. (P - C)*

> *One in particular, in the beginning came to me and told me that she wanted to quit. I wasn't sure that this was the right answer for this girl... I wasn't sure but my gut said, "This person will be fine"... that I have to do something here to convince this person that, indeed, nursing is for you, and that indeed, you can do it... and this last year and a half is not for not. (P - E)*

> *Some students are just slow to blossom and, you know, you're looking at these students in terms of criteria and its, you know, they're kind of marginal on a number of things... but they're going in the right direction, and they're moving at their own pace... and you just intuitively sense that they need a little longer, but they'll be OK... and you work hard to help them get there, offer them more, give them the benefit of the doubt on tests, and things like that. (P - F)*

> *There are students who just take a little longer to grasp things, and perform. Maybe you've seen occasional glimpses that they have it in them, but nothing concrete. You just feel that they're worth trying to save. (P - G)*

> *I had a very timid student... everything was really frightful for her... and I had to work hard to get her past that frightfulness and build her confidence... but I had this feeling that if we could get past this, she would be OK. (P - I)*

The second type of positive experience was one that left participants with a sense of confidence in a student's ability.

> ***I've had experiences where I've had a feeling that a student was really strong and dynamic... just a sense of them kind of having it all together. (P - D)***

> ***Well I've sometimes had students that right off left me with a sense of confidence... you know... a sense that they're going to be accountable, that they know exactly what they're doing, and if they don't, they know where to get the information from, and definitely would not do anything to jeopardize patient safety. (P - G)***

> ***... but there are other ones... there was one particular student who... I remember her quite clearly because she was sort of one of these students who... well, I sensed that she would be just fine. She gave me the feeling that she was trustworthy and competent... knew her limits and was completely comfortable with saying, "I don't know". (P - H)***

The least common type of positive experience involved participants sensing that a student was grasping a concept well, or showing a depth of understanding.

> ***Sometimes you have gut feelings about something wonderful that occurs... intuitively you know, you just don't know why... the student finally catches on to some concept and can apply it... but you couldn't measure it on paper. (P - A)***

> ***Sometimes, for example, you can sense that a student has actually grasped the depth of this patient's loss... (P - B)***

Participants' experiences of intuition were numerous, varied, and characterized by both unique and similar attributes. The participants' analysis and interpretation of those experiences is discussed next.

Analyzing and Interpreting Intuition

The participants' patterns of analyzing and interpreting intuitive experiences provided support for the conceptual framework - Dreyfus' ***Six Key Aspects of Intuitive Judgment***. Participants' comments about the examination of their intuitive experiences showed a clear connection between the Dreyfus theoretical model and the expressed thinking processes of the participants.

Dreyfus' Six Key Aspects of Intuitive Judgment

Pattern Recognition:

The ability to recognize familiar patterns, sequences and configurations in student behavior was the most common explanation participants provided for their intuitive experiences. Participants described pattern recognition, either through illustration or explanation, as being highly relevant to their interpretation.

Participant A:

I think the knowledge pattern comes out with..."I'm going to need your help with things"... things that you know the student has had experience with... a different sort of scenario that you might have is... what happens is that they don't come forward. (P - A)

... for me there is a schemata in your mind... from 7:30 to 7:45 they're in report, and then from 7:45 to 8:00 o'clock they're going to do rounds, and do a head to toe assessment on their patient... and if they haven't moved out of the conference room, you sense you've got an organizational problem. (P - A)

... by 9:00 o'clock if they haven't given their, you know, meds... and then they haven't gotten away for coffee... there's a sequence of things that alerts you. (P - A)

Participant B:

When I see a student who seems to be running around in the halls, or in and out of somewhere, and it doesn't have any pattern that I'm used to seeing in students, that gives me a cue immediately. (P - B)

There is a sense of... I do know how the usual student at this stage behaves, and when I don't see that... I do expect students to behave generally within a range of certain ways ... and I have a wide range in what I allow as acceptable behavior... but when they step out of that, it triggers something. (P - B)

I have to build [the assessment of students] on a frame of reference, and with experience I build on that frame of reference over time. (P - B)

Participant C:

There is a broad plan of expectations... and when I started with this year's students, and they didn't fall

into that pattern, it really shook me... but it really brought a smile to my face, because you may not even realize you have it [a plan of expectations], but you do. (P - C)

Participant D:

... it's a package of factors together,,, (P - D)

There's a flexible range of normality [in student behavior] for me.. but outside that range... (P - D)

... and then as the rotation proceeds, and they take more responsibility for doing it on their own [picking their patient experiences], I look to see if there's a pattern ... that tells me something. (P - D)

Participant E:

... as I gained exposure to students, what they will do in situations becomes predictable. (P - E)

After many years, many students, many situations, you have a pattern in your mind... (P - E)

Participant F:

I think I have, what I call buttons... and when I'm teaching and I feel like my buttons have been pushed... you know, the blood pressure goes up, and I sense there's going to be a problem. (P - F)

Participant G:

... and I think over the years I've substantiated this pattern many times, where students don't always come out and say when they're having difficulties. (P - G)

Participant H:

> ***Well certainly I have a clear idea of what students will likely be like in my area depending on their experience... so there are those patterns. (P - H)***

Participant I:

> ***... but it kind of drew a familiar pattern that made me think I should watch [the student] more closely. (P -I)***

> ***... so I thought, OK, there's a pattern here that isn't right, and it's making me uncomfortable. (P - I)***

Similarity Recognition:

Recognizing resemblances that perhaps were not obvious, and recognizing subtle differences in situations that appeared similar on the surface, also occurred in the experiences of some of the participants.

> ***There was another student... also a psychiatric nurse... who also had lots of experience before coming back to school, but she presented a little differently. (P - A)***

> ***When I see a student behaving in a way of avoiding, either avoiding me or avoiding the staff, or there is a flurry of student activity... it cues me to take a look at that patient's background and current status immediately... and see if there are similarities to other situations where I found students were worried about patient data, but not coming forward to me for whatever reason. (P - B)***

> ***There may be hints of something... and then hints of something else. It's not captured in one exact experience... but it reminds you of something. (P - C)***

> *You have this feeling that with these students the light bulb isn't on... but you sense that the reason it isn't on is different for each student... sometimes you're pretty sure this student has it, but just hasn't done their homework... and the other, well, you just know they don't have it. (P - D)*

Commonsense Understanding:

Having a deep grasp of the contextual meaning in intuitive experiences was evident in the anecdotes provided by some of the participants.

> *It's not that it's [the student's relationship with a patient] outside therapeutic... it's just that it doesn't move to the next level... and there's definitely a levelling... and the levelling is more of the subjective kinds of things... we can't quantify this, but we know when they haven't reached the next level, because we know where the next level is. (P - A)*

> *By and large, if lousy stuff is happening... a series of bad experiences or bad things... my gut has taught me that there's something going on... and there's usually context. To not follow up on that context is a disservice to nursing and to the student. So I feel obliged to find out what the context is... because it will help me sort out the meaning of what is going on, and what to do about it. (P - E)*

> *The student is looking at me like...save me from this... save me from myself. So I cast a look inside my brain and said, "Well I think [the student's name] is bright enough to figure this out"... and so I'm on the edge of - do I take a risk? Here's the student... so worn, and so ready to quit, ... and logic is telling me she's not going to be able to rise to the challenge... leave this person alone, give her something simpler. I mean what do you do to a person who's on the bottom? You give them something they can conquer. But my gut said, "I think this student can do it, and I think it will make a difference in how she sees herself"... It's intuition, you take a risk. It's that gut saying, "It's going to work... because my head*

> *is saying, "I know all my peers in mental health nursing would be getting all over me for doing this to somebody."... but I had the confidence that this was the right risk to take because I knew this student, and I was tuned in to what I thought she needed, and it worked. (P - F)*

> *She still had lots and lots of rough edges, but I was instinctively drawn to this kid right away. She was a real diamond in the rough. She turned people off because she was so aggressive, and outspoken... but she wanted to learn. I sensed that about her... and I thought that somebody who had that much guts to make a complete turn around from what she had come from, and wanted to be somebody... I thought there was something there in that girl... and you know, she turned out to be a wonderful nurse, and I still keep in touch with her. (P - I)*

Sense of Salience:

The ability to priorize the importance of context-laden data was also present in the anectdotal descriptions of intuition offered by some participants.

> *... and then you try to justify it with all the objective kinds of stuff... but it's subtle and hard to articulate, and there's times sitting in clinical meetings when you will say that you know there's something off about this student, and they need to be watched carefully. (P - A)*

> *I had a circumstance with one of the students who was close to graduation. I got this feeling about this student on the initial tour of the ward... I guess by what she didn't ask, and what she wasn't paying attention to. (P - B)*

> *My gut reaction was that she was unsafe... and at that point there really hadn't been anything to tell me that she was dangerous, or not worth my good feelings. There was nothing overt or obvious in her behavior... nothing like that. I just had this really awful*

feeling, very negative, very uncomfortable... something was triggering that... and in the end it turned out that she was doing some very dangerous things. (P - E)

And in fact I do remember that I was quite pleased initially that this student seemed to be doing so well. She started out, at least in the first, you know, week to week and a half doing quite well... and then I began to notice fuzzy things that worried me... she had been a health care provider in another country, and had some personal health beliefs that were not accepted in North American culture. As her subtle behavior became more obvious, I realized that she wasn't able to let go of these beliefs. (P - G)

Deliberative Rationality:

Looking at data from another perspective, in order to find meaning in the data, was an analytical approach evident in the stories of several participants.

Sometimes it's just looking at the same piece of information a different way... like is this scattered behavior that's worrying you a problem of organization, or priorizing, or anxiety, or just general knowledge... if you can come at it a couple of ways, you can maybe pinpoint what it is that's making the student present like this. (P - A)

There are many ways that you intuitively see things in students, and you have to find out what it is you're actually sensing. You have to follow up and see what factors are involved and whether you're on the right track... or whether you have to go back and look at the feeling again, and see if something else is triggering it. (P - C)

Sometimes you get a sense that, even though they're agreeing with what you're saying, and they give every indication that they understand, that there's just something there that's not quite right. It's easy to assume it's language with ESL [English as a Second

language] students, but you have to check out your gut feelings a little bit. Is it language, or is it that they really don't know the information? It makes a difference in how you handle the situation. So you often have to check out your gut feelings from both perspectives to be sure. (P - G)

... sometimes you get a sense that the student is a bit deceptive... that they're hiding stuff... you have to check that out to be sure what you sensing is valid. I usually try to put them in a situation where I can get a clearer read on what I'm feeling. (P - H)

I picked up on this student in orientation, and I thought she was maybe a little rigid because she was busily writing down detail, detail, detail. On that very first day of clinical practice an unexpected opportunity came to [perform a technical skill]...and I had told the students in orientation that when this comes up it's going to be immediate... so I said to this student that this [skill was available], and did she want to do it... and she said, " No, not today, I can only handle what it is that I'm already prepared for today, and I can't handle that... I don't want to do that"... and I said, " OK"... but in the back of my mind I'm sensing, "RIGID, this isn't good". But I was wrong about that student. She turned out to be the very best student in the group... but on the first day she was more aware of her limitations than some of the others. I had let my initial intuitive judgment about this girl block out any other possible explanations for her response. (P - I)

Skilled Know-How:

'Skilled Know-How' in the Dreyfus model, refers to technical skill, and describes a level of competence in which the expert and the skill 'become one'. In my explanation of the relationship between the semi-structured interview questions and the Dreyfus framework, I determined that 'Skilled Know-How' would have little relevance in this

study (see Appendix L). As I analysed the content of the narratives, however, I began to see two highly-skilled teaching techniques emerging that participants often used to determine the meaning of their intuitive experiences. The anecdotal highlights that follow describe these two skills.

1. Subtle questioning strategies

So I use different kinds of questioning strategies depending on what I'm sensing... but you have to be able to question in a non-threatening sort of way to get honest answers. (P - A)

A lot of times with a student that I have feelings about, I don't want to jump on them, because I want them to be open and talking to me, so I... well, you just have to be careful how you ask questions, not sound like you have some hidden motive. (P - C)

Let me try to put this into words. It's almost that I need to, with communicating with the student, sort of uncover what it is that she's perhaps hiding or what else she's dealing with... but I have to be non-threatening in the kinds of questions I ask, or approaches I take... otherwise, students withdraw. (P - G)

... because you have this kind of sense about a student that they're swinging the lead... that they are lying to you... that they are maybe charting care that hasn't been done yet. So you set about finding out the data, and you have to be careful how you ask questions of students like that. If they sense there's a threat, they'll throw up smoke screens. (P - H)

2. Unobtrusive data gathering

I get information about them and about what they're doing without... I know sometimes the students have said, you know, "How did you get that information about me?" (P - B)

> ***I have many ways of gathering data about students that I'm worried about, besides watching them. They're often surprised to know I know some things. (P - G)***

> ***There are certain nurses that I know are very good at being able to tell how a student's doing... and I talk to them in terms of what is their sense about the student. Students sometimes wonder how I know what I know about them. I can be pretty creative in how I get my information. (P - H)***

Having sensed something about a student intuitively, and having broadly analyzed and given meaning to the intuition, participants then began the process of using intuition.

Using Intuition

Two roles for intuition, in the repertoire of expert clinical nursing teachers, emerged. Both involve using intuition as a means of focusing clinical teaching activities. Intuitive experiences assist expert clinical nursing teachers to focus their assessment and data gathering activities in relation to a student's clinical performance. These experiences also assist in selecting appropriate follow-up and clinical teaching strategies.

Focusing Assessment and Data Gathering

Participant narratives supported that expert clinical nursing teachers have a responsibility to, as much as they are able, seek out factual information to support

intuitive sensations. Intuition, to become operationally usable, is usually supported objectively in the arena of clinical practice.

> ***Well I think that it's because of those gut feelings... that they bring you back... because you kind of go based on those gut feelings, and keep finding out what's going on... whereas you might not have done that before. (P - A)***

> ***If I have a gut feeling, usually now I trust myself to know there's something behind it. I may not know exactly what it is, but then my role is to try and find out exactly what it is. (P - B)***

> ***I don't think we can look at objective data and then say that captures our intuitive feeling, but I think we can look closely at our intuitive feeling, and see where we might begin to look for objective data. (P - B)***

> ***I think we have an obligation... you know... as clinical teachers to put a name to the feeling, so to speak. Whether it's positive or negative, we have to try to discover what the objective data is in relation to the feeling... if we can. (P - C)***

Using Intuited Knowledge in a Linear Analytical World

Some of the intuitive experiences of the participants showed responses based on gut feeling alone. These examples provided evidence of the confidence to take risks that often accompanies expertise, and delineated some of the weaknesses of using objective knowing exclusively. However, most of the participants supported that intuited information, can sometimes, and should be if at all

possible, supported by at least some degree of objective data. The participants provided compelling reasons for this belief. The first, and most pragmatic, was that they live in an objective world. While they may not always agree with the perspective, they must work within it.

> ***I think we have to sort of come up with some objective way of saying whether or not the student is able to perform. We have to be able to substantiate with facts to some degree... it's the nature of the way we educate students. (P - A)***
>
> ***I understand the need for some objective structure. It's just that sometimes your intuition can't be captured by hard data... but I guess we have to try to substantiate in this way. (P - C)***
>
> ***The students that don't do well... my intuition will often identify those students, maybe on the first day, before they've even done anything... before I've done any documentation, or written anything at all. I know we have to document for legal purposes, so that if students question our information, that it is written down... but you know, I'm rarely wrong about those students, and I would come up with the same results without all that writing. (P - G)***
>
> ***Even though I trust my gut feelings about students for the most part, you're not going to win an appeal on anything but objective data. (P - H)***

Secondly, some study participants felt that, in situations related to safety and integrity in particular, supporting objective data were crucial, and for the most part available, if looked for tenaciously.

> ***Because my gut feelings had no basis in fact, I felt I had to work hard to counteract these feelings... but as I began to watch this student on the sly... yes, indeed, she began to do some very dangerous things. (P - E)***

> ***I worry about dishonesty in students... but over the years my intuition has told me that if a person is dishonest in one area, they are more likely to be dishonest,if push comes to shove, a second time. (P - H)***

Other participants felt that at least some objective data could be found to support most intuited concerns.

> ***I think even if you just have an intuited feeling about something, if you go about it right, you can find a parallel in the objective data that can be representative... not always, but often. (P - B)***

The third reason participants gave for finding support for intuition within the objective data base is that, while they believe very strongly in the accuracy of their intuitive experiences, they have been wrong.

> ***I would say that I use intuition only as far as to make me more conscientious about certain things and to tune in... because my gut feelings about students have been wrong... not often though. (P - H)***

> ***You have to be careful with your gut reactions or judgments sometimes, because you're not always right. Over the years you learn that students don't necessarily come out in the wash the way you think they might... you know, the student who drove the school crazy is now a director of nursing... and doing a good job... that can be humbling... that's why we have to at least try and support our gut reactions with specifics. (P - F)***

> ***I believe that you have to substantiate with objective data because my intuition is not foolproof... I've been wrong. (P - I)***

The last reason participants gave for finding substantiation for intuition, particularly negative intuition, in the objective data base, was to give students worthwhile feedback on which to base behavioral change. The topic of giving feedback to students initiated heated responses about the value of criteria-driven evaluation forms. Participants' comments on this topic were frank, and sometimes humorous.

> ***By and large I find criteria-driven evaluation tools a paper-generating waste of time. (P - E)***

> ***Initially I wrote down everything, and gave my notes to students... and they would be going around with these huge masses of data... and then I went... I think it was Nancy Diekelmann I heard, complaining about nursing education, and saying that the teachers were off in corners writing, and the students were off in corners writing, and why weren't they spending the time talking to each other and doing things together... and I thought, now isn't that marvelous, I can throw all this stuff away... (P - F)***

> ***In the other school we had a binder and we just filled it with notes... I used to think it was great, because I had a piece of paper for every criteria, and I could say... well, there's three positives and one negative, so I guess it's a positive... in retrospect, it was really ridiculous. (P - F)***

For the most part, participants found criteria-driven evaluation tools restrictive. Participant F even spoke of a 'crisis of trust' with a criteria-driven

evaluation form.

> ***I can't remember quite which student it was, but having a complete crisis of trust in the... you know, form... in the so-called objective assessment... where the student really scared the hell out of me... but the form didn't capture what needed to be captured. (P - F)***

Only Participant H kept ongoing notes about students on the objective evaluation tool, and she did not begin this process until half way through the rotation. She described some very practical reasons for her choice to record data on the tool on an ongoing basis.

> ***By doing that [ongoing recording on the evaluation tool] you can sometimes start to see, say, patterns... and you say, "What is this pattern? Is it correct or incorrect?"... and maybe you have an intuitive belief, but you can see right away they you have no substantiating data at all... so you'd better get focused on finding some... particularly if this is a bad feeling, and you want this student brought up short. (P - H)***

If participants felt confident that their intuition about a student was correct, but had little substantiating data, they were not stifled by the evaluation tool!

> ***I can be very creative with data when I have to be. If I feel my intuition is important, I'll find a way to get it in there somewhere. (P - C)***

> ***I just massage the data till it fits! (P - D)***

> ***If we're honest with ourselves, good teachers manipulate the form all the time. (P - F)***

As a last resort, participants found that if they were unable to get their feelings across on the evaluation tool, they just made extensive use of the summary sections, or attached narratives to the end of the tool documenting their thoughts.

The struggle between intuited data and objective data remained an issue for most of the participants. However, two were able to provide some thoughtworthy closing remarks on the issue.

> ***I think if we allow ourselves to use all the tools that we have, we'll hopefully get the clearest picture of the student. (P - C)***

> ***I think it's dangerous to be either totally intuitive or totally fact-based. I think that the combination is probably the safest bet in fairness to the students... and certainly I would want to be treated that way myself, because I think there are occasions where there isn't a fit with the student, and I think that we have to be fairly cognizant of that. (P - H)***

The Intuitive Assessment of Caring

The topic of caring, and the role of intuition in its assessment, arose unsolicited during the first interview. On reflection, I thought Participant A's comments hinted at a wealth of untapped information that might be elicited by asking the question(s):

Are there characteristics or behaviors in students that you think you primarily assess through intuition? If yes, what are they? (Interview Question #9)

Consequently, I decided to add those question(s) to all subsequent interviews. It was not until the fourth interview that it became necessary to ask the question(s) directly. In fact, Participants B, C, F and I all provided the information unprompted. Participants D, E, G and H responded to the question(s) immediately, and without hesitation. However, the most remarkable part of the whole exercise was that, without exception, solicited or unsolicited, all nine participants, in their own words stated that:

1. Caring was the one attribute in nursing students that could only be assessed by intuition.

2. While some of the elements or behaviors indicative of caring could be delineated objectively, caring as a whole could not.

As a follow up to this discovery, I asked participants if they could tell me some of the elements of caring. While participants were able to tell me many such elements, each reiterated that these elements were only pieces, and not the whole of caring. The major argument presented for this belief was that, while they had had students who exhibited many of the behaviors that most nurses would say were indicative of caring, participants had known intuitively that these students were **not** caring.

Consequently participants were, for the most part, adamant that 'true' caring could only be assessed intuitively.

> ***One particular student I am thinking of was... had high marks in theory, high marks in clinical, and acted and behaved in the way that you would expect... objectively nothing untoward was reflected. She spoke nicely to patients... used appropriate therapeutic communication techniques... but this person was absolutely a non-caring individual. Everybody knew it, but objectively she looked great. (P - B)***

> ***If I gave you a list of four things, I could find two students that could do all four of those things, and on a scale of one to five, one would be a five for caring and one would be a one, and yet they'd have done those four things even. (P - H)***

The strength and the consistency of the participants' belief that 'true' caring can only be assessed intuitively is evident in the following narratives from each of the participants.

<u>Participant A:</u>

> ***It's hard to measure how you see the difference when someone feels they've been cared for, or cared about. How do you make that assessment ... like do you say that they've carried out the components of a therapeutic relationship. Does that really measure what you're after? I think a lot of students can get by without ever having developed a therapeutic regard for their patients. We can't quantify this... but we know if it's there. (P - A)***

Participant B:

I should add here that the only part that I feel I can't reflect objectively is the area that deals with the student's underlying attitude of caring. That's the one area that cannot be broken down objectively, and I believe we have not been able to capture a way of determining whether that caring component is there... and I have to say that sometimes I've had students who were the antithesis of caring, but their nursing care was satisfactory... Caring is a core element of nursing and I think our ability to assess it in a student is intuitive... It's an intuitive thing or a feeling thing, a gut feeling... I know it, and I have no doubt that I know it. (P - B)

Participant C:

You know, caring is really intuitively sensed. There is something more to it than just the, you know, good hostess kind of thing. I've had students say they've established a relationship with their client sort of thing... and, you know, it would be very superficial. They didn't really know anything about their client. They wouldn't know if they'd been married, or if they had children, or any information at the end of the day whatsoever... even so much as the side they like to lie on, and all kinds of things like that. Then there would be another student who would have a wealth of information about their client... and yet I would know that the other student had been courteous with her client... but there was something in their demeanor and nature that wouldn't allow for caring to happen. Capturing the essence of that is intuitive. (P - C)

Participant D:

The whole aspect of the heart of the student. You will have some students who genuinely want to help their patients no matter what... it's just this whole sense of warmth about them. It's an intrinsic thing with them that puts a person at ease. It's their way of communicating. It's the human factor, the caring, that is really hard to write down. I don't know how you could assess it any other way than just a personal thing that you sensed about them. (P - D)

Participant E:

The qualities in a nurse that I most admire, and indeed which I have myself, are a caring nature. We don't have objective data that gives me that information. You get some feeling about whether this person cares for her fellow man. You don't have to be a mother to be a nurse... I'm not talking about that kind of caring. You have to have, I think, something inside you that says you care about what another person is going through to truly be a great nurse. One can learn all of the skills, the assessment, the technical, all of those things, and yet never really need to care about your fellow human being... and indeed, we have people like that in nursing. I know when that caring is there... and I have to say that I don't fail students who don't have it, because who does... but it's my gut that tells me whether that's there or not. (P - E)

Participant F:

This is either simplistic or very deep, but that they care. That they care enough to find out what they need to... that they care enough to do the nursing that a patient needs, as opposed to someone who is just walking through the paces, and this is what's listed to do, and this is what the textbook says to do so you take the steps. You know there is a difference when someone shows real caring. At the same time if a student doesn't have that, it's one of my buttons. You have a gut feeling about that with students... your ability to say whether or not that element is there, or has the potential to be there. (P - F)

Participant G:

Certainly a sense of empathy and caring. You can tell the students that aren't afraid to get in there with their patients and involve the family members. Some students always surprise me after a day of being with their patient, they're not able to answer the most basic questions... you begin to wonder what they were doing. Anybody can be taught to go through some of the technicalities of being a nurse in terms of giving medications and doing dressings, and changing the

> ***bed... but real nurses actually get in there and nurture relationships and get to know their patients and their families... what's important to the families and what's important to the patients, not just the mechanical issues associated with it. I definitely believe I sense that intuitively with students. (P - G)***

Participant H:

> ***I think probably those caring aspects. The actual feelings of wanting to help another individual, the honesty that they feel, that they love the job. You hope that a student actually wants to be at the bedside, that it's their choice to be there... and I think that you can only assess that, for the most part, through intuition. (P - H)***

Participant I:

> ***The being present to this patient... the being present to the family... that's what I can't seem to capture objectively. It's easy to remark upon it when it's there, but it's really hard to give feedback when I find it missing. I 'see' the feeling... I know when a student is totally present. (P - I)***

As the participants described some of the components of caring, they often used the word 'pieces' to refer to those components. Using the analogy of a puzzle, Figure 4 represents the participants' perspective on the assessment of caring, and the role of intuition in that assessment.

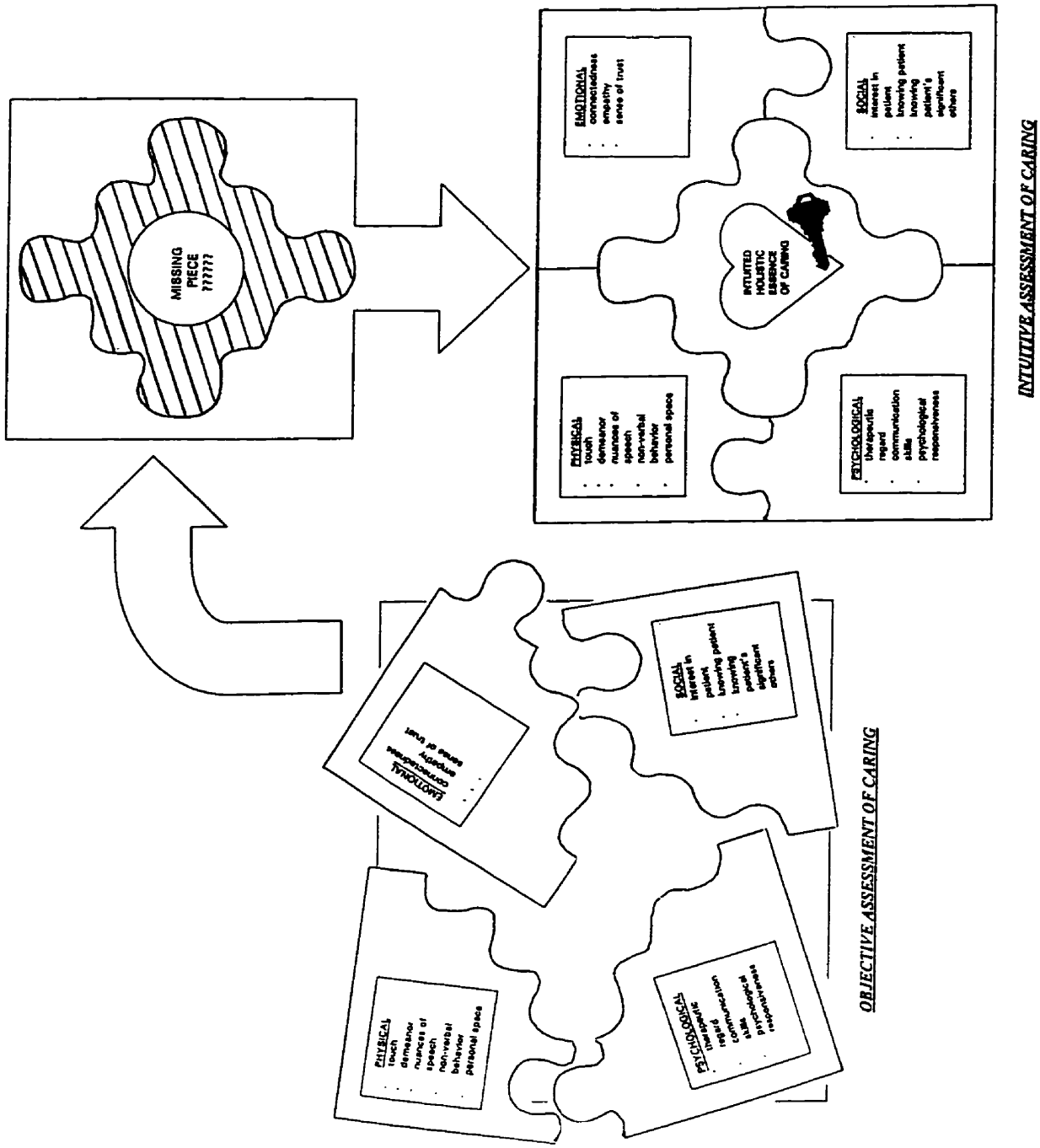

Figure 4: Participants' Perspective on the Assessment of Caring

Selecting Follow-Up Clinical Teaching Strategies

Positive intuitive experiences:

Participants indicated that the follow-up they would select for positive intuitive experiences about students' clinical performance was dependent on the type of positive feeling engendered. If the feeling suggested that the student was just a 'slow grower', the participants usually offered considerable positive reinforcement, and tried to find patient experiences that would allow the student to be successful, and thus gain a sense of confidence and competence. If the sense was that the student was already quite competent, then teaching strategies focused on finding students challenging patient experiences.

Negative intuitive experiences:

For the most part though, participants' thoughts about intuition and selecting follow-up teaching strategies, focused on situations involving negative intuited information. All participants admitted that when they had an intuited concern about a student, the relationship with that student became more time-intensive. However, most pointed out that time-intensive did not necessarily equate with more direct supervision of the student. In cases where safety was an issue, direct observation and supervision was

a must. However, many participants spent the extra time unobtrusively observing, while allowing the student to problem-solve. Others spent the time talking with the student to try and determine thinking patterns and knowledge deficiencies, in order to determine appropriate remedial activities.

> ***I make it a point to try and spend more time with the student... and I try really hard not to evaluate at this point. I talk with them and explore, to find out where the gaps are, and what actions will help fill those gaps. (P - B)***

> ***I try to back off... give them a little leeway... try to run them through things, and look for the holes. Then I try to work with the student to figure out how to fill the holes. (P - F)***

Participants readily admitted that when they had a student about whom they were intuitively concerned, they did a quick assessment of the capabilities of the other members of the clinical group, and those assessed as relatively competent were either given more independence than they might have been given in ordinary circumstances, or attached to staff for preceptoring.

> ***I think what I do is really quickly size up the rest of the group to identify which of the students I have that are strong... and I don't spend as much time with them, just maybe have a staff nurse keep an eye on them. (P - G)***

> ***I would soon pick out who were the stronger students... and I would tend to allow them to fly on their own. (P - H)***

Other participants focused on the weaker students' patients. This gave the student breathing space to perform, but allowed the clinical teacher to be readily cognizant of the situation.

> ***I spend a bit more time making sure that I really know their patients. A lot of times with a student I have feelings about, I don't want to jump on them...because I want them to be open and talking to me {section deleted}... but I want to feel like I'm really on top of the situation, so I'll spend more time sort of checking the patient out, who the staff nurse is... making sure I'm right up on what's happening with that patient... and I also read the chart a lot. (P - C)***

Several participants spent time developing clinical assignments that would increase the chances of the weaker student being successful.

> ***Well, I usually provide experiences for that student that are relatively secure and stable... and I try to make things happen so that they have tiny little successes, and can build some confidence. (P - D)***

> ***What I've learned to do is scale them up with a clincal assignment that is conquerable. (P - F)***

> ***I try to set them up to succeed by putting them in a situation where there are optimal circumstances for learning. (P - I)***

The final teaching strategy commonly implemented by participants in these circumstances was to use other individuals to assist in teaching or guiding the students.

> ***If I have this intuitive feeling about a student who is really struggling, and I can't be with the student that much, I will have the student buddied with another student that I have confidence in, and they become responsible to each other. (P - D)***

> ***If I'm totally occupied for whatever reason, I will often rely on the staff nurse to help the student out. These nurses that I work with have been in the area for so long, I consider them experts... and I trust their judgment about students... I find them to be quite reliable sources. (P - G)***

> ***One particular student that I remember was extremely anxious about the area... and I went and talked to the patient ahead of time and said, "This student is really nervous. Are you comfortable with her working with you?"... the patient was quite knowledgeable about her health, and she said she was quite comfortable to have the student, so essentially the patient taught the student that day. (P - H)***

Participants indicated that they used their intuitive experiences primarily to focus their assessment of students, design appropriate follow-up teaching strategies, and in the case of negative intuited information, develop remedial activities. For the most part, participants saw the need to support their intuitive experiences with objective data, within reason. The one attribute that all participants agreed could truly be assessed only by intuitive means, was caring.

Valuing Intuition

Participants were unwavering in the importance they placed on their intuitive experiences. Part of that

valuing was based on the degree of accuracy of participants' intuitive experiences over time. Table 8 illustrates participants' comments regarding the degree of confidence they had in the accuracy of their intuitive experiences.

Table 8: PARTICIPANTS' DEGREE OF CONFIDENCE IN THE ACCURACY OF THEIR INTUITIONS

Participant A:

"For the most part 99 % of the time I'd say they're right on."

Participant B:

"It's usually accurate... usually my gut feelings are correct."

Participant C:

"Those times when I haven't listened to my gut... then things happen, and I know I should have. My gut feelings, for the most part, are pretty accurate."

Participant D:

"They're usually right. Although I'm still open to growth, I'm more and more confident in the correctness of my intuitive feelings."

Participant E:

"Well, by and large, I would say that I have confidence enough that I trust the feeling... that's all I can say."

Participant F:

"Somewhere over the years I've learned to trust my intuition. I think maybe because of my ICU experience. I think they're usually accurate ... not always, but most of the time."

Participant G:

"I think over the years I've had my gut feelings substantiated many times. I have confidence in my gut feelings. When they're validated over and over you gain confidence."

Participant H:

"I have been wrong... but over the years most of my intuitive feelings have been right, most of the time."

Participant I:

I think my intuition's pretty good. In fact, I know it's pretty good... not foolproof, but mostly accurate."

Participants felt that their intuitive feelings about students were equal in importance to objective data. Participant C went so far as to say that she felt her intuitive feelings about students were, in some circumstances, more important than the objective data.

> ***Some people would really disagree with this, but I would tend to say that I think a lot of times it's [intuition] more important than objective data. Not that objective data isn't important... but my experiences with intuition have tended to reaffirm this belief, that's why I think that. (P - C)***

Six of the participants made no qualifications to their belief in the value of their intuitive experiences.

> ***I think they're just as important, if not more important than objective data... to me they're very important. (P - A)***

> ***I think intuition is a really important part of clinical teaching... and its an area that we haven't really reflected on very well. I value intuition... and I value the intuition of fellow teachers. (P - B)***

> ***Intuition shouldn't be criticized or devalued as part of the judgment package for assessing students. I think intuition has value in teaching nursing, in practising nursing and... well... it happens in your everyday life... it's part of human behavior. (P - D)***

> ***... for sure I believe my gut feelings are as important as the objective stuff... I have to believe that, because that's what I'm going on, by and large. My say so that they [the students] go on is based on what I see and my interpretation of it... and my interpretation is mostly based on my gut feeling. (P - E)***

> ***After a couple of years, I lost faith in those systems [criteria-driven clinical objective systems] being able to capture what's important about nursing and what's important about students... those systems don't allow you to say this person fails because I have a gut feeling about them... but I trust my intuition. If you don't trust your subjectivity, I'm not sure how you make sound decisions. (P - F)***

> ***I probably put a lot of weight on my intuition because over the years I've seen my gut feelings or intuitions prove to be true... that they are valid feelings. (P - G)***

Participants H and I firmly believed in their intuitive experiences, but qualified their thoughts by adding that, irrespective of their own personal beliefs, intuition should be validated by objective data. I found this a rather noteworthy perspective for Participant I to take, as she had identified herself as being intuitive by nature. On reflection, I realized that the likely reason for Participants H and I qualifying their statements as they had, was because they were the two participants who told me about specific experiences in which their intuition had been negated on the basis of objective data.

> ***I would say that my gut feelings are just as important to me as objective data about students... but I do think they have to be validated. (P - H)***

> ***I do believe my gut feelings are equally as important as objective data, but I don't think you can grade a student using only your intuitive feelings... I believe you have to substantiate with objective data. (P - I)***

The strength of participants' beliefs in the value of their intuitive experiences was threaded throughout their stories. Words like *faith, trust, meaningful, rightness, wholeness, confidence* and *certainty* peppered participants' narratives as they spoke about their intuitive experiences with students in clinical practice.

Differentiating the Intuitive Experiences of Novice and Expert Clinical Nursing Teachers

During the first interview, I noted that Participant A occasionally used qualifying phrases such as:

... in the early years... but now
... when I first started teaching I... but now

As with caring, I became alerted to the possibility that there was important and relevant information that might be brought forward by asking the question:

How are you different now in the way you assess students in the clinical setting as compared to when you were a new teacher? (Interview Question # 8)

The question elicited a wealth of information about participants' remembrances and beliefs about the differences between novice and expert clinical teachers. The volume of information was such that I was able to propose a theoretical framework describing the differences between the two. That framework is outlined in Table 9.

Table 9: DIFFERENCES BETWEEN NOVICE AND EXPERT CLINICAL NURSING TEACHERS

	NOVICE	EXPERT
Underlying Influences	1. Order of perspective and allegiance tended to be first self and client, then profession, and then student	1. Order of perspective and allegiance is student and client first, then profession and self
	2. Feared student and own potential mistakes; had limited confidence in own abilities as a clinical teacher	2. Expects student mistakes as part of learning; confident in own abilities as a clinical teacher
	3. Lacked experience as a clinical teacher	3. has vast and varied experience as a clinical teacher
	4. Feared taking risks	4. Comfortable with taking risks
View of Students	1. Saw students primarily as a group; expectations of students were often group expectations	1. Sees students as individuals with a range of abilities; expectations are based on individual learning needs of students
	2. Was not trusting of students	2. Basically trusts students unless a valid reason evident to not trust them
	3. Had narrow range of what was considered 'normal' expected and 'normal' accepted behaviors; 'normality' emphasized positive behaviors like enthusiasm, eagerness, attentiveness	3. Has a broad and flexible range of what is considered 'normal' expected and 'normal' accepted behaviors; 'normality' includes positive behaviors, but may also include such behaviors as quietness, nervousness, anxiety, hostility, indifference
	4. Tended to overestimate students' clinical knowledge level	4. Has a realistic perception of students' clinical knowledge level
	5. Tended to be overly hard on students	5. Tends to be more relaxed with students

Assessment of Students	1. Had a narrow repertoire of assessment abilities	1. Has a broad and sophisticated range of assessment abilities
	2. Was usually only able to collect surface, obvious and superficial data about students; accepted most student data at face value	2. Is able to see subtle student data; takes a deep look to determine meanings in student data
	3. Trusted objective 'hard' data; subjective, **intuitive** data tended to cause confusion, or was ignored	3. Has faith in both objective 'hard' data and subjective, **intuitive** data
	4. Took some time to accurately assess students; required a lot of data to make accurate assessment	4. Accurately assesses students relatively quickly; requires less data to make an accurate assessment
	5. Focused assessment on students' ability to regurgitate factual information	5. Focuses assessment on how students assess, and how they use the knowledge they have
Teaching Style	1. Designed controlled, structured, teacher-driven clinical practice periods	1. Prefers flexible, relatively unstructured, clinical practice periods, driven by students learning needs
	2. Saw self as the only one responsible for, or capable of, supervising and teaching students in the clinical setting	2. Sees self, staff, students' peers, even patients, in given circumstances, as capable of supervising and teaching students in the clinical setting
	3. Tended to hover over students; when students got into difficulty, tended to take over	3. Tends to stand back and allow students to work; pushes students to be independent as appropriate; slow to interfere so that students can learn to problem solve
	4. Limited repertoire for handling problems with students	4. Multi-faceted and varied repertoire for handling problems with students
	5. Teaching style tended to be reactive	5. Teaching style tends to be reflective

Participant narratives were rich with support for the perspectives outlined in Table 9. Several participants described how their allegiances and perspectives as clinical nursing teachers had changed over time.

> ***Well, at first... when you're first teaching... you really... you're looking at it [clinical teaching] from the teacher's point of view, not the student's point of view. (P - B)***

> ***I don't know... when I first started teaching... to be honest, I think I had more of an allegiance sort of thing to the profession than to the student. (P - C)***

> ***... The student may simply not know that they've broken a code of nursing or whatever... (P - F)***

> ***When I first began teaching I had a very clear idea that I was a gatekeeper to the professional organization and that was my role and responsibility... that while I was here to teach students, I was also here to ensure that standards weren't breached... and because the student meant well or tried hard was irrelevant. Now I would say that, while I still have strong feelings about standards, I role model more for students... and I allow time for learning. (P - H)***

Many participants explained that, as their clinical teaching experience grew, so did their confidence in their teaching abilities. Along with increased confidence came increased comfort with taking risks with, or on behalf of, students.

> ***Early on I felt this awesome sense of responsibility that I couldn't let them [the students]loose because I was afraid of what they might do... because I was unsure of what they did anyway. (P - B)***

So I've seen a lot of growth in myself... feeling comfortable and confident that I can make appropriate judgments... (P - D)

When a student makes an error now I try to say, "This is learning. Let's talk about this problem. Let's find a way to ensure that it's not going to happen in the future." (P - D)

... and there's those feelings about letting students go off and pay the consequences... they don't really bother me anymore. (P - D)

New teachers, by and large, live in fear of mistakes... they live in fear of that... just like students have this notion that they could make a mistake that could cost somebody their life... and that's a very real fear that we have to help them get past... and if we [teachers] also have the feeling that everything is so critical and urgent, we are not helping them. It's, "You made a mistake. What do you do about it? What have you learned? How were you able to pick up on it and do the things to counteract the mistake?" I think this is crucial. If you are able to not jump down the student's throat for a mistake, I think you've gone a long way to earning their trust... and they will come back to you when they make the next mistake... because there will be another one... hopefully not the same one. (P - E)

I guess with experience comes confidence... that confidence that allows you to take the odd risk with a student. (P - G)

Now I have the confidence to role model good nursing for the students. (P - H)

As the factors that influenced participants' behavior changed when they gained expertise, their view of students also changed. The most distinct change seemed to be in the ability to look at students as individuals, and

not just part of the current clinical group.

> *... now I have a better idea of where a student should be at a certain level in the program... I look at the individual more now to see where they are as compared to where they should be... and if they're not where they should be, why is that? (P - B)*

> *Originally I viewed my clinical group as a group... and as a clinical group we would do X, Y and Z... and then we would move through experiences 1, 2 and 3. Now I'm a lot more comfortable with having a group of six or seven students, and they're all at different stages. (P - D)*

Participants' trust in students increased over time as well.

> *... so I've become better at trusting their ability to carry out activities. (P - B)*

> *My baseline philosophy is: I absolutely, without qualification, trust you, until I see a pattern develop that says I need to be concerned. (P - E)*

> *I guess as a beginner I took the sort of culture that you don't trust students, that was sort of laid out as the ground rules... (P - F)*

With increasing expertise and experience, participants became more tolerant of a wider range of behaviors in students.

> *I can reflect back on when I was a new teacher... I used to think that a student had to be attentive... they needed to always be paying attention... and come looking clean and neat... and always eager, asking lots of questions. Now. you know... well, I certainly want them to be awake, that's the least of what I expect... but I'm more comfortable with a range of behaviors...*

> *like some of them will be pretty nervous, others are going to be quiet and not talk as much, and so on... It doesn't necessarily cause you problems that first little while if some even look bored. (P - D)*

> *I've even had students who came to me hostile and angry... and since I knew it wasn't necessarily directed at me personally, I just worked with it. (P - H)*

> *I think initially I recognized enthusiasm as a good indication, but I wasn't able to read the more subtle signs as well... now I know that the student who confesses that they are really frightened ... I know that's not an indication that they're not going to do well. (P - I)*

As novice teachers, participants often made the mistake of expecting a higher level of knowledge in students than was actually reasonable.

> *... and I was assuming that they were at a much more advanced stage of being able to actually communicate with people. This incidents stands out in my mind because there were two students that I had to totally peel off the wall outside the room, and walk in the room with them. They really needed... I didn't think they did at the time... but I found out later... that they really needed me to walk them through: how you say hello to somebody, how you pick up equipment and actually talk to them while your doing it. (P - B)*

> *Now I will tell students, "There's going to be some gaps in your knowledge that you're going to be embarrassed that you have... and you'll think you should know this and shouldn't have to ask." (P - F)*

> *I have to keep reminding myself... you know... a hundred times, this is their very first exposure, and it's sometimes very, very threatening for them. (P - G)*

With more realistic expectations for students, participants relaxed with them in the clinical setting.

> ***When I look back, I was much harder on the students than I needed to be. I see some now, that didn't fare all that well with me, who are very successful nurses... so I've learned to relax a little more with them. (P - C)***

> ***The first two years I taught, I failed a lot of students... now, I'm probably more laid back with them... asking them questions in a calmer way... a lot calmer (P - H)***

Participants felt their assessment skills in relation to students were very limited in the early years. As well, they placed an inordinate amount of faith in 'hard' data, that was often gathered at a very superficial level. This was compounded by an inability to assess students rapidly.

> ***At one time I would ask many, many questions to figure out where a student is at... now it seems that I can use fewer questions to get to the same place (P - B)***

> ***I'm better at assessing where students are, and why they might not be where they should be... and I'm quicker at doing it. (P - B)***

> ***Probably within the first week or so I have a good idea who's going to make it and who isn't. (P - D)***

> ***One of the things I did when I was new at teaching... I was heavy, heavy on the factual data about students... and it all seemed extremely vital to me. (P - C)***

As a novice I was criteria-driven... very uncomfortable when I was unable to collect all the information the piece of paper said I needed to collect. I was very concrete. (P - E)

Initially I wrote down everything. I had reams of notes about students... heavy on the objective stuff. (P - F)

A lot of my work now is with clinical teachers personally, and in the past year most of them were brand new to teaching... and it was kind of funny. They're doing the things that I did, you know. They'd come and tell me a story about something a student has done, and they're all bent out of shape, and it's the end of the world, da-da, da-da, da-da... and very often I would say to them, "Do you really think anybody could be that stupid to have done what this student did?"... you know, "Is it really stupidity?" .. then I help them look a little deeper, to see what's maybe behind it... (P - F)

When I was a new teacher, you know, I probably looked at things more superficially... maybe not as in depth. I was just wanting the day to go smoothly, without any major altercations. (P - G)

When I was in surgery with students, in the early years, I'd run around with checklists. There's nothing wrong with checklists, per se... it's just that that's all I relied on to give me information about how students were doing. (P - H)

Participants described their assessment of the student's knowledge base in the novice years as superficial as well. Their time was spent determining the student's knowledge of facts, but not necessarily their understanding of those facts.

I placed a lot more demands on students as far as information... sort of regurgitation... than I do

> ***now... to make sure they had a certain knowledge set seemed more important. Now there is some information that, you know, I expect them to have but... I'm much more interested in how they use what they've got, and whether or not I see them moving in the right direction. (P - C)***

> ***I was very concrete. I didn't spend a lot of time saying, "Now, what's your plan for the day?... and how do you priorize your patients?. Now, I tend to say things like, "What's your focus for today? What do you think you want to do with this patient today?". So I think I spend a lot more time trying to get the student to evaluate the situation globally, instead of focusing on detailed facts. (P - H)***

With the change in factors that influenced their teaching, and the increase in experience and expertise, the participants noted a gradual change in their teaching styles. With time, clinical teaching periods became less highly structured in advance. Participants were able to give students some space to grow. If problems arose they had a range of ideas for dealing with them, and were able to do so in an open manner. As well, they loosened controls and allowed others to help with student learning in the clinical setting. Their teaching took on a reflective, rather than a reactive, flavour, and showed consideration for the many ways students learn in clinical practice.

> ***I think I try not to over-supervise and over-assess them. You want to give them a bit of space to grow in. (P - A)***

> ***If they have trouble getting it [the answer] out, I can take them back a few steps... start them back at that point and bring them forward... help them make ties...***

help them explore how they would search. I try to draw out from them if there are similarities in this situation to their past experiences. (P - A)

I notice the difference in how I am with students now. I used to follow them around like a mother hen. (P - B)

I have to stop in my tracks and continually go back and re-think, try to anticipate what they or their patient is going to need from me. (P - B)

Frequently I tend to reflect on... although I'm looking at what's happening, I'm considering the context, or the particular circumstance, or the particular student. (P - C)

When I first started teaching I really didn't have a sense of how to allow more freedom. I felt the need to be at everyone's side as much as I possibly could. I was in a direct supervision role. I give them a lot more freedom now. I'll say, "There are a lot of experiences here... go for it. If you see anything else along your travels, come and chat with me, and we'll see what we can do to arrange these experiences." (P - D)

I used to feel the need for control and predictability in my clinical practice periods with students. (P - D)

I often go through a period of reflection, sometimes even self-doubt.... where I re-examine things, because I want to be absolutely fair to the student. (P - D)

I will approach a student, whether my feelings are good or bad, and confront them so we can deal with the issues honestly. (P - E)

I think initially when I started teaching I went for close supervision... in retrospect of course, especially if you've got an anxious student, close supervision makes them more anxious, and they make mistakes, and it has sort of a snowball effect. (P - F)

I think role modelling is a powerful clinical teaching tool that I wasn't able to use that well in my early years, because I was too busy supervising. (P - F)

I'm more inclined to speak up to a student sooner than I might have been in the past, to try to bring to their attention things that they need to work on. (P - G)

Knowing the nurses that I work with, I have a lot of confidence in their ability to assist me with teaching and evaluating students... even in just letting me know when things aren't right. (P - G)

I pretty much liked my clinical days to be planned, and as long as nobody got injured or harmed... you know... I was content. (P - G)

With students that are nervous, I'll try to pair them with patients that are good teachers themselves. (P - H)

Sometimes I'll just call students on deceptive behavior, and give them another opportunity. (P - H)

I tend to stand back or step away more now... let the student work. (P - H)

Now I recognize that as teachers we should role model good nursing to the students. (P - H)

Because I'm working with dying patients, I often don't get feedback from the patients themselves near the end, but I get a lot from the families. Families are always so appreciative of quality care. So when I come in the room where there's a student, the families always feel the need to give me feedback about the student... and they're pretty accurate readings, I think, that I get from families. (P - I)

It is clear from the many participant anecdotes, that there is gradual shift with the gaining of experience

and expertise, to clinical teaching that is highly student-focused, and clinical-circumstance driven.

Novice and Expert Intuitive Experiences

In the process of examining the relationship among intuition, expertise and experience from the participants' perspectives, some provocative data began to emerge. These data suggested that intuition about students was not exclusively within the realm of the expert clinical nursing teacher. What became evident, in the stories of the participants, was that many of them had had intuitive experiences as **novice** clinical teachers.

Participants noted that while they had had intuitive experiences with students as novice clinical teachers, those intuitive experiences were distinctly different than the experiences they now have. According to the participants, the novice experience of intuition is primarily based on, in descending order of importance, clinical practice experience, general life experience, and limited teaching experience. The expert experience of intuition, on the other hand, is primarily based on, in descending order of importance, clinical teaching expertise and experience, clinical practice experience, and life experience.

> ***I think the more experienced you are the more intuitive you are. I think in the early years the intuitive experiences you have about students aren't honed, and***

> ***they're based on life experience maybe, and clinical experience to some extent. (P - B)***

> ***There were some intuitive experiences I had with students when I first started teaching, but they were more or less based on intuition about nursing, not about the students themselves (P -B)***

> ***I feel that way about life in general. I think I've probably had intuitive experiences with students from the beginning, just because I see things intuitively often in regular life. (P - C)***

> ***The intuition about students that you learn over time is based on your experience working with students, and your skill as a clinical teacher. (P - F)***

Further, participants commented on factors they felt influenced what novice and expert clinical teachers do with their intuitive experiences. According to the participants, novices are influenced by a mind-set that focuses almost exclusively on objective data. As well, participants suggested that because novice clinical teachers' allegiances tend to be to themselves, the patient and the profession ahead of the student, and their focus more on the group than the individual, the meaning they place on an intuited piece of information is viewed through that perspective. Participants also supported that novice teachers are less flexible, less likely to take risks with student learning, less likely to expose themselves to the censure of their peers, and less likely to share their intuited thoughts with students.

> ***As a new teacher, you know, I had this feeling that the students who were not eager and asking questions had a 'bad' attitude. (P - D)***

> ***I sometimes just clean it right out by saying, "I don't know what this is worth, but this is my feeling.", and I would be willing to be challenged on that... but I would never have done that as a young teacher. (P - D)***

> ***In the early years, if I picked up a vibration from a student that they were bored, I'd internalize that. I would feel that I was not doing something to make this person engaged. (P - E)***

> ***I trust my gut feelings enough to put them down on paper now. I wouldn't have done that before. (P - F)***

> ***I was less confident as a novice, so I hesitated to try and pinpoint a gut feeling in case I was wrong. As I became more confident about my intuition with students, I realized that maybe my hunches about students would, in the end, help them grow. (P - G).***

> ***When I first started teaching, if I sensed something with a student, my loyalty to the patient and the profession always came first. If I thought that the student wasn't right for nursing, I'd try to find a way to convince her to drop out of the course. I still do this, but first I try to discover what the problem is, and is it solvable, and does this person have what it takes to be a nurse. (P - H)***

Finally, participants purported that novice clinical teachers handle intuitive data differently than do expert clinical teachers. The thoughts they expressed about this were logical, when consideration is given to the basis for novice intuitive experiences, and the factors that influence their functioning as clinical teachers.

> ***Let's say I have a feeling that a student isn't safe. If I'm able to discover the reason for the gut feeling, I'll maybe share this with the student, and maybe we can plan a strategy depending on what the concern is. In the early years, I would focus on collecting tons of hard data to support my need to ensure safety above everything else. I still focus on the safety part, but I'm willing to take some risks with students within that safety net. (P - A)***

> ***Initially I was quite doubtful and was wondering... I would sit in my office and pull out my hair and wring my hands and try to decide what to do with these feelings. (P - D)***

> ***Sometimes I would collect lots and lots of objective data. I think maybe because I wanted to deal with something concrete. I wanted to ignore these feelings that I couldn't pin down to anything in particular. (P - H)***

Participant I was atypical in reference to this pattern of novice and expert intuitive experiences. Participant I described herself as intuitive by nature, and as such, she had to spend her novice teaching years becoming better at assessing and using objective data about students.

> ***Because I tend to be highly intuitive, I would make my assessment on the overall picture, rather than the small details... so I needed to learn those details so that I could give students specific feedback that they could act on. I had to force myself to be attentive to all those little details that I was stuck with. (P - I)***

Participant narratives provided evidence suggesting that novice clinical teachers do experience intuition, but that the processing of that experience is qualitatively different than that of the expert. Based on

what participants shared in their stories, my interpretation of the differences in that processing is illustrated in Figure 5.

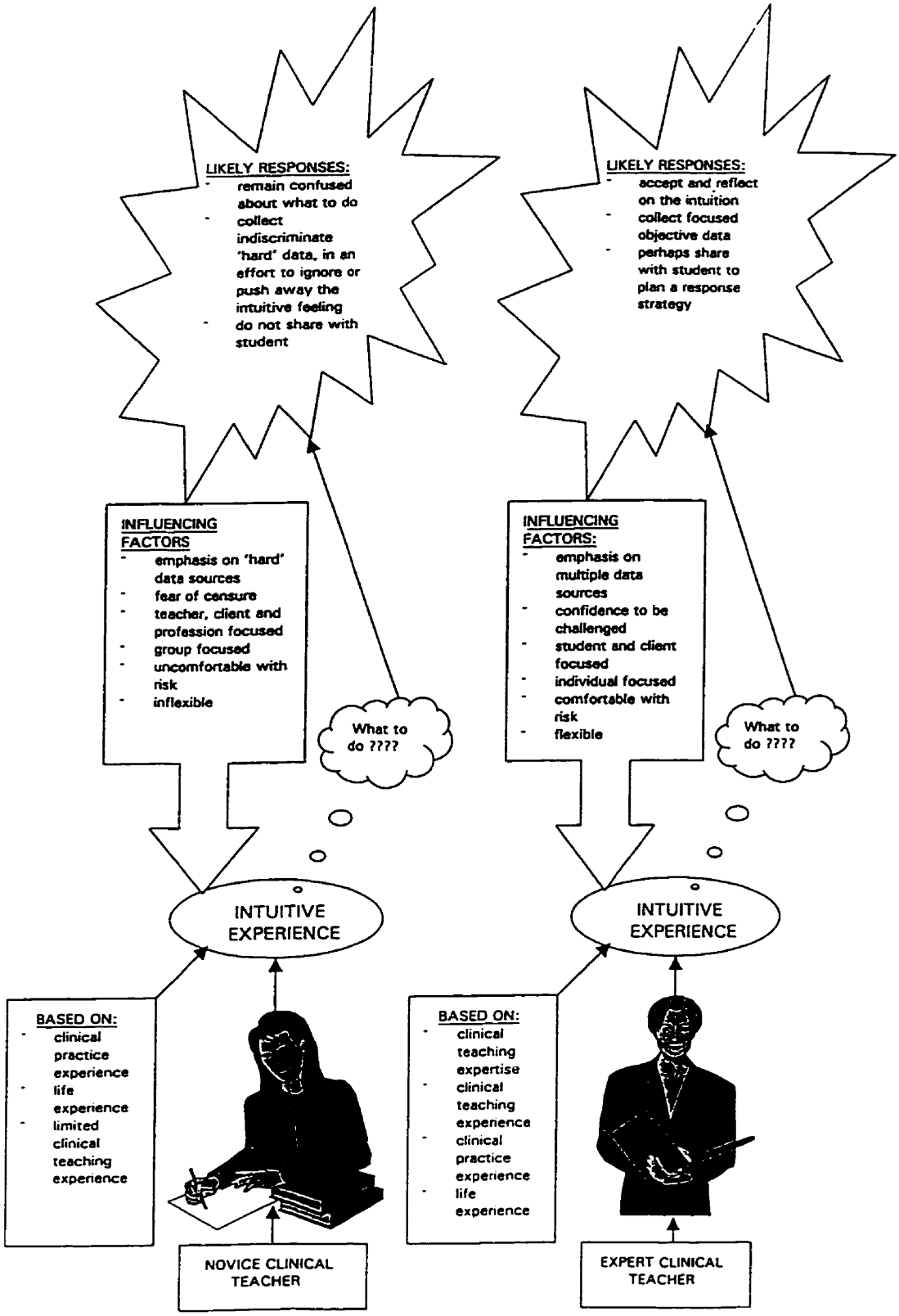

Figure 5: Differences in the Intuitive Experiences of Novice and Expert Clinical Nursing teachers

Profiling the Intuitive Processing of the Expert Clinical Nursing Teacher

The volume and depth of data that participants were able to provide about themselves, their clinical teaching, and their intuitive experiences were extensive, and filled with insight. Trying to summarize the data seemed reductionist, and did not do justice to the meaning of the data. What finally emerged as I contemplated this summary was, a 'fuzzy' prototype of the intuitive processing of the expert clinical nursing teacher, through the eyes of the participants of the study. My development of this prototype encorporated what the expert clinical teacher's intuition is based on, how it is triggered, what it is influenced and supported by, how it is reflected upon, how it is analyzed and given meaning, and finally how it is used. The most creative manner I could select to show this processing, holistically, was through illustration. Figure 6 is a visual prototype of the intuitive processing of the expert clinical nursing teacher.

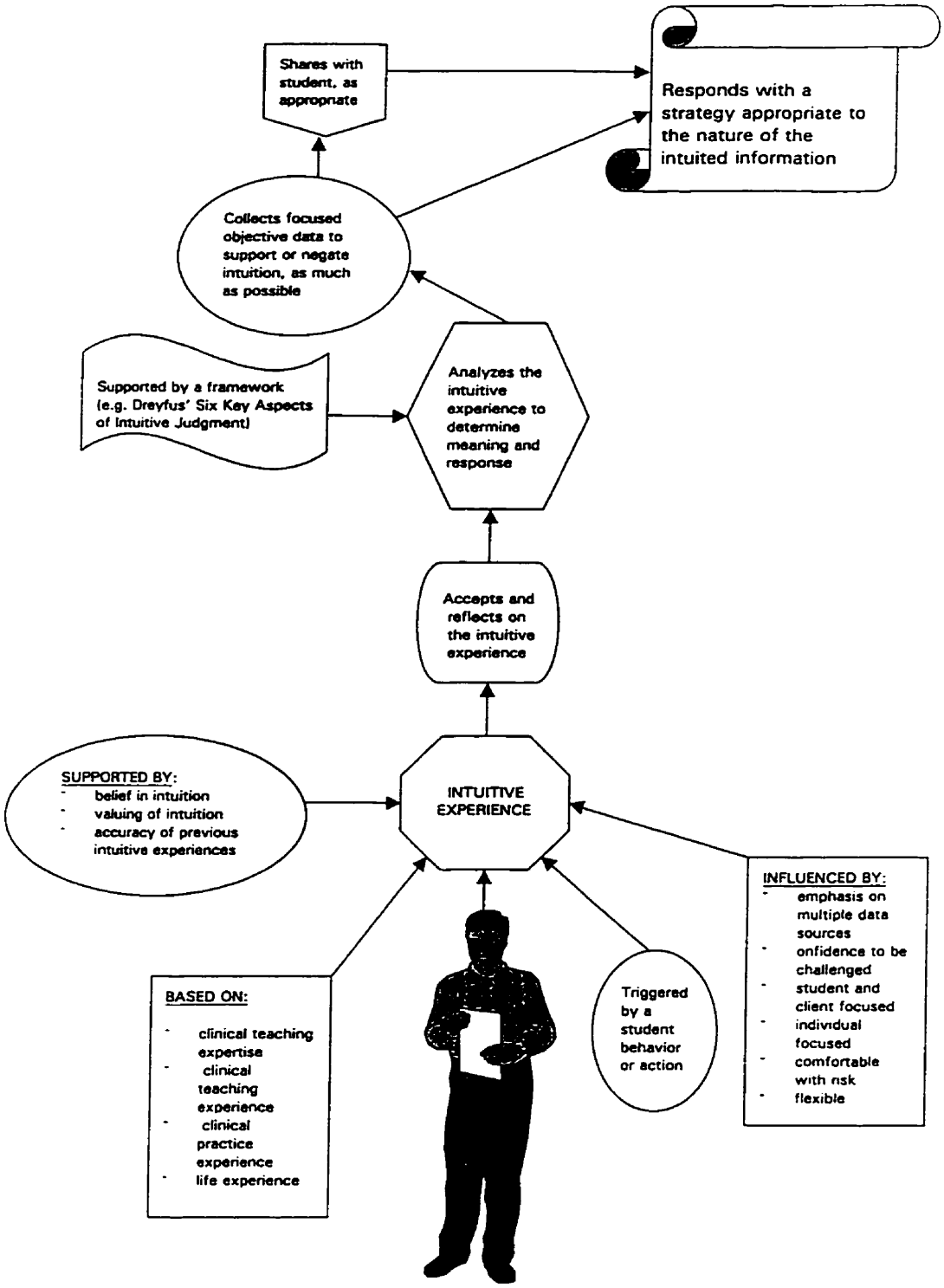

Figure 6: Prototype of the Intuitive Processing of the Expert Clinical Nursing Teacher

Reflecting on Intuition

Participants concluded the stories of their intuitive experiences with many unanswered questions, as well as personal reflections on these experiences and how they would like to see them used in the clinical practice education of nursing students. The most provocative of their comments are quoted below, and do give pause for reflection as the discussion chapter begins.

Participant A:

> ***I think we have tried to objectify everything that we do... and there's reasons we had to do that... but we've lost a lot in the process of that. We've told each other that when we act upon our feelings... our gut feelings... our sense of knowing from another perspective, that it's not valid... it's not as equally important as objective pieces of information. So therefore, I think we might have arrived at the same decision or the same conclusion later on, because of having objectified all those pieces in between... but they were really there to start out with. We already had it, without having to do all those pieces to get to there. (P - A)***

Participant B:

> ***The one thing I really kind of wish is that we acknowledge right from the start that there is a difference between novice and experienced, perhaps expert, clinical teachers. It would have been better, when I first started, knowing that I was a beginner. I never had that thought... "after all I'm just a beginner"... and so, therefore, there would be a learning curve involved in teaching nursing also.... as stupid as that sounds. So I feel it would probably have been a very valuable thing to have had some mentoring from more experienced instructors to guide the process, or, you know, even make you aware that there was a process. Learning to use intuition, and***

valuing the intuition of other teachers, is part of that process. Even though you might have been an excellent practising nurse, and you think that makes you good at what you're doing... you are not going to be an experienced teacher until you <u>are</u> an experienced teacher. (P - B)

<u>Participant C:</u>

There was a time, I believe, when a sense of intuition, in terms of the relationship between people and mentors... where that was an important part of the relationship... and I think probably in the previous century there was a lot of that kind of thing that happened. I mean, I think that was really a part of how one determined whether their pupil was coming along... and now we've got to the point where everything has to be hard, cold data. I'm not sure we haven't lost something in the transition... maybe we need to think about the value of mentoring students... that means more time with students to develop these relationships ... but of course, we don't have that kind of time. (P - C)

<u>Participant D:</u>

I guess what I struggle with is always being tied or bound by the basic rule that you must have proof of what you're saying about a student. You have to be fair. You can't be biased... all those kinds of things... and I know there's value to all of those things... but at the same time, nursing is not an exact science, and there's more to it than just observable skills... and I think we will continue to struggle as nursing instructors with how to evaluate the kinds of things that students know themselves to think about. I guess in terms of intuition... I think it's just necessary to keep reminding ourselves that to use intuition is OK. (P - D)

<u>Participant E:</u>

As an expert teacher I feel a little at a loss as to how to help new teachers, because I no longer remember what I do... how I got to where I am... and to give

them my tricks. They may be tricks, but I don't know how it is that I know now to be alert to a particular behavior. It's so contextual, that I wish I could know more... so I could pass on more... because I think we need desperately to help new teachers develop their skills in clinical teaching, and develop their confidence and intuition. I have some concerns about the lack of direction that we are able to give new teachers, in order to have them teach a nursing student to be kind and compassionate and intuitive. What it seems like to me is that the novice students are subjected to linear, rigid, novice teachers, and they do learn something in that process. They learn that, no, you don't care for one and other... and it does affect caring and sensitivity in nursing. It makes me very anxious about the kind of education that we're giving them. (P - E)

Participant F:

The other big puzzle for me... and maybe you can't answer this... but beginners like structure because they lack experience and intuition... and yet I think a lot of us understand or believe that the structure and criteria is only a starting point, and not the answer... it's limited, and it's not the final answer. How do we help beginning teachers look outside the box, or do we just have to wait? (P - F)

Participant G:

I don't know if I have anything different to say than what's already been said. Just that I strongly believe in intuition, and think it's a skill that deserves more consideration in nursing education. I don't know if you can teach it... but if you at least acknowledge it as valid, I think we can go from there. (P - G)

Participant H:

I believe we are responsible as clinical nursing teachers to ensure that the students have good learning experiences when they're in the clinical setting. I think part of that is knowing students, and part of knowing students includes your intuitive

> ***thoughts about where they are clinically. Intuition is a skill that I've learned to respect over the years. We need to be more open about it. We all use it, we're just reluctant to admit we use it. (P- H)***

Participant I:

> ***There are some things I'd like to know and don't know. Is it [intuition] something that's just innate in the person, or is it something we can cultivate?... and if so, how do you teach it to students?... how do you teach it to teachers, for that matter? If it's something that you either have or don't have... I'm kind of stumped, because it's so important. (P - I)***

Summarized Overview of the Findings

Seven themes related to the use of intuition by expert clinical nursing teachers in the assessment of the clinical performance of nursing students emerged from the study.

Theme 1: Experiencing Intuition

Study findings indicated that every participant experienced intuition related to the assessment of nursing students in the clinical setting. These experiences were numerous, and of both a positive and negative nature. The overall study findings suggested that, while all study participants had experienced intuition of a positive nature, with the exception of Participant I, the character of most of the intuitive experiences had a worrisome or negative slant. With the exception of Participant I, participants

recalled negative intuitive experiences more readily than positive ones.

There were similarities and differences in participants' actual descriptions of their intuitive experiences. Again, with the exception of Participant I, all participants noted both physical and emotional qualities to their intuitions. Participant I identified her intuitive experiences as having, from her perspective, an underlying intellectual tone.

A lack of precision and verbal clarity was evident in participants' descriptions of their intuitive experiences. This inexactness was notable in both the language and phraseology used in participants' descriptions. Participants also made reference to the non-conscious character of their intuitive experiences.

Most participants were able to identify types of behavior in students that triggered negative intuitive responses. These types of behavior included those of a physical, personality, social and verbal nature.

All participants had had positive intuitive experiences involving students in the clinical setting. These positive experiences fell into three general categories. The most prevalent were intuitive experiences that left participants with the feeling that a student would be able to perform satisfactorily, even though the available objective evidence suggested otherwise. These intuitions

related, for the most part, to students whom participants felt were simply 'late bloomers'. Given time and appropriate experiences, participants felt that these students would develop the confidence necessary to produce supportive objective evidence for their postive intuited feelings. Less common were positive intuitive experiences in which participants expressed trust in the outstanding capabilities of students on very little, if any, objective evidence, and experiences where there was a sense that the student had gained a deep grasp of a concept, or a depth of understanding of a patient's circumstances.

Theme 2: Analyzing and Interpreting Intuition

The Dreyfus conceptual framework, ***Six Key Aspects of Intuitive Judgment***, was used to examine participants' analysis and interpretation of their intuitive experiences. The thinking processes of participants in relation to the analysis and interpretation were well-matched to the Dreyfus model. The most common interpretation made by participants was that of *pattern recognition*: recognizing a familiar pattern or sequence in a student's behavior that produced a sense of alertness. Every participant provided anecdotal examples of pattern recognition. Participant narratives also provided ample evidence of *similarity recognition*: recognizing similarities and subtle differences in student situations; *commonsense understanding*: having a

deep grasp of the contextual meaning in situations involving students; *sense of salience*: being able to priorize the importance of context-laden data; and, *deliberative rationality*: being able to examine a piece of data from another perspective to determine its meaning and significance. Although unexpected, participants also provided support for the Dreyfus model component: *skilled know-how*. Although not evidence of *skilled know-how* in the manner of a technical skill, participants related the importance of subtle questioning strategies, and unobtrusive data gathering, in the interpretation of intuition related to student performance.

Theme 3: Using Intuition

Participants' narratives provided evidence of two major roles for intuited information in relation to student clinical performance. The first of these roles was the focusing of assessment and data gathering about students. Participants believed that in order to make intuited data operational in the clinical arena, objective support for such data should be sought. The rationale for their belief was fourfold. The first, and most pragmatic, reason was that they lived in a primarily linear, analytical world. In such a world, objective data was, for the most part, required as support for decision-making. Secondly, particularly when safety and integrity were at issue,

objective data were crucial to support recognition of the problem and design remedial activities. As well, several participants felt that for much intuited data, objective information was available, and locating it added to the accuracy of the intuition in the eyes of others. Thirdly, several participants supported the seeking of objective data as a means of protecting students from the unfairness of an incorrect negative intuition. Finally, participants saw objective data that supported intuited information essential to providing useful and meaningful feedback on which students could base behavioral change.

The importance of feedback lead participants into a discussion of the relative merits of criteria-driven evaluation tools. For the most part, participants accepted such tools as necessary, but restrictive, and found a number of creative ways of working around the style of such tools to get their intuited beliefs about students formally noted.

The role of intuition in the assessment of caring was clear to all participants. The consistency and tenacity of their shared beliefs on this issue were notable. All participants believed that caring was the one attribute in nursing students that could only be assessed by intuitive means, and while they could isolate elements of caring objectively, they were adamant that the attribute of caring as a whole could not be delineated analytically. Some

participants concluded that the additive and complementary value of objective data in relation to intuitive information could only be viewed as beneficial to the assessment of student performance.

The second major role participants perceived for intuited information was that of a basis for developing follow-up teaching strategies and potential remedial activities. In the case of positive intuited information, participants believed that the information allowed them to determine whether a student should be given more time to grow, or more experiences in which the likelihood of success would increase their confidence. When they intuitively felt a student was competent, it supported participants' efforts to provide highly challenging clinical experiences for that student.

In the case of negative intuited information, participants focused on the time intensity associated with the teaching strategies selected. This time intensity, however, except in situations where safety was at issue, did not necessarily translate into more direct supervision of students. It often involved unobtrusive observation of students' efforts to problem solve, and talking to students to determine thinking patterns and knowledge gaps. Negative intuition about a particular student commonly resulted in the necessity of 'sizing up' the remainder of the clinical group to determine who could manage less teacher time.

Those seen as able to manage with less instructor guidance, were often left on their own more, or placed under the guidance of a staff nurse.

Some participants indicated that when their intuition suggested a concern about a student, they spent time getting to know the patient situation well, in order to be prepared for potential difficulties. Still others focused on finding experiences for students they sensed as weak, that would increase their self-confidence, and thus, hopefully, their competence. Lastly, some participants included help and guidance from others (i.e. staff nurses, peers, and even patients) among their teaching strategies for such students.

Theme 4: Valuing Intuition

Participants were firm in the belief that their intuitions were a valuable part of their assessment of students' clinical performance, particularly because the accuracy of most of their intuitive experiences had been supported over time. Participants H and I qualified their steadfast belief in intuition, by noting they felt strongly that intuition should be validated by objective data. Except for Participant C, all others held their intuitive experiences to be of equal value to the objective data they collected. Participant C qualified her belief in the value of her intuition by stating that, in some circumstances, she

felt her intuition was more valuable than objective data.

Theme 5: Differentiating the Intuitive Experiences of Novice and Expert Clinical Nursing Teachers

Participants provided considerable data supporting that there were distinct differences in the clinical teaching of novice and expert clinical teachers. These differences were divided into four categories: *underlying influences*, *view of students*, *assessment of students*, and *teaching style*.

Related to *underlying influences*, novice clinical teachers, participants agreed, were more likely to have an allegiance pattern that placed the teacher, the patient, and the profession, ahead of the student. Participants admitted that as novices, they had limited clinical teaching experience, and as a result, had often lacked confidence in their clinical teaching skills, and were reluctant to take risks with students for fear of mistakes being made, either by themselves or the students.

In terms of their *view of students*, participants felt that as expert clinical teachers they were more likely to see students as individuals with unique needs and abilities. They also perceived that they had an underlying trust in students that they had not had as novices. Participants agreed that as expert clinical teachers they allowed for a broader range of 'normal' and expected

behaviors in students, and were less likely to overestimate students' capabilities. Participants also noted that they had become more relaxed, and were less hard on students, than they had been in their novice years.

Under *assessment of students*, participants remebered that as novices their repertoire of assessment skills was narrow. They also perceived that, as novices, they were more likely to collect superficial data about students, and more likely to accept that superficial data at face value. They viewed themselves as having had an inordinate amount of faith in objective data about students as novices, and found intuitive experiences in the early years, confusing and difficult. They were unable to assess students with any degree of speed as novices, and focused their assessment of knowledge on the regurgitation of factual information.

In relation to *teaching style*, participants agreed that as expert clinical teachers they were more flexible and allowed student need and patient circumstances to, for the most part, drive the planning of clinical practice periods with students. They supported the view that, in given circumstances, staff nurses, students' peers and even patients could act as clinical teachers. While as novices they had tended to hover over students and take over at the first sign of difficulty, as experts they were more likely to stand back and allow students to problem solve. As well,

as experts they were comfortable to push students towards independence within reason. Rather than reacting to circumstances as a basis for clinical teaching, as experts, participants viewed themselves as more and reflective about their teaching, its motivations and its meanings.

On the basis of participants' thoughts on the differences between their teaching as novices and experts, and evidence in the narratives that as novice teachers participants had had intuitive experiences about students, I isolated what I believe to be the pattern of differences between the intuitive experiences of novice and expert clinical teachers. This pattern purports that the intuitive experiences of novice clinical teachers are based on, in descending order of influence, clinical practice experience, life experience and clinical teaching experience. The intuitive experiences of experts, on the other hand, are based, in descending order of influence, on clinical teaching expertise, clinical teaching experience, clinical practice experience and life experience. Further, when determining what to do about their intuitive experiences, novices are influenced by their belief in the exclusive value of 'hard' data, their fear of censure by their peers, their focus on themselves, the patient and the profession ahead of the student, their view of students as a group rather than as individuals, and their inability to be flexible and take risks. When determining what they will do

with their intuitive experiences, experts, however, are influenced by their belief in the relatively equal value of multiple sources of data, their ability to be student and client focused, their view of students as individuals, the confidence that allows them to be flexible and take risks. As a result, novices often remain confused about their intuitive feelings, and use excessive and indiscriminate 'hard' data collection as a means of ignoring or dealing with them. This behavior does not allow them to share their intuitions with students in any meaningful way. Experts accept and reflect on their intuition, and then proceed to collect focused objective data as a means of validating their intuition. Experts will sometimes share their intuited thoughts with students in an effort to find an appropriate response strategy.

Theme 6: Profiling the Intuitive Processing of the Expert Clinical Nursing Teacher:

On the basis of the data-rich experiences participants shared about themselves and their intuitive experiences, a prototype of the intuitive processing of the expert clinical nursing teacher was designed. The prototype purports that the intuitive experiences of expert clinical nursing teachers are based on clinical teaching expertise, clinical teaching experiences, clinical practice experience and life experience, in descending order of importance, and

are triggered by a student behavior or action. These intuitive experiences are supported by the expert's belief in and valuing of intuition, and by their past experience of accuracy with intuition. As well, the intuitive experiences of the expert are influenced by the expert's support for multiple data sources, their individual student and client centered focus, and their flexibility, confidence and ability to take risks. The expert proceeds by accepting and reflecting on the intuition, determining its meaning, perhaps with the use of a conceptual framework, and collecting focused objective data in support of the intuition, if it is available. The expert may then share the intuition with the student, and finally, formulates a response appropriate to the nature of the intuited information.

Theme 7: Reflecting on Intuition

Participants' reflections on intuition were varied, and occasionally provocative. They included such concerns as the inefficiency caused by lack of acceptance of intuition as a legitimate means of assessing students, the folly of exposing novice students to only novice clinical teachers, and the difficulty of trying to help novice teachers see the value of intuition as an assessment skill. Some participants questioned whether intuitive ability was primarily an innate personality characteristic, and if so,

the significance of that to its use in expert clinical teaching. Others wondered if it was possible to teach intuition to novice clinical teachers and students. Some were comfortable that intuition came with expertise and experience, and patience was the answer to supporting its development. Finally, most participants reflected that the first step in helping intuition gain acceptance as a legitimate way of knowing was public acknowledgment of its unspoken use.

CHAPTER V

DISCUSSION OF FINDINGS

This chapter is divided into nine parts. It begins with comments on the appropriateness of the seven themes selected for the data analysis and interpretion of findings, followed by the examination of the study findings in relation to the literature. In the subsequent section, the integrity of the methodology, including the suitability of the conceptual framework, and the study's limitations are discussed. A brief conclusion, that outlines the significance and importance of the study, is followed by recommendations for nursing education, and thoughts on future nursing research. The chapter concludes with some personal reflections.

Appropriateness of the Seven Themes

The seven themes used to categorize the analysis and interpretation of the data were appropriate for three reasons.

First, the themes were a means of illustrating the processing of the intuitive experiences of the participants in an understandable manner. Participants experienced intuition, analyzed and interpreted its meaning, used the interpreted intuition to guide their clinical teaching, valued the knowledge they received through intuition, and reflected on their intuitive experiences over time.

Second, the themes allowed for the logical inclusion of sub-themes that would have seemed out of place in a linear listing of analysis headings.

Third, the themes allowed for movement from simpler to more complex analysis. The first four themes focused on relatively straightforward analysis and interpretation of data, supported with participants' anecdotes. Themes five and six required both analysis and synthesis of data to produce composites of intuitive processing.

Literature Connections

The literature associated with this study is vast (see Chapter II), and as such, needs to be connected to the

findings in a meaningful manner. Logical connections can be made by using the seven themes as guides for this section of the discussion as well. First, some comments from the literature regarding the significance of the participant demographics is warranted.

Participant Demographics

The participants were all middle-aged expert clinical nursing teachers. They had been practising nurses for a range of 17-29 years, the average being 21.4 years. Further, they had been clinical nursing teachers for a range of 8-18 years, the average being 14.7 years. Clearly the participants were a highly experienced group: in clinical teaching, in nursing, in living. The literature is clear that a significant component of expertise is experience in the area of expertise (Benner, 1984; Benner et al., 1996; Bereiter & Scardamalia, 1993; Cappon, 1989, 1993; Chi et al., 1988; Dreyfus & Dreyfus, 1986). The literature is also clear that experience is not a guarantee of expertise (Benner et al., 1996; Hanneman, 1996; Kolodner, 1984). Nonetheless, the participants in the study were highly experienced, and identified by their superiors as expert clinical nursing teachers. On the basis of these two factors, the literature supports that this was a highly suitable group of participants for this study.

Theme 1: Experiencing Intuition

Each study participant had numerous intuitive experiences of both a positive and negative nature in relation to students in clinical practice. The literature supports that by virtue of the participants' expertise and experience, incidents of intuitive experiences related to students in clinical practice should be plentiful (Benderly, 1989: Cappon, 1989, 1993). Except for Participant I, all participants more readily recalled intuitive experiences of a negative nature in relation to students, than those of a positive nature. Many of the intuitive experiences of bedside nurses described in the literature are also focused on potentially negative patient outcomes (DeMott, 1995; Gillan, 1992; Gruber, 1989; Hackleman, 1984; Murray, 1994; Renz, 1993). The literature is silent on this phenomenon. On reflection, one can suggest some reasons for this occurrence. Nursing practice still deals primarily with illness, an inherently negative state. Therefore, it stands to reason that the majority of intuitive experiences that an expert bedside nurse would have, in relation to promoting health and preventing further illness, might be negative. By carrying that thought further, expert clinical nursing teachers are in the business of teaching students the practice of nursing. An underlying influence inherent in that role is the safe care of patients. Thus, it is logical

that protection of patient safety could be involved in many of the intuitive experiences clinical teachers had about students. Further research related to this phenomenon would help clarify the extent of, and the underlying influences for, its existence.

With the exception of Participant I, all participants' described their intuition as having both a physical and emotional component. The literature confirms that this is a common feature of most intuitive experiences (Bastick, 1982; Brykczynski, 1989; Cappon, 1993; Chinen et al., 1985; Fisher, 1981; Gillan, 1992; Hackelman, 1984; Jennings, 1990; Milne, 1992; Rew, 1987, 1988b, 1989, 1990, 1991, 1992; Zerwekh, 1991). Perhaps an explanation for the difference in perception by Participant I can be found in the Myers-Briggs personality assessment patterns. According to the Myers-Briggs typology, individuals who are more innately intuitive, are less in tune with the sensate component of their personalities (Briggs & Myers, 1976). This self-identification by Participant I as intuitive by nature may be a moot point. Four nursing studies dealing with relationships between personality type and various nursing attributes and skills, found no distinctions on the basis of personality typology (Epley, 1994; Kerlin, 1992; Madrid, 1993; Sanford, 1985).

The lack of verbal precision and clarity in participants' descriptions of their intuitive experiences

can be explained by examining the key features of intuition. Intuition is repeatedly described in the literature as knowledge presented as a whole (Bastick, 1982; Benner et al., 1996; Davidhizar, 1991; Dreyfus & Dreyfus, 1986; Easen & Wilcockson, 1996; Fisher, 1981; Miller, 1989; Morse et al., Radwin, 1990; Rew, 1986, 1989). The holistic nature of its presentation makes intuition difficult for the intuiter to describe. Secondly, the literature clearly supports that intuition occurs at a non-conscious level (Agan, 1987; Bastick. 1982; Benner & Wrubel, 1982; Cappon, 1989, 1993; Chinen et al., 1985; Goldberg, 1983; Jacobs-Kramer & Chinn, 1988; Leners, 1990, 1993; Rew, 1986). Further, intuitive processing occurs in a non-linear, non-analytic fashion (Bastick, 1982, Benner & Tanner, 1987; Gerosa, 1993; McCormack, 1992; Moch, 1990; Morse et al., 1994; Rew, 1986; Schroeder, 1991; Westcott, 1968b). These two features suggest that as the processing of intuition is not done in a conscious, step-by-step manner, articulating it verbally would be arduous. Several authors explicitly refer to the non-verbal nature of intuition (Bastick, 1982; Cappon, 1989, 1993; Kenny, 1994; Renz, 1993; Stewart, 1988). Cappon (1993), Fisher (1981) and Noddings and Shore (1984) suggest that the non-verbal nature of intuition is related to the contention that it is an older primordial skill, essential to survival in the time before human language was evident. Kenny (1994) purports that the essence of intuition does not

lend itself to precise verbal description.

The student behaviors that triggered intuitive responses in most participants are analogous to the subtle cueing described by some authors. Because the nature of intuition is non-analytical, it is purported that it is often triggered by covert or imprecise cues (Bastick, 1982; Burden, 1957; Davidhizar, 1991; Leners, 1990, 1993; Schraeder & Fischer, 1986)

The nature of participants' positive intuitive experiences, as described in the data analysis, could not be grounded in the literature, as there appears to be nothing written about this phenomenon. Inferential support was be found in one study. Scanlan (1996) found that "intuition played an important role with experts in determining whether the student was capable of functioning on his/her own" (p. 169).

Theme 2: Analyzing and Interpreting Intuition

As participants' anecdotes provided several examples of each aspect of Dreyfus' ***Six Key Aspects of Intuitive Judgment***, it is evident that there is literature support for such categorization. Benner and Tanner (1987) provide further support for the Dreyfus model as a sound descriptor of intuitive experiences. Participants' narratives also suggested that of the six aspects, ***pattern recognition*** was the most common connection. The literature

provides support for that contention. Pattern matching is described as a common occurrence in intuition by several authors (Bastick, 1982; Goldberg, 1983; Leners, 1993; Rosenblatt & Thickstun, 1994; Simonton, 1980). As well, pattern matching is considered a cardinal component of expertise (Chi et al., 1988; Larkin et al., 1980; Collins & Loftus, 1975; Thompson et al., 1990; Glover et al., 1990).

Participant narratives suggest that there are two highly developed clinical teaching skills associated with the intuitive experiences of expert clinical teachers: subtle questioning techniques and unobtrusive data gathering. ***Skilled know-how***, in the Dreyfus model, refers to technical expertise. On the basis of participants' anecdotes, broadening the meaning of ***skilled know-how***, to encorporate non-technical skills, may have merit.

Theme 3: Using Intuition

Participants identified two main roles for intuited information associated with student clinical performance: focusing assessment and data gathering, and providing a basis for developing follow-up teaching strategies and potential remedial activities. The literature provides ample evidence that the underlying elements of these two roles are also found in other studies on intuition. Tanner (1989, 1993) support that intuition is an important component of the diagnostic reasoning

process in expert clinical nurses. Intuition is also seen as an element of critical thinking and decision-making in other nursing literature (Kingten-Andrews, 1991; Nixon, 1995; Radwin, 1990; Rew, 1988a, 1990; Watson, 1995).

Participants provided several compelling reasons for seeking objective data to validate their intuition. The literature clearly supports the importance of making intuition usable in the linear arena (Ashworth, 1990; Blomquist, 1985; Bobb et al., 1990; Bourne, 1993; Easen & Wilcockson, 1996; Forker & Billings, 1989; Kenny, 1994; Miller & Rew, 1989; Milne, 1992; Rew, 1987, 1988b; Rew et al., 1991). Farrington (1993) contends that one of the reasons intuition has difficulty being accepted in the linear world, is that studies rarely show evidence of errors with intuition. Participants H, F and I all noted intuitive concerns they had had about students that were proved incorrect on the basis of objective data. Participants' support for the additive and complementary value of objective data in relation to intuited information is also endorsed in the literature (Blomquist, 1985; Burnard, 1989; Cappon, 1989, 1993; Doheny, 1990; Forker & Billings, 1989; Gearhart & Young, 1990; Goldberg, 1983; Paul & Heaslip, 1995).

Assessing caring in nursing students:

All participants asserted that caring in nursing students could only be assessed by intuition. While they agreed that many behaviors indicative of caring could be delineated objectively, caring as an whole could not. Efforts to find an explanation for this belief, lead me into the extensive volume of literature on caring. Fortunately, several recent writings provided me with some insight into the thinking of the participants on this matter. Watson (1988) believes that caring is an holistic quality that cannot be broken down into tasks. Gaut (1983), on the other hand, believes that caring can be broken down into behavioral components. Morse, Bottoroff, Neander and Solberg (1991) provide a third view which suggests five ways in which caring can be conceived: as a human trait, as a moral imperative, as an affect, as an interpersonal interaction, and as a therapeutic intervention. Clarke and Wheeler (1992) and Forrest (1989) have done studies in clinical practice which attempt to delineate the behaviors and characteristics indicative of caring. Another view is provided by Phillips (1993) who contends that the problem with defining caring in nursing is that too much emphasis has been placed on 'emotional' caring. On the basis of these varied perspectives on intuition, one explanation for the perspective of the study participants is that they view

caring in students as an attribute, similar to the Morse et al. (1991) conception of caring as a human trait, or the Phillips' (1993) component, 'emotional' caring. A second explanation is that caring is holistic, and cannot be broken down into a complete set of components, as Watson believes. The fact that the participants believed that some elements of caring could be delineated objectively, suggests that the first explanation might be more valid.

Theme 4: Valuing Intuition

Participants were steadfast in their belief in the value of intuition in assessing the performance of nursing students in the clinical setting. Many authors, both in nursing and other fields, concur that intuition should be valued, particularly as a component of expert practice (Bobb et al., 1990; Cappon, 1989, 1993; Cooper, 1994; Goldberg, 1983; McCormack, 1993; McMurray, 1989; Miller & Rew, 1989; Rew, 1990). Participants' general contention that their intuitions about students are usually accurate is supported in the work of Cosier and Alpin (1982), Goldberg (1983), Sullivan (1992) and Young (1987).

Theme 5: Differentiating the Intuitive Experiences of Novice and Expert Clinical Nursing Teachers

Participants provided considerable evidence that there are distinct differences in the clinical teaching of

novice and expert clinical teachers. Support for the differences extracted from participants' narratives is pervasive in the literature. The classic work of Dreyfus and Dreyfus (1986) and Benner (1984) support most of the distinctions participants made in these two stages of professional development.

Participants described novice clinical teaching behavior as having several underlying influences including a situational allegiance that often placed the student below the teacher, patient and profession. They also maintained that as novices, they were reluctant to take risks, and feared both their own, and the student's, potential to make errors. Their lack of experience, and limited confidence in their teaching abilities, were significant influences on their clinical teaching. Benner (1984), Benner et al. (1996), and Dreyfus and Dreyfus (1986) explain that novices' lack of experience forces them to be rule-bound and relatively inflexible. They are unable to see context, and do not have the confidence or experiential knowledge that would encourage them to take risks, especially those in which there was potential for error. Research by Hooper (1994) and Kramer (1996) also provides evidence that novice behavior is usually focused on the self and the task at hand, and a broader look that includes context is not possible.

Participants noted that, as experts, they now

see students more individually, and accept a much wider range of student behaviors as workable. They generally trust students, have a much more flexible, relaxed style of dealing with students, and have a realistic perception of students' capabilities. The idea that, with increasing experience and expertise, experts are able to place many more scenarios in the range of expected 'normal' possibilities, and can make subtle distinctions that allow for individualization of particular circumstances, is supported in the literature. On the basis of experiential expectations, experts are also able to trust, and have realistic perceptions of what should occur (Benner, 1984; Benner et al., 1996; Dreyfus & Dreyfus, 1986; Kramer, 1996).

Participants described their novice assessment of students as supported by a narrow repertoire of skills. This lack of assessment experience prevented them from seeing more than surface data about students, and being able to examine data in depth. Their focus was on 'hard' data collection as novices, and intuitive thoughts were confusing and distressing. They were unable to assess quickly, and had difficulty determining students' knowledge base beyond the recounting of factual information. Chi et al. (1988) and Sternberg and Horvath (1995) maintain that experts manage situations more efficiently, thus the inability of novices to assess quickly makes sense. Further, Chi et al. (1988) suggest that experts see situations more deeply, and

can apply a variety of meanings to data. Crandall and Getchell-Reiter (1993) contend that experts have superior perceptual skills, while Benner (1984), Benner et al. (1996) and Dreyfus and Dreyfus (1986) emphasize that the deep grasp and finer perceptual skills of experts allow them to value intuition, and use it effectively.

As experts, participants saw themselves as having teaching styles driven by student need and patient situation. They were able to allow others to assume the teaching role with students when appropriate, and were able to give students space to grow. Their repertoire for handling difficulties was broader, and their teaching style had taken on a reflective, rather than a reactive, flavour. Kramer (1996) asserts that expert clinical teachers guide and connect with students, as opposed to supervising and doing for students. Kramer also notes that reflection on teaching is a cardinal characteristic of an expert clinical teacher. Sternberg and Horvath (1995) indicate that experts possess higher order processing that produces creative solutions to difficulties. Qualitative and critical reflection, usually via deliberative rationality, is seen as an important component of expertise by several authors (Benner et al., 1996; Benner & Tanner, 1987; Chi et al., 1988; Dreyfus & Dreyfus, 1986).

The study by Scanlan (1996) on expertise in clinical teaching requires separate consideration. The

findings of this study are highly consistent with those of the Scanlan study, on almost every aspect of novice and expert clinical teaching. Thus, the results of this study add credence to the findings of the Scanlan study, and vice versa. Scanlan (1996) also found that novices:

- are rigid, uncertain
- lack confidence in their teaching skills
- are uncomfortable with risk
- overestimate students' capabilities
- are more likely to be patient-focused and self-focused
- are often unable to see context
- feel that they are totally responsible for the supervision and teaching of the students
- oversupervise, and jump in to take over when students are having difficulty
- are unable to readily determine when to encourage and promote independence in students
- recognize fewer behaviors in students
- have difficulty assessing students' needs, and differentiating variation in student skill levels

As well, Scanlan found that expert clinical teachers, on the other hand:

- are flexible and willing to take calculated risks
- confident in their clinical teaching skills
- more realistic of students' capabilities
- primarily student-focused and patient-focused
- readily see and deal with context
- use staff to assist with supervision and evaluation of students
- stand back and allow students to problem-solve
- encourage independence
- recognize and deal effectively with a broad range of student behaviors
- look at students as individuals, with differing needs and skill levels

Minor differences between Scanlan's participants, and the participants in this study, were found in the area of 'use of reflection'. The participants in this study talked about reflection on their teaching as exclusive to

their expert practice. In the Scanlan study, novices noted using reflection, but in a reactive, rather than a contemplative, manner.

As with this study, the Scanlan study found that novice clinical teachers recognized that they had intuitive experiences with students, but were unable to process them in any meaningful way. The findings of this study, however, extended those of the Scanlan study by determining the distinctions between novice and expert intuitive experiences. The literature on intuition and expertise implies that intuition is a skill relatively exclusive to expertise (Benner et al., 1996; Connors, 1995; Crandall & Getchell-Reiter, 1993; Dreyfus & Dreyfus, 1986; Eberhart, 1992; Elster; 1987; Kramer, 1996).

How then, can an explanation be found for the participants of this study perceiving that they had intuitive experiences as novice teachers? A possible answer can be found in the general literature on intuition. Several authors readily support that intuition is a capability that all humans have to some degree (Cappon, 1989, 1993; Fisher, 1981; Goldberg, 1983; Noddings & Shore, 1984). Using this argument, participants could have had intuitive experiences with students simply based on life experience. As well, even though the participants were novice clinical teachers, their demographics show that they were not novice practising nurses. Therefore, some

participants could have had intuitive experiences involving students based on expertise in nursing practice.

Theme 6: Profiling the Intuitive Processing of the Expert Clinical Nursing Teacher

The prototype of the intuitive processing of the expert clinical nursing teacher described in this study can be favourably compared to the theoretical descriptions of intuitive processing and expertise found in the literature. The general stages of intuitive processing identified in the literature include a tuning-in or triggering phase, a non-conscious processing phase, an articulation and determination of meaning phase, and an acting-on phase (Bobb et al., 1990; Cappon, 1989, 1993; Chinen et al., 1985; Fisher, 1981; Hunt, 1982; Leners, 1990, 1993; Norris & Achilles, 1988; Rosenblatt & Thicksun, 1994). Expertise, on the other hand, is supported by considerable underlying experience and domain-specific knowledge, and uses high level, efficient, and rapid processing skills to produce accurate and creative solutions to problems (Benderly, 1989; Chi et al., 1988; Sternberg & Horvath, 1995). These two frames of reference from the literature provide suitable evidence of the validity of the prototype constructed in this study.

Theme 7: Reflections on Intuition

Many of the reflections participants had on intuition were echoed in the literature. Several authors note the importance of nurses valuing and trusting their intuitions (Cooper, 1994; Davidhizar, 1991; McCormack, 1993; McMurray, 1989; Miller, 1995; Murray, 1994; Ruth-Sahd, 1993). Encouraging openness related to the use of intuition, supporting other nurses in relation to its use, role modelling intuition, and enhancing intuitive ability are other recurring themes (Bourne, 1993; Correnti, 1992; Gearhart & Young, 1990; McMurray, 1989; Murray, 1994; Noddings & Shore, 1984; Rew, 1986, 1990, 1991; Rew et al., 1991). The literature supports that the reflections of the participants related to intuition were in keeping with those of many others.

For the most part, the literature is consistently supportive of the findings of this study. The three findings on which there was a dearth of literature suggest that they may be unique, and warrant further study. Those findings are:

1. Participants were more readily able to recall negative than positive intuitive experiences with students.

2. Participants felt that the determination of caring in students was assessed by intuition.

3. Participants purported that novice clinical teachers do have intuitive experiences with students in the clinical setting, but those intuitive experiences are qualitatively different than those of the expert.

Integrity of the Methodology

The qualitative, exploratory design of this study allowed for the collection of a vast breadth and depth of rich data on the previously unexamined area of the use of intuition by expert clinical nursing teachers in the assessment of the clinical performance of nursing students. The methodology further allowed for the selection of a small, purposive sample of participants with personal experience of the phenomenon. As well, it permitted the use of unstructured data collection techniques, and the return to participants for verification (Brink & Wood, 1989; Burns & Grove, 1993; Morse, 1991; Nieswiadomy, 1993; Polit & Hungler, 1997; Talbot, 1995; Wilson, 1993).

The pre-prepared, semi-structured interview questions were, for the most part, highly effective in guiding the interviews (McCracken, 1988). Even though the questions were designed and revised with the help of three well-known experts in the field of intuition in nursing, and examined by three of my peers in nursing education for clarity, there was one minor difficulty. The opening 'grand tour' question (Question #1) did not result in the telling

of general clinical stories by some participants, as was its purpose. Some participants responded to Question #1 by immediately telling a story about intuition, even though the question did not ask that. Others looked confused and asked for the question to be repeated or elaborated. Because participants knew the topic of the study in advance, my sense is that their thinking was focused on their intuitive experiences with students in preparation for the interview. The general nature of Question #1 caught some participants off-guard, hence their confusion, and need for re-stating or elaboration of what was wanted. Other participants simply 'heard' what they expected to hear in the first question, and began to focus on stories involving intuitive experiences with students immediately. In retrospect, piloting the questions with expert clinical nursing teachers who would not be participants in the study, might have highlighted the difficulty with Question # 1 in advance, and allowed for adjustments to be made. The problem with Question # 1 was minor, however, and in no way affected the quality of the overall data collected. It's difficulty was more one of efficiency, and getting the interviews off to a smooth start.

The use of nine participants, four more than the minimum, and only one less than the maximum determined as appropriate for the study, was a wise decision for three reasons. First, it allowed for a considerable amount of

rich data to be collected. Second it allowed for the determination of consistency and saturation in many aspects of the data. Third, it allowed for the inclusion of Participant I, who added somewhat atypical data that broadened the perspective of the data base. All of these reasons are seen as positive in the literature on qualitative research (Polit & Hungler, 1997; Talbot, 1995).

The decision to return to participants for verification of the data, and verification of the broad aspects of interpretation, **after** the first draft of the data analysis chapter was completed, was also a sound one. It allowed me to provide participants with the exact quotes I planned to use from their interviews, and thus focus on the accuracy, anonymity and confidentiality aspects of those particular quotes. In collaboration with three participants, adjustments were made to some quotes, to doubly ensure anonymity of both the teacher and student. Also, Participant F noted that, while a particular quote was accurate in content, her intended meaning in the quote was broader than the use that was being made of it in the draft analysis. We mutually agreed to remove the quote from use in that context. Participants were very helpful in validating the interpretation of findings, and were consistently supportive that my interpretations were sound and insightful.

The narrative quotations used to support interpretations within the data analysis chapter are plentiful, and rich with the views, insights and experiences of the participants. The rich data base, member-checking after the first draft of the analysis chapter was completed, my prolonged engagement within the field of study, and the use of nine participants to ensure adequate volume and saturation of data, supports the trustworthiness of the findings. Overall, the methodology of the study was sound, and as a result, I am comfortable the findings are credible.

Suitability of the Conceptual Framework

It was predicted that Dreyfus' ***Six Key Aspects of Intuitive Judgment*** would be a suitable conceptual framework for a portion of the data analysis. Its value as a conceptual framework for looking at how expert clinical nursing teachers analyze and interpret their intuitive experiences related to the clinical performance of nursing students is unquestionable. The data analysis validates that all aspects of the Dreyfus model are used by expert clinical nursing teachers in this context. The remainder of the study might have benefitted from a broader conceptual framework, had one been available. As the literature provided only five other potential conceptual frameworks (see Chapter II), all of which had weaknesses in relation to their suitability for use with this study, there was no

other suitable framework evident. On reflection, the themes extracted from the data analysis are perhaps a broad conceptual framework that grew naturally from the content analysis. They may provide a suitable framework for a future exploratory study on intuition.

Limitations of the Study

'Insider status' is often necessary in qualitative research related to professional practice in order for the researcher to understand the nuances of the information being examined (Meerabeau, 1992). However, care must be taken by the researcher to ensure that 'insider status' does not translate into interference with the objectivity of the data collection and data analysis process. The influence of my 'insider status' was controlled through regular member checks throughout the interviews, and during the data analysis stage, to ensure against my misinterpretation or over-interpretation of data.

As an instrument in the research process the interviewer has considerable opportunity to influence study responses (Polit& Hungler, 1997). Care was taken to ensure that, as an interviewer, I acted only as a facilitator for the stories, thoughts and answers of the participants. I refrained from expressing my own, or others opinions, on participants' views or experiences at any time during the interview process. However, one can never guarantee that

the influence of 'researcher as instrument' does not impact negatively on a qualitative study.

Study participants were all known to me professionally. Five were known quite well, two were known relatively well, and two were professional acquaintances. Participants being known to me had the potential to produce both a positive or negative impact on the study. In the negative, it is possible that participants were reticent to provide truthful data, or may have distorted data, in an effort to prevent their thoughts and behaviors being censured by me. Considering the quality and frankness of the data provided, a positive impact seems more apparent in this study. It is more likely that participants viewed me as an understanding peer, who was interested in their intuitive experiences.

The responsibility for the selection of study participants was given to administrators within nursing education programs where potential participants were employed. Although two of the criteria, currency and length of clinical teaching experience, were explicit, the criteria of 'expert' was left to the opinion of the participant selector. It is possible that the measure of expertise was different for each selector, and therefore, the consistency of this selection criterion cannot be guaranteed. In retrospect, however, the consistency of the data provided by participants suggests that there was some consistency of

meaning of the term 'expert' among the selectors of participants for the study.

Lincoln and Guba (1985) identify post-experience interviews as potentially producing rationalized accounts of actual events. That is certainly a risk with this type of study. However, I would qualify this by noting that the consistency of the data across participants is an indication that the experiences themselves, or the participants' rationalized accountings of them, were relatively accurate.

As participation was voluntary, it is possible that participants elected to enter the study because they had a pre-conceived bias in favour of one perspective or another in relation to intuition in the assessment of the clinical performance of nursing students. Although all participants had had experiences of intuition with students in this context, and valued intuition as an assessment tool, it is not possible to determine whether or not this was an operating factor in the study.

Conclusion

In relation to the general research questions that guided this study, the findings of the study indicate that intuition was used by the nine participants in the assessment of the clinical performance of nursing students. The findings further provide detailed information about the nature of the intuitive experiences of those nine

expert clinical nursing teachers. As well, the extent to which, and manner in which, those experiences were used by the participants in the assessment of the clinical performance of nursing students was examined.

The findings also support earlier research on the nature of novice and expert clinical teaching, and suggest that the experience of intuition as exclusive to the realm of expert practice, may not be an accurate perception. Further, there is evidence to suggest that the assessment of caring in nursing students is an intuitive experience.

The study has provided data and insight into a previously unexamined area of nursing education. The exploratory nature of the study opens the door to more in depth research on intuition in the context of nursing education. Further research that addresses the concept more specifically, or quantitatively, will add to this beginning examination into the use of intuition by expert clinical nursing teachers in the assessment of the clinical performance of nursing students.

Recommendations for Nursing Education

Four recommendations of consequence for nursing education are evident as a result of the findings of this study. Intuition appears to be used regularly, but covertly, by expert clinical nursing teachers. Study findings suggest that there would be value in the overt

acknowledgment of intuition as a complementary and additive assessment tool to objective data gathering by nursing educators. Open support, discussion and sharing of intuitive experiences by expert clinical nursing teachers would help promote the acceptance of intuition as a legitimate assessment tool. As well, participants' views on the assessment of caring in nursing students suggest that clinical nursing teachers need to reflect on the nature of caring, and the adequacy with which it is currently being assessed as an attribute in nursing students.

Finally, on the basis of the findings related to differences in novice and expert clinical teaching, two implications are evident. First, in the interests of adequate clinical education, novice nursing students should not be taught solely by novice clinical nursing teachers. Second, there is considerable value to be gained by the mentoring of novice clinical nursing teachers by experts.

Thoughts on Future Nursing Research

This qualitative, exploratory study on the use of intuition by expert clinical nursing teachers in the assessment of the clinical performance of nursing students has provided substantial quality data on which future research might be based. As a result of the findings of this study the following research themes would provide information valuable to the nursing profession generally,

and the field of nursing education in particular.

A repetitive study with a larger, more variant, group of expert clinical nursing teachers would strengthen or negate the validity of the findings of this study. Such research might benefit from adding clinical observations, and/or simulations to the investigative methodology. As well, a larger study might examine other variables discussed in the literature review such as gender, or might detail the extent of the intuitive experiences expert clinical teachers have in relation to student clinical performance. Further, a questionnaire, developed from the results of this study, might be piloted with a group of expert clinical nursing teachers.

An exploratory study that would examine the differences between novice and expert clinical nursing teachers experiences of intuition with nursing students would seem a natural follow-up based on the findings of this study, as would an exploration of the positive and negative nature of the intuitive experiences of nurses.

Finally, research that examines how clinical teachers assess caring in nursing students would also support or negate the findings of this study in relation to the assessment of caring in that context.

Personal Reflections

Conducting this study had its joyful and sorrowful moments. Thankfully, the joyful were more abundant. The study allowed me to examine an area of nursing education that has intrigued me for some time. The findings have given me food for thought, and the participants provided me with a refreshed respect for the complexities of clinical teaching. In the words of Participant D, ***"... nursing is not an exact science."*** We must always bear in mind that there are many ways of knowing. The following comment from Participant B sums up my thoughts on intuition:

> ***"I don't think intuition is based on nothing. I think it's based on a number of bits of knowledge that you gather, or experiences that you have, in your life. It's through professional expertise, and experience in teaching and nursing and life. It's stuff that you're probably unaware that you're even gathering.... and the better you get at it, the more it seems like you're doing nothing at all."***

References

Agan, R. (1987). Intuitive knowing as a dimension of nursing. Advances in Nursing Science, 10(1), 63-70.

Agor, W. (1984). Intuition: The new management tool. Nursing Success Today, 1(3), 23-24.

Agyakwa, K. (1988). Intuition, knowledge and education. Journal of Educational Thought, 22(3), 161-177.

Ajzen, I. (1977). Intuitive theories of events and effects of base rate information on prediction. Journal of Personality and Social Psychology, 35, 303-314.

Angevine, D. A. S. (1993). Reaffirming the art of nursing: Two parallel realities (Masters thesis, University of Guelph, 1993). Masters Abstracts International, 32(03), 934.

Archbold, P. (1986). Ethical issues in qualitative research. In W. C. Chenitz & J. M. Swanson, From practice to grounded theory (pp. 155-163). Menlo Park, CA: Addison Wesley.

Ashai News Services. (1992, September 16). Japanese researchers lead project to develop a computer with intuition. The Montreal Gazette, p. C4.

Ashworth, P. (1990). High technology and humanity for intensive care. Intensive Care Nursing, 6, 150-160.

Bagne, P. (1994, May). When to follow a hunch. Reader's Digest, 144(865), 46-50.

Bastick, T. (1982). Intuition: How we think and act. New York: John Wiley and Sons.

Belenky, M. F., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1986). Women's ways of knowing: The development of self, voice and mind. New York: Basic Books.

Benderly, B. (1989, September). Everyday Intuition. Psychology Today, 35-40.

Benner Associates. (1991). Exemplars: Narrative accounts that illustrate nursing practice. Berkeley, CA: Authors.

Benner, P. (1983). Uncovering the knowledge embedded in clinical practice. Image: The Journal of Nursing Scholarship, XV(2), 36-41.

Benner, P. (1984). From novice to expert: Excellence and power in clinical nursing practice. Menlo Park, CA: Addison-Wesley.

Benner, P. (1994). Interpretive Phenomenology. Thousand Oaks, CA: Sage Publications.

Benner, P. (1996). A response by P. Benner to K. Cash "Benner and expertise in nursing : A critique". International Journal of Nursing Studies, 32(6) 669-674.

Benner, P., & Tanner, C. (1987). Clinical judgement: How expert nurses use intuition. American Journal of Nursing, 87(1), 23-31.

Benner, P., Tanner, C., & Chesla, C. (1996). Expertise in nursing practise: Caring, clinical judgment and ethics. New York: Springer Publishing.

Benner, P., & Wrubel, J. (1982, May-June). Skilled clinical knowledge: The value of perceptual awareness. Nurse Educator, 11-17.

Bereiter, C., & Scardamalia, M. (1993). Surpassing ourselves: An inquiry into the nature and implications of expertise. Chicago: Open Court.

Berne, E. (1949). The nature of intuition. Psychiatric Quarterly, 23, 203-226.

Berne, E. (1962). Intuition VI; The psychodynamics of intuition. Psychiatric Quarterly, 36, 294-300.

Berragan, L. (1998). Nursing practice draws upon several different ways of knowing. Journal of Clinical Nursing, 7, 209-217.

Black, M. (1982). Brain flash: The physiology of inspiration. Science Digest, 90(8), 85-87, 104.

Blomquist, K. (1985). Evaluation of students intuition is important. Nurse Educator, 10(6), 8-11.

Bobb, J., Halm, M., Riggs, J., & Scordo, K. (1990). Critical care voices: Intuition in nursing practice. Dimensions of Critical Care Nursing, 9(1), 38.

Bosque, E. (1995). Pulse oximetry and intuition in the neonatal intensive care unit. New Technologies in Critical Care, 7(2), 219-225.

Bourne, S. (1993). Shopping for intuition: A trip to intuition 'R' us. Journal of Emergency Medical Services, 18(3), 165-166.

Bowles, G. (1984). The uses of hermeneutics for feminist scholarship. Womens' Studies International Forum, 7(3), 185-188.

Bradshaw, A. (1995). What are nurses doing to patients: A review of theories of nursing past and present. Journal of Clinical Nursing, 4, 81-92.

Briggs, K. C., & Myers, I. B. (1976) Myers-Briggs type indicator. Palo Alto, CA: Consulting Psychologists Press.

Brink, P. J. , & Wood, M. J. (Eds.). (1989). Advanced design in nursing research. Newbury Park, CA: Sage Publications.

Brykczynski, K. (1989). An interpretive study describing the clinical judgement of nurse practitioners. Scholarly Inquiry for Nursing Practice: An International Journal, 3(2), 75-104.

Budnik, P. P. (1995). Einstein's revenge [On-line]. Available: http://www.mtnmath.com/book/rev.html

Bunge, M. (1962). Intuition and science. Englewood Cliffs, NJ: Prentice Hall.

Burden, V. (1957). The process of intuition: A psychology of creativity and humane, democratic living. New York: Greenwich Book Publishers.

Burnard, P. (1989). The sixth sense. Nursing Times, 85(50), 52-53.

Burns, N., & Grove, S. K. (1993). The practice of nursing research: Conduct, critique and utilization (2nd ed.). Toronto: W. B. Saunders.

Cappon, D. (1989). Harnessing the hidden power of the mind. Toronto: Bedford House Publishing.

Cappon, D. (1993). The anatomy of intuition. Psychology Today, 26(3), 40-49.

Carlson, K. (1991). The back page: Aspects of truth. Journal of Post Anesthesia Nursing, 6(1), 81-82.

Carper, B. (1978). Fundamental patterns of knowing in nursing. Advances in Nursing Science, 1(1), 13-23.

Carroll, E. (1988). The role of tacit knowledge in problem-solving in the clinical setting. Nurse Education Today, 8, 140-147.

Cash, K. (1995). Benner and expertise in nursing: A critique. International Journal of Nursing Studies, 32(6), 527-534.

Chi, M. T. H., Glaser, R., & Farr, M. J. (1988). The nature of expertise. Hillsdale, NJ: Lawrence Erlbaum Associates.

Chinen, A., Spielvogel, A., & Farrell, D. (1985). The experience of intuition, Psychological Perspectives, 16(2), 186-197.

Chinn, P. L. (1989, February). Nursing patterns of knowing and feminist thought. Nursing and Health Care,10, 71-75.

Christie, L. A. (1996). Expertise in nurses' clinical judgements: The role of cognitive variables (Doctoral dissertation, University of British Columbia, 1996). Dissertation Abstracts International, 57(12), 7718B.

Cioffi, J., & Markham, R. (1997). Clinical decision-making by midwives: Managing case complexity. Journal of Advanced Nursing, 24, 265-272.

Clarke, J., & Wheeler, S. (1992). A view of the phenomenon of caring in nursing practice. Journal of Advanced Nursing, 17, 1283-1290.

Collie, H. A. M. (1989). Student nurses' experiences and perceptions of intuitive knowledge in nursing practice (Masters thesis, San Jose State University, 1989). Masters Abstracts International, 28(04), 572.

Collins, A. M., & Loftus, E. F. (1975). A spreading-activiation theory of semantic processing. Psychology Review, 82(6), 407-428.

Connors, V. L. (1995). Ways of knowing among clinical nurse experts in the care of elderly clients with dementia (Doctoral dissertation, University of Texas at Austin, 1995). Dissertation Abstracts International, 56(06), 3124B.

Cook, A. (1996). Reflective intuition: Defining A & E nursing. Professional Nursing, 11(4), 238-239.

Cooper, W. E. C. (1994). Meanings of intuition in nurses' work (Masters thesis, University of Victoria, 1994). Masters Abstracts International, 33(04), 1042.

Cornelius, S. W., & Caspi, A. (1987). Everyday problem solving in adulthood and old age. Psychology and Aging, 2, 144-153.

Correnti, D. (1992). Intuition and nursing practice implications for nurse educators: A review of the literature. Journal of Continuing Nursing Education, 23(2), 91-94.

Cosier, R., & Alpin, J. (1982). Intuition and decision-making: Some empirical evidence. Psychological Reports, 51, 275-281.

Crandall, B., & Getchell-Reiter, K. (1993). Critical decision method: A technique for eliciting concrete assessment indicators from the intuition of NICU nurses. Advances in Nursing Science, 16(1), 42-51.

Darbyshire, P. (1994). Skilled expert practice: Is it all in the mind. A response to English's critique of Benner's novice to expert model. Journal of Advanced Nursing, 19, 755-761.

Davidhizar, R. (1991). Intuition and the nurse manager. Health Care Supervisor, 10(2), 13-19.

Davis, T. (1991, April 9). Gut feeling: Intuition best way to make decisions, study finds. Winnipeg Free Press, p.23.

DeMott, N. (1995). A gut feeling. Nursing, 25 (2), 64.

Dineen, J. (1992, August 21). Do you know what this story is about. Toronto Star, p.14.

Dixon, M. (1989, November 18-20). Okay to use intuition when making business decisions. Financial Post, 83(47), p.22.

Dixon, N. F. (1981). Preconscious processing. New York: John Wiley and Sons.

Doheny, K. (1990, November 10). Gut feeling is being taken more seriously. Montreal Gazette, p. K8.

Downey, K. A. (1991). Intuition and seizure disorders as described by nurses (Masters thesis, D' Youville College, 1991). Masters Abstracts International, 30(02), 296.

Dreyfus, H., & Dreyfus, S. (1986). Mind over machine: The power of human intuition and expertise in the era of the computer. New York: The Free Press.

Easen, P., & Wilcockson, J. (1996). Intuition and rational decision-making in professional thinking: A false dichotomy. Journal of Advanced Nursing, 24, 667-673.

Eberhart, C. P. (1992). A portrait of clinical thinking in determinate practice situations: A study of expert nursing practice (Doctoral dissertation, Adelphi University, 1992). Dissertation Abstracts International, 53,(07), 3399B.

Elster, S. E. (1987). An analysis of nurses who demonstrate clinical excellence in nursing (Doctoral dissertation, University of Utah, 1987). Dissertation Abstracts International, 48(06), 1640B.

English, I. (1993). Intuition as a function of the expert nurse: A critique of Benner's novice to expert model. Journal of Advanced Nursing, 18, 387-393.

Ennamorato, J. (1986). Intuition success strategies. Toronto: New Canada Publications.

Epley, D. (1994). The effect of personality types on the assessment and management of pain (Doctoral dissertation, University of Miami, 1994). Dissertation Abstracts International, 55(07), 2996B.

Falkenstein, L. (1991). Kant's account of intuition. Canadian Journal of Philosophy, 21(2), 165-193.

Fallik, B., & Eliot, J. (1985). Intuition, cognitive style and atmospheric processing. Perceptual and Motor Skills, 60, 683-697.

Farrington, A. (1993). Intuition and expert clinical practice in nursing. British Journal of Nursing, 2(4), 228-229, 231-233.

Fisher, M. (1981). Intuition: How to use it for success and happiness. Toronto: Clarke, Irwin and Company.

Forker, J. E., & Billings, C. V. (1989). Nursing therapeutics in a group encounter. Archives of Psychiatric Nursing, III(2), 108-112.

Forrest, D. (1989). The experience of caring, Journal of Advanced Nursing, 14, 815-823.

Fuller, B. (1973). Intuition. New York: Anchor Books.

Gaut, D, (1983). Development of a theoretically adequate description of caring. Western Journal of Nursing Research, 5, 313-324.

Gearhart, S. C., & Young, S. W. (1990). Intuition, ethical decision making, and the nurse manager. Health Care Supervisor, 8(3), 45-52.

Gerosa, M. (1993). Traveling through the twilight zone of intuition. Cosmopolitan, 214(4), 192-195.

Gerrity, P. (1987). Perception in nursing: The value of intuition. Holistic Nursing Practice, 1(3), 63-71.

Gillan, J. (1992). Sixth sense: Nurses' intuitive judgements. Nursing Times, 88(19), 45.

Gillan, J. (1993). The hidden power. Nursing Times, 89(20), 56.

Gilligan, C. (1982). In a different voice: Psychological theory and women's development. Cambridge, MA: Harvard University Press.

Glover, J. A., Ronning, R. R., & Bruning, R. H. (1990). Cognitive psychology for teachers. New York: Macmillan.

Goldberg, P. (1983). The intuitive edge: Understanding and developing intuition. Los Angeles: Jeremy P. Tarcher.

Gruber, M. (1989). The power of certainty. American Journal of Nursing, 89(4), 502-503.

Guba, E. G., & Lincoln, Y. S. (1985). Effective evaluation: Improving the usefulness of evaluation results through responsive and naturalistic approaches. San Francisco: Jossey Bass.

Habib, M. (1988, July 29). Intuition secret to success. Calgary Herald, p.B7.

Hackleman, N. (1984). The unwritten rules that saved Katy. RN, 47(1), 52-53.

Hampton, D. C. (1994). Expertise: The true essence of nursing art. Advances in Nursing Science, 17(1), 15-24.

Hanneman, S.K. (1996). Advancing nursing practice with a unit-based clinical expert. Image: The Journal of Nursing Scholarship, 28(4), 331-337.

Harbison, J. (1991). Clinical decision-making in nursing. Journal of Advanced Nursing, 16, 404-407.

Harlowe, C. E. (1994). The relationship between intuition and human field motion of expert registered nurses in critical care settings in San Diego County (Masters thesis, California State University, Dominguez Hills, 1994). Masters Abstracts International, 33(06), 1838.

Hellner, B., & Norberg, A. (1994). Intuition: Two caregivers descriptions of how they provide severely demented patients with loving care. International Journal for Aging and Human Development, 38(4), 327-338.

Hempsall, K. A. (1996). Intuition and the decision making process of expert critical care nurses (Masters thesis, Grand Valley State University, 1996). Masters Abstracts International, 35(01), 208.

Himaya, J. A. (1991). Development of an intuition semantic instrument (Doctoral dissertation, Texas Woman's University, 1991). Dissertation Abstracts International, 52(08), 4122B.

Hooper, C. (1994). A behavioral analysis of clinical performance discriminating novice from expert nurses (Doctoral dissertation, University of San Francisco, 1994). Dissertation Abstracts International, 56(06), 2098A.

Hover-Kramer, D. (1990, April/May). Energy fields: Implications for the science of human caring. Imprint, 81-82.

Hoyer, W. J., & Rybash, J. M. (1994). Characterizing adult cognitive development. Journal of Adult Development, 1(1), 7-12.

Hughes, K. K. (1988). Decision-making in clinical nursing practice: Consistency with decision analytical outcomes (Doctoral dissertation, University of Illinois at Chicago, 1988). Dissertation Abstracts International, 49 (09), 3674B.

Hunt, M. (1982). The universe within: A new science explores the human mind. New York: Simon and Schuster.

Infante, M. S. (1975). The clinical laboratory in nursing education. New York: John Wiley and Sons.

Jacobs-Kramer, M. K., & Chinn, P. L. (1988). Perspectives on knowing: A model of nursing knowledge. Scholarly Inquiry for Nursing Practice: An International Journal, 2(2), 129-139.

Jaeger, R. M. (Ed.). (1988). Complementary methods for research in education. Washington, DC: American Educational Research Association.

Janney, M. A. (1993). The relationship between intuitive ability as well as active use of intuition, and the hierarchical level of nurse manager (Doctoral dissertation, University of Toledo, 1993). Dissertation Abstracts International, 55(02), 366B.

Jennings, A. H. (1990). The meaning of intuition in nursing practice (Masters thesis, Florida Atlantic University, 1990). Masters Abstracts International, 29(02), 264.

Josefowitz, N. (1984, November). In your heart you know you're right: Intuition as a job skill. Ms, 12, 16-17.

Jung, C. (1971). Psychological types. (H. G. Baynes, English Translation, & F. C. Hull, Revision of English Translation). Princeton, NJ: Princeton University Press. (Original work published 1921; English translation 1923; Revision of English translation 1971).

Kahneman, D., & Tversky, A. (1982). On the study of statistical intuitions. Cognition, 11, 123-141.

Kahneman, D., & Tversky, A. (1990). The simulation heuristic. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), Judgment under uncertainty: Heuristics and biases (2nd ed.) (pp.201-208). New York: Cambridge University Press.

Kassirer, J., Kuipers, B., & Gorry, G. (1982). Toward a theory of clinical expertise. American Journal of Medicine, 73, 251-259.

Kelly, K. J. (1995). The nature of intuition among nursing staff development experts: A Heideggerian hermeneutical analysis (Doctoral dissertation, George Mason University, 1995). Dissertation Abstracts International, 55(11), 4786B.

Kenny, C. (1994). Nursing intuition: Can it be researched. British Journal of Nursing, 3(22), 1191-1195.

Kerlin, M. P. (1992). Decision-making practices of sensing and intuitive nurse executives (Doctoral dissertation, University of Pittsburgh, 1992). Dissertation Abstracts International, 53(05), 2247B.

Kingten-Andrews, J. (1991). Critical thinking and nursing education: Perplexities and insights. Journal of Nursing Education, 30(4), 152-157.

Kolodner, J. L. (1984). Towards an understanding of the role of experience in the evolution from novice to expert. In M. J. Coombs (Ed.), Developments in expert systems (pp. 95-116). London: Academic Press.

Kramer, N. A. (1996). Expertise in clinical nursing educators: An exploratory study (Doctoral dissertation, University of Northern Iowa, 1996). Dissertation Abstracts International, 57(8), 3419A.

Lampert, M. (1984). Teaching about thinking and thinking about teaching. Journal of Curriculum Studies, 16(1), 1-18.

Larkin, J., McDermott, J., Simon, D. P., & Simon, H. A. (198). Expert and novice performance in solving physics problems. Science, 208, 1335-1342.

Lenberg, C. (1979). The clinical performance examination. New York: Appleton Century Crofts.

Leners, D. W. (1990). The deep connection: An echo of transpersonal caring (Doctoral Dissertation, University of Colorado Health Sciences Center, 1990). Dissertation Abstracts International, 51(06), 2818B.

Leners, D. W. (1993). Nursing intuition: The deep connection. In D. A. Gaut (Ed.), A global agenda for caring (pp. 223-240). New York: National League for Nursing Press.

Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry. Beverley Hills, CA: Sage Publications.

MacKay, B. (1989). Women's intuition: Fact of fiction. Images, 6(3), 81-83.

Madrid, M. (1993). Psychological type among nurses and patients' perception of received empathy (Doctoral dissertation, New York University, 1993). Dissertation Abstracts International, 54(08), 4081B.

Magistro, C. M. (1989). Clinical decision making in physical therapy. Physical Therapy, 69(7), 15-24.

Manion, J. (1990). Care from within: Nurse intrapreneurs as health care innovators. Kansas City, MO: American Nurses Association.

Martini, F. H. (1998). Fundamentals of anatomy and physiology (4th ed.). Upper Saddle River, NJ: Prentice Hall.

McCormack, B. (1992). Intuition: Concept analysis and application to curriculum development. I Concept analysis, Journal of Clinical Nursing, 1, 339-344.

McCormack, B. (1993). Intuition: Concept analysis and application to curriculum development. II Application to curriculum development. Journal of Clinical Nursing, 2, 11-17.

McCracken, G. (1988). The long interview. Qualitative Research Methods, Vol. 13. Newbury Park, CA: Sage Publications.

McGregor, R. J. (1991). Expert practice and career progression in selected clinical nurse specialists (Doctoral dissertation, Virginia Polytechnic Institute and State University, 1991). Dissertation Abstracts International, 52(12), 6319B.

McMurray, A. (1989). Time to extend the process. Australian Journal of Advanced Nursing, 6(4), 40-43.

Meerabeau, L. (1992). Tacit knowledge: An untapped resource or methodological headache. Journal of Advanced Nursing, 17, 108-112.

Miller, V. G. (1990). The development of an instrument to measure self-perception of intuitiveness of practicing nurses (Doctoral dissertation, University of Texas at Austin, 1990). Dissertation Abstracts International, 52(01), 162B.

Miller, V. G. (1993). Measurement of self-perception of intuitiveness. Western Journal of Nursing Research, 15(5), 595-606.

Miller, V. G. (1995). Characteristics of intuitive nurses, Western Journal of Nursing Research, 17(3), 305-316.

Miller, V. G., & Rew, L. (1989). Analysis and intuition: The need for both in nursing education. Journal of Nursing Education, 28(2), 84-86.

Miller-Field, S. L. D. (1992). The experience of intuition in nursing: A qualitative study (Masters thesis, University of Alberta, 1992). Masters Abstracts International, 31(03), 1003.

Milne, M. (1991). Intuitive managers play a hunch to the maximum. Northern Ontario Business, 12(1), 5.

Milne, M. (1992). Intuition: The essence of leadership. Northern Ontario Business, 13(1), 7.

Mitchell, G. J. (1994). Intuitive knowing: Exposing a myth in theory development. Nursing Science Quarterly, 7(1), 2-3.

Moch, S. D. (1990). Personal knowing: Evolving research and practice. Scholarly Inquiry for Nursing Practice: An International Journal, 4(2), 155-165.

Mohnkern, S. M. (1992). Presence in nursing: Its antecedents, defining attributes and consequences (Doctoral dissertation, University of Texas at Austin, 1992). Dissertation Abstracts International, 53(04), 1787B.

Morse, J. M. (1991). Qualitative nursing research: A contemporary dialogue (Rev. ed.). Newbury Park, CA: Sage Publications.

Morse, J. M., Bottoroff, J., Neander, W., & Solberg, S. (1991). Comparative Analysis of Conceptualizations and theories of caring. Image: The Journal of Nursing Scholarship, 23, 119-127.

Morse, J. M., Miles, M. W., Clark, D. A., & Doberneck, B. M. (1994). 'Sensing' patient needs: Exploring concepts of nursing insight and receptivity used in nursing assessment. Scholarly Inquiry for Nursing Practice: An International Journal, 8(3), 233-260.

Murray, C. K. (1994). Go back something's wrong. American Journal of Nursing, 94(7), 53.

Nadel, L. (1990). The whole brain book of intuition: Hunches, gut feelings and their place in your everyday life. Englewood Cliffs, NJ: Prentice Hall.

Nieswiadomy, R. M. Foundations of nursing research (2nd ed.). East Norwalk, CT: Appleton Lange

Nixon, A. J. (1995). Intuition and management decision making of the first-line nurse manager (Masters thesis, Duquesne University School of Nursing, 1995). Masters Abstracts International, 34(05), 1921.

Noddings, N., & Shore, P. J. (1984). Awakening the inner eye: Intuition in education. New York: Teacher's College Press, Columbia University.

Norris, C., & Achilles, C. (1988). Intuitive leadership: A new dimension for educational leadership. Planning and Change, 19(2), 108-117.

O'Connell, D. (1992). Intuition and the nursing process. Journal of Continuing Education in Nursing, 23(5), 196.

Orr, R., & Luszcz, M. (1994). Rethinking women's ways: Gender commonalities and intersections with postformal thought. Journal of Adult Development, 1, 225-234.

Paley, J. (1996). Intuition and expertise: Comments on the Benner debate. Journal of Advanced Nursing, 23, 665-671.

Papilia, D. E., & Olds, S. W. (1998). Human Development (7th ed.). Boston: McGraw Hill.

Parse, R. R. (1988). The mainstream of science: Framing the issue. Nursing Science Quarterly, 1(3), 93.

Pascoe, E. (1996). The value of nursing research of Gadamer's hermeneutic philosophy. Journal of Advanced Nursing, 24, 1309-1314.

Paul, R. W., & Heaslip, P. (1995). Critical thinking and intuitive nursing practice. Journal of Advanced Nursing, 22, 40-47.

Perlmutter, M., Kaplan, M., & Nyquist, L. (1990). Development of adaptive competence in adulthood. Human Development, 33, 185-197.

Peshkin, A. (1993). The goodness of qualitative research. Educational Researcher, 22(2), 24-30.

Phillips, P. (1993). A deconstruction of caring. Journal of Advanced Nursing, 18, 1554-1558.

Pichert, J., Elam, P. (1985). Dfferences between novices & experts. Diabetes Educator, 11, 9-12.

Polanyi, M. (1967). The tacit dimension. London: Routledge and Kegan Paul.

Polit, D. F., & Hungler, B. P. (1997). Essentials of nursing research (4th ed.). Philadelphia: Lippincott-Raven.

Polit, D. F., & Hungler, B. P. (1991). Nursing research: Principles and methods (4th ed.). Philadelphia: J. B. Lippincott.

Pyles, S. H., & Stern, P. N. (1983). Discovery of nursing gestalt in critical care nursing: The importance of the gray gorilla syndrome. Image: The Journal of Nursing Scholarship, 15(2), 51-57.

Radwin, L. (1990). Research in diagnostic reasoning in nursing. Nursing Diagnosis, 1(2), 70-77.

Reilly, D., & Oermann, M. (1992). Clinical teaching in nursing education. New York: National League for Nursing.

Renz, M. (1993). Learning from intuition. Nursing, 23(7), 44-45.

Rew, L. (1986). Intuition: A concept analysis of a group phenomenon. Advances in Nursing Science, 8(2), 21-28.

Rew, L. (1987). Nursing intuition: Too powerful and too valuable to ignore. Nursing, 17(7), 43-45.

Rew. L. (1988a). Intuition in decision-making. Image: The Journal of Nursing Scholarship, 20(3), 150-154.

Rew, L. (1988b). Nurse's intuition. Applied Nursing Research, 1(1), 27-31.

Rew, L. (1989). Intuition: Nursing knowledge and the spiritual dimension of persons. Holistic Nursing Practice, 3(3), 56-68.

Rew, L. (1990). Intuition in critical care nursing practice. Dimensions in Critical Care Nursing, 9(1), 30-37.

Rew. L. (1991). Intuition in psychiatric-mental health nursing. Journal of Child and Adolescent Psychiatric and Mental Health Nursing, 4(3), 110-115.

Rew, L., Agor, W., Emery, M. R., & Harper, S.C. (1991). Intuitive skills in crisis management. Nursing Connections, 4(2), 3-12.

Rew, L., & Barrow, E. M. (1987). Intuition: A neglected hallmark of nursing knowledge. Advances in Nursing Science, 10(1), 49-62.

Rew, L., & Barrow, E. M. (1989). Nursing intuition: Can it co-exist with the nursing process. AORN Journal, 50(20), 353-358.

Rhodes, J. M. R. (1990). A philosophical study of the art of nursing explored within a metatheoretical framework of philosophy of art and aesthetics (Doctoral dissertation, University of South Carolina, 1990). Dissertation Abstracts International, 51(12), 5810B.

Roberts, V. E. W. (1990). A description of intuitive decision-making by nursing academic administrators (Doctoral dissertation, University of Alabama at Birmingham, 1990). Dissertation Abstracts International, 51(vol. unknown), p. unknown.

Rose, P. , & Parker, D. (1994). Nursing: An integration of art and science within the experience of the practitioner. Journal of Advanced Nursing, 20, 1004-1010.

Rosenblatt, A. D., & Thickstun, J. J. (1994). Intuition and consciousness. Psychoanalytic Quarterly, 63(4), 696-714.

Ruth-Sahd, L. A. (1993). A modification of Benner's hierarchy of clinical practice: The development of intuition in the novice trauma nurse. Holistic Nursing Practice, 7(3), 8-14.

Sanford, M. B. (1985). A study of the relationship between intuition and perception (Doctoral dissertation, Texas Woman's University, 1985). Dissertation Abstracts International, 46(08), 2626B.

Scanlan, J. M. (1996). Clinical teaching: The development of expertise. Unpublished doctoral dissertation, University of Manitoba, Winnipeg, Manitoba.

Schaie, K. W. (1994). The course of adult psychological development. American Psychologist, 49(4), 304-313.

Schraeder, B. D., & Fischer, D. K. (1986). Using intuitive knowledge to make clinical decisions. MCN, 11(3), 161-162.

Schraeder, B. D., & Fischer, D. K. (1987). Using intuitive knowledge in the neonatal intensive care nursery. Holistic Nursing Practice, 1(3), 45-51.

Schroeder, G. (1991). Intuition in critical respiratory care: Beyond critical thinking. Respiratory Management, 21(1), 19-21.

Simonton, D. K. (1980). Intuition and analysis: A predictive and explanatory model. Genetic Psychology Monographs, 102, 3-60.

Sinnott, J. (1996). The developmental approach: Postformal thought as adaptive intelligence. In F. Blanchard-Fields & T. M. Hess (Eds.), Perspectives on cognitive change in adult hood and aging (pp.358-386). New York: McGraw-Hill.

Slater, V. E. (1992). Modern physics, synchronicity and intuition. Holistic Nursing Practice, 6(4), 20-25.

Slunt, E. T. (1989). Becoming competent: A phenomenological inquiry into its meaning (Doctoral dissertation, University of Maryland College Park, 1989). Dissertation Abstracts International, 36(04), p. unknown.

Snyder, M. (1993). Critical thinking: A foundation for consumer-focused care. Journal of Continuing Education in Nursing, 24(5), 206-210.

Sternberg, R. J. (1985). Beyond IQ: A triarchic theory of human intelligence. New York: Cambridge University Press.

Sternberg, R. J., & Horvath, J. A. (1995). A prototype view of expert teaching. Educational Researcher, 24(6), 9-17.

Stewart, W. (1988). Stimulating intuitive thinking through problem solving. Clearing House, 62(4), 175-176.

Strauss, S. (1996, August 17). Women's intuition source in doubt. Globe and Mail, p. A3.

Styles, M. M. (1975). Serendipidity and objectivity. Nursing Outlook, 23(5), 311-313.

Sullivan, D. (1992). Portrait of a prophet. Omni, 14(7), 40-46, 78-79, 82.

Talbot, L. A. (1995). Principles and Practice of Nursing Research. St. Louis, MO: Mosby-Year Book.

Tanner, C. (1983). Research on clinical judgment. In W. L. Holzemer (Ed.), Review of Research in Nursing Education (pp. 2-32). Thorofare, NJ: Slack Corporation.

Tanner, C. (1987). Teaching clinical judgment. In J. J. Fitzpatrick & R. L. Taunton (Eds.), Annual Review of Nursing Research (Vol. 5. pp. 153-173). New York: Springer Publishing.

Tanner, C. (1989). Use of research in clinical judgment. In C. A. Tanner & C. A. Lindeman (Eds.), Using nursing research (pp.19-34). New York: National League for Nursing Press.

Tanner, C. (1993). Rethinking clinical judgment. In N. L. Diekelmann & M. L. Rather (Eds.), Transforming RN education: Dialogue and debate (pp. 15-41). New York: National League for Nursing Press.

Tanner, C., Padrick, K., Westfall, U., & Putzer, D. (1987). Diagnostic reasoning strategies of nurses and nursing students. Nursing Research, 36(6), 358-363.

Taylor, C. M. (1990). Essentials of psychiatric nursing (13th ed.). St. Louis, MO: Mosby.

Taylor, S. (1993, April). The wisdom of the spirit. Essence, 57.

Thiele, J., Baldwin, J., Hyde, R., Sloan, B., & Strandquist, G. (1986). An investigation of decision theory: What are the effects of teaching cue recognition. Journal of Nursing Education, 25(8), 319-324.

Thompson, C. B., Ryan, S. A., & Kitzman, H. (1990). Expertise: The basis for expert system development. ANS, 13(2), 1-10.

Tieger, P. D., & Barron-Tieger, B. (1992). Do what you are: Discover the perfect career for you through the secrets of personality type. Toronto: Little Brown Canada.

Tversky, A., & Kahnemann, D. (1974). Judgment under uncertainty: Heuristics and Biases. Science, 185, 1124-1131.

Umiker, W. (1989a). Decision-making and problem-solving by the busy professional. Health Care Supervisor, 7(4), 33-40.

Umiker, W. (1989b, April). Intuitive decision-making and problem-solving. Medical laboratory Observer, 51-59.

Vaughan, F. (1979). Awakening Intuition. New York: Anchor Press.

Walton, J. E. (1986). The relationship between psychological type and ability to formulate nursing diagnoses (Doctoral dissertation, North Carolina State University at Raleigh, 1986). Dissertation Abstracts International, 47(04), 1493B.

Watson, C. A. (1995). Nurses' perceptions of their roles in clinical decision-making (Masters thesis, D'Youville College, 1995). Masters Abstracts International, 33(06), 1849.

Watson, J. (1988). Nursing: Human science and caring. New York: National League for Nursing.

Westcott, M. (1961). On the measurement of intuitive leaps. Psychological Reports, 9, 267-274.

Westcott, M. (1968a, June). Final report: Antecedents and consequences of intuitive thinking (Project. No. 1919, Contract No. OE 3-10-072). Washington, DC: Office of Education, Bureau of Research, U. S. Department of Health, Education, and Welfare.

Westcott, M. R. (1968b). Toward a contemporary psychology of intuition. New York: Holt, Rinehart and Winston.

Westcott, M., & Ranzoni, J. (1963). Correlates of intuitive thinking. Psychological Reports, 12, 595-613.

Westfall, U. E., Tanner, C., Putzier, D., & Padrick, K. (1986). Activated clinical inferences: A component of diagnostic reasoning. Research in Nursing and Health, 9, 269-277.

Wilder, R. L. (1967). The role of intuition. Science, 156, 605-610.

Williams, S. C. (1996). Expert and non-expert nurses' perspectives of life experiences related to becoming and being a nurse (Doctoral dissertation, University of South Carolina, 1996). Dissertation Abstracts International, 57(11), 6856B.

Wilson, H. S. (1993). Introducing research in nursing (2nd ed.). Menlo Park, CA: Addison Wesley.

Wondrak, R. (1992). Intuitive actions. Nursing Times, 88(33), 41.

Young, C. E. (1985). Intuition in nursing (Doctoral dissertation, Columbia University Teachers College, 1985). Dissertation Abstracts International, 47(03), 797A.

Young, C. E. (1987). Intuition and the nursing process. Holistic Nursing Practice, 1(3), 52-62.

Zerwekh. J. (1991). Tales from public health nursing: True detectives. American Journal of Nursing, 91(10), 30-36.

APPENDIX A

REFERENCES FOR QUOTES: PERSPECTIVES ON INTUITION

REFERENCES FOR QUOTES:
PERSPECTIVES ON INTUITION

Quotes by:

Cappon, Daniel
Jung, Carl Gustav

... taken from:

Cappon, D. (1989). Harnessing the hidden power of the mind. Toronto: Bedford House Publishing.

(Cappon taken from p. 5)
(Jung taken from p.15)

Quote by:

Pensees, Pascal

... taken from:

Dreyfus, H., & Dreyfus, S. (1986). Mind over machine: The power of the human intuition and expertise in the era of the computer. New York: The Free Press, p. 193.

Quotes by:

Ali, Mohammad
Bergman, Ingmar
Einstein, Albert
Kissinger, Henry

... taken from:

Ennamorato, J. (1986). Intuition success strategies. Toronto: New Canada Publications.

(Ali taken from p. 59)
(Bergman taken from p. 49)
(Einstein taken from p. 13, 138)
(Kissinger taken from p. 49)

Quote by:

Srebnik, Charles

... taken from:

Fisher, M. (1981). Intuition: How to use it for success and happiness. Toronto: Clarke, Irwin and Co., p.3.

Quote by:

Mozart, Wolfgang Amadeus

... taken from:

Goldberg, P. (1983). The intuitive edge: Understanding and developing intuition. Los Angeles: Jeremy P. Tarcher, Inc., p. 63.

Quote by:

Fuller, Buckminister

... taken from:

Milne, M. (1991). Intuitive managers play a hunch to the maximum. Northern Ontario Business, 12(1), p.5.

Quote by:

Salk, Jonas

... taken from:

Rew, L., Agor, W., Emery, M. R., & Harper, S. C. (1991). Intuitive skills in crisis management. Nursing Connections, 4(2), p. 9

APPENDIX B

LETTER OF REQUEST TO HEADS OF UNDERGRADUATE NURSING EDUCATION PROGRAMS

Dear _____,

I am a graduate student in the Master of Nursing Program at the University of Manitoba. I am conducting a qualitative research study entitled: ***The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students.*** In order to access the appropriate participants for this study, I need your assistance.

I have elected to gather data through exploratory interviews with a purposive, convenience sample of a minimum of five expert clinical nursing teachers. I will conduct one or more interviews with each participant. The interviews will be a maximum of one and a half hours in length. The results of my study will add to the profession's knowledge of the assessment of nursing student clinical performance. The questions which will guide the interviews have been approved by my thesis committee, and THREE well-known experts in the field: Dr. Patricia Benner, Dr. Virginia Miller, and Dr. Lynn Rew.

Enclosed is a copy of the proposal that was submitted to the Ethical Review Committee of the University of Manitoba Faculty of Nursing for your perusal.

I have two requests. First, I would like your permission to access the clinical nursing teachers in your Faculty of Nursing. If you grant this access, my second request is for your assistance in determining who among your clinical nursing teachers qualify as experts, according to the study criteria. For purposes of this study, an expert clinical nursing teacher is defined as one who:

1. has a minimum of five years experience as a clinical nursing teacher.

2. is identified as an expert clinical nursing teacher by his/her superiors.

The research of Benner and Tanner (1987), Benner, Tanner and Chelsea (1996), Kramer (1996) and Scanlan (1996) support the use of the above two criteria in determining and selecting experts.

3. is currently a clinical nursing teacher, or has not been absent from active clinical teaching as a component of his/her professional responsibilities for more than one year.

A random selection of clinical nursing teachers who are identified by you (or the person to whom you may designate this selection process), as experts in clinical teaching will be sent a letter. This letter will indicate to these individuals that they have been selected by you, or your designate, as potential participants for this study. The letter will also describe the study, and ask their willingness to participate. All ethical considerations including consent, anonymity, confidentiality, risk/benefit ratio, the right to withdraw from the study, the right to ask questions regarding the study, and the right to have access to study results, will be addressed in the letter.

Selected participants will be asked to sign a consent to participate form, and complete a demographic data form.

If you agree to allow me research access to your clinical nursing teachers, please contact me at your convenience by telephone or e-mail. The numbers are:

Office: 632-2297

Home: 269-5550

E-mail: kwall@rrcc.mb.ca

If you consent to such access, I will contact you to arrange a mutually agreeable time to discuss the identification of potential participants from among your clinical nursing teachers. Thank you for your consideration. I look forward to hearing from you.

Sincerely,

Karen L. Wall
Graduate Student
Master of Nursing Program
University of Manitoba

APPENDIX C

LETTER TO POTENTIAL STUDY PARTICIPANTS DESCRIBING THE STUDY

Dear (Potential Participant),

I am a graduate student in the Master of Nursing Program at the University of Manitoba. I am conducting a qualitative research study entitled: ***The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students.*** This is a topic which has been of interest to me for some time. There is a wide variety of literature on intuition, intuition in nursing, and intuition in expert nursing practice. However, there is little on intuition as an element of expert clinical teaching in nursing, and none on the use of intuition by expert clinical nursing teachers in the assessment of nursing student clinical performance. The study proposal has been approved by the Ethical Review Committee of the University of Manitoba Faculty of Nursing.

You have been identified by _____ as an expert clinical nursing teacher, according to the criteria of my study. Those criteria are:

1. has a minimum of five years experience as a clinical nursing teacher.
2. is identified as an expert clinical nursing teacher by his/her superiors.
3. is currently a clinical nursing teacher, or has not been absent from active clinical teaching as a component of his/her professional responsibilities for more than one year.

I have elected to gather data through exploratory interviews with a minimum of five expert clinical nursing teachers. You have been randomly selected as a potential participant from among the identified expert clinical nursing teachers on your faculty. Would you be willing to be a potential participant in my study?

If you do take part, you will be asked to participate in one interview of no more than one and a half hours in length. If, by mutual agreement, we wish to continue the interview, the session can be lengthened, or a second interview session scheduled. After the initial interview (or interviews), further contact will be necessary so that you can clarify and confirm collected data for accuracy, and have input into my interpretation of the data.

Each interview will be audiorecorded, and I may make occasional handwritten notes, as necessary, during each session. The questions which will guide the interviews have been approved by my thesis committee, the Ethics Review

Committee of the Faculty of Nursing, University of Manitoba, and three well-known experts in the field; Dr. Patricia Benner, Dr. Virginia Miller, and Dr. Lynn Rew. You may refuse to answer any study question, should you so wish. You will also be free to withdraw from the study at any point.

The confidentiality of any data you provide will be guaranteed. Your anonymity, and the anonimity of any student who may be inadvertently identified in the data gathering process, will be protected.

The only people who will have access to the raw data will be myself, members of my thesis committee, and the individual who assists with transcribing the taped interviews. Even so, all tapes and other data will be number coded, so that none of the people who have access to the data (other than myself, the researcher, and you, the participant), can identify any study participant.

Should you take part in the study, you will be asked to sign a consent to participate form, and complete a demographic data form. You will be given a copy of the consent to participate form for your own records.

I will contact you shortly to determine your willingness to participate in my study. Should you agree, we can set a date, time and place for the initial interview at that time. If you wish to contact me before I contact you, I can be located as follows:

Office: 632-2297
Home: 269-5550
E-mail: kwall@rrcc.mb.ca

I appreciate your consideration in this matter, and look forward to contacting you personally.

Sincerely,

Karen L. Wall
Graduate Student
Master of Nursing Program
University of Manitoba

APPENDIX D

CONSENT TO PARTICIPATE FORM

CONSENT TO PARTICIPATE FORM

This document certifies that I, _____, having met the criteria for a suitable participant, consent to participate in the study entitled: ***The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students***. The study proposal has been approved by the Ethical Review Committee of the University of Manitoba Faculty of Nursing, and the External Research Committee of Red River Community College. In consenting to participate in this study, I understand and agree to the following:

1. The study will be conducted by researcher, Karen Wall, as part of the requirements for the Master of Nursing Program. The members of Ms. Wall's thesis committee are: Dr. Patricia Farrell, Chair; Dr. Ina Bramadat, Internal Committee member; and Dr. Lynn Taylor, Centre for Higher Education, Research
and Development, External Member.

2. The purpose and process of the study have been clearly and sufficiently explained to me.

3. I understand that I will participate in one interview of no more than one and a half hours in length. I understand that if, by mutual agreement, the researcher and I wish to continue the interview, the session can be lengthened, or a second interview session scheduled.

4. I understand that after the initial interview(s), further contact will be necessary, so that I can clarify and confirm collected data for accuracy, and have input into the interpretation of the data.

5. I understand that each interview will be audiorecorded, and that the researcher will make occasional handwritten notes, as necessary, during each session.

6. I understand that the questions which will guide the interviews have been approved by the researcher's thesis committee, and three well-known experts in the field: Dr. Patricia Benner, Dr. Virginia Miller, and Dr. Lynn Rew.

7. I understand that I may refuse to answer any study question, should I so wish.

8. I understand that I will be free to withdraw from the study at any point.

9. I understand that my anonymity, and the anonymity of any student who may inadvertently be identified in the data gathering process, will be protected.

10. I understand that the confidentiality of any data I provide will be guaranteed.

11. I understand that the only people who will have access to the raw data will be the researcher, the members of the researcher's thesis committee, and the individual who assists with transcribing the taped interviews.

12. I understand that all tapes and other data will be coded, so that none of the people, outside of the researcher and myself, who have access to the data, can identify me as a study participant.

13. I understand that if any student is inadvertently indentified on the audiorecording, such identification will be erased or disguised by the researcher prior to allowing access to the tape by either her thesis committee members, or the individual transcribing the tapes.

14. I understand that neither I, nor any student, will be in any way identifiable in the report of the study, and that the researcher will use any legitimate technique necessary to ensure this.

15. I understand that the researcher will keep all materials related to the study in a locked file cabinet in her home, when she is not physically with such material. This file cabinet will not be accessible to anyone but the researcher. The material will be kept in this locked file cabinet until the time for its destruction, as indicated in # 16 which follows.

16. I understand that, after seven years, all materials and raw data associated with this study will be destroyed by the researcher, as is consistent with ethical standards.

17. I understand that the researcher will use the data acquired through this study only in the context of her role as a professional nurse.

18. I understand that the results of the study may be published.

19. I understand that no names or specific locations of participants or students will ever be included in any written reports or publications emanating from this study.

20. I understand that I am entitled to a copy of a summary of the study results, should I wish one.

21. I understand that I will be provided with a copy of this consent form.

22. I understand that I can contact the researcher, Karen Wall, at any time during the course of this study should I have questions or concerns related to the study and my participation in it. Her contact numbers are:

Office: 632-2297

Home: 269-5550

E-mail: kwall@rrcc.mb.ca

My signature on the following page indicates my willingness to participate in this study.

_____
Participant

_____
Researcher

_____
Date

I would like to receive a summary of the results of the study.

YES _____

NO _____

If YES, please mail the results to:

Name: _____

Address: _____

_____

_____

APPENDIX E

DEMOGRAPHIC DATA FORM

DEMOGRAPHIC DATA FORM

Gender:

Female _____

Male _____

Age:

25 to 29 years _____

30 to 39 years _____

40 to 49 years _____

50 to 59 years _____

60 + years _____

How many years have you been a practising nurse?

_____ years

How many years have you been a clinical nursing instructor?

_____ years

What is the highest level of education you have achieved?

Baccalaureate in Nursing _____

Baccalaureate in Another Discipline/Faculty _____

Master of Nursing Student _____

Master's Student in Another Discipline/Faculty _____

Master of Nursing Completed _____

Master's Completed in Another Discipline/Faculty _____

Doctoral Student _____

Doctorate Completed _____

APPENDIX F

CORRESPONDENCE WITH DR. PATRICIA BENNER

To: nursing%patricia_benner@ccmail.ucsf.edu
Subject: Study on Intuition and Expertise

Dear Dr. Benner,

I am a graduate student in the Master of Nursing Program at the University of Manitoba in Winnipeg, Manitoba, Canada. I am currently working on my thesis proposal.

My research question is:

" Do expert clinical nursing instructors use intuition in assessing the clinical performance of nursing students? "

The conceptual framework for my study is based on Dreyfus's (and your) six key aspects of intuitive judgment.

As you can imagine I have read close to three hundred pieces of literature on intuition, and intuition and expertise. Several nurse researchers on this topic have become my 'literature mentors' including yourself, Christine Tanner, Lynne Rew and Virginia Miller.

The article by you and Christine Tanner in the January, 1987 issue of the American Journal of Nursing entitled: "Clinical Judgment: How Expert Nurses Use Intuition" has become a sort of 'literature security blanket' for me.

My reason for writing is that I am at the methodology stage of my proposal, and am looking for advice on question design for my semi-structured interviews with expert clinical nursing instructors. The 1987 article referred to above, discusses a pilot study conducted by you and Dr. Tannner which attempted to identify the nature and role of intuition in expert clinical judgment.

While the article offers much useful information about how my own study might be conducted, it does not include the questions used in the interview process. I think that the questions used by you and Dr, Tanner in this study might give me some ideas on how to structure my own interview-guiding questions. My questions, of course, will be focused on clinical teaching and student performance, rather than clinical practice and patient response. However, there could be some similarities in design, wording, content emphasis, etc. I understand that your questions might be part of a copyrighted work, and I would not attempt to use them in whole or part without your permission. If you are willing to share the interview questions from this study, or any other interview questions you think would be helpful to me in designing my own interview tool, I would be most grateful. I am quite prepared to share any of my work, including my completed thesis, with you.

My e-mail address is:

kwall@rrcc.mb.ca

My business postal address is:

Karen Wall
Curriculum Coordinator
Red River Community College/University of Manitoba
Joint Baccalaureate Nursing Program
Red River Community College
Office C607
2055 Notre Dame Avenue
Winnipeg, Manitoba, Canada
R3H 0J9

Phone: (204) 632-2297
Fax: (204) 632-9661

My home mailing address is:

Karen Wall
247 Augusta Drive
Winnipeg, Manitoba, Canada
R3T 4H3

Phone: (204) 269-5550

Thank you in advance for any advice you might have for me in relation to interview question design. I look forward to hearing from you, preferably by e-mail in the initial stages of our contact, if possible.

Sincerely,

Karen Wall

E-mail sent August 24, 1997

Return-Path: <Patricia_Benner_at_S/N-PHYSIO@CCMAIL.UCSF.EDU>
From: Patricia_Benner_at_S/N-PHYSIO@CCMAIL.UCSF.EDU
Date: Wed, 17 Sep 97 12:43:49 PST
To: kwall@rrcc.mb.ca
Subject: Re: Study on Intuition and Expertise

Your study sounds most interesting. I think the descriptions of use of narrative methodology in Interpretive Phenomenology, Benner, P., Sage, 1994 and the Appendix section in Expertise in Nursing Practice would be most helpful to you. I would be pleased to talk with you by phone after the quarter here gets underway, after October 15th. Best wishes as you begin your studies.
Patricia

To: nursing@patricia_benner@ccmail.ucsf.edu
Subject: Masters Thesis: The Use of Intuition by Expert Clinical Nursing Instructors in the Assessment and Evalution of the Clinical Performance of Nursing Students

February 8, 1998

Dear Dr. Benner,

I contacted you by e-mail last August for some general advice on question design for my semi-structured interviews with expert nursing instructors. You indicated that the descriptions of use of narrative methodology in Interpretive Phenomenonology, and the Appendix Section of Expertise in Nursing Practice would probably be helpful to me. In fact, both of these resources did give me a better feel for what type of question design will likely elicit the best answers, and how best to conduct myself as an interviewer. As a result, I have designed seven questions to help guide my semi-structured interviews with the subjects of my study: expert clinical nursing instructors. I would appreciate your opinion of these questions. Any problems or pitfalls you see would be most helpful to know. The seven questions are:

1. Tell me about your experiences with assessing and evaluating the clinical performance of nursing students.

2. Do you consider yourself intuitive in assessing and evaluating situations involving students, and student performance, in the clinical setting? (If YES) Can you describe why you think you are intuitive? (If NO) How would you describe yourself as an assessor and evaluator of student clinical performance?

3. Have you ever had an intuitive (gut) feeling about a student, or a clinical situation involving a student, for which you could not readily articulate the reason? (If YES) Describe this situation for me. Tell me in your own words about the thoughts/feelings associated with this intuitive (gut) feeling.

4. When you are uncertain about a student's clinical performance, but you have an intuitive (gut) feeling about it, do you act on those feelings? (If YES) What do you do? (If NO) Why not?

5. Does your intuitive (gut) feeling about a student's clinical performance influence your clinical supervision of the student...the way in which you evaluate the student...? (If YES) Describe how.

6. Do you feel your intuitive (gut) feelings about a student's clinical performance are at least as important as objective data you may gather about that performance? (If YES) Why? (If NO) Why not?

7. In your opinion and experience, are the intuitive (gut) feelings you have about students and their clinical performance, usually correct? On what do you base your (YES or NO) answer?

I know you are very busy, Dr. Benner, but even a quick look at these questions for me would be greatly appreciated. I look forward to hearing from you, and will keep you apprised of my project as I go.

Sincerely,

Karen L. Wall
Graduate Student
Master of Nursing Program
University of Manitoba
Winnipeg, Manitoba, Canada

E-mail: kwall@rrcc.mb.ca

Return-Path: <Patricia_Benner_at_S/N-PHYSIO@CCMAIL.UCSF.EDU>
From: Patricia_Benner_at_S/N-PHYSIO@CCMAIL.UCSF.EDU
Date: Mon, 09 Feb 98 13:05:17 PST
To: kwall@rrcc.mb.ca
Subject: Re: Masters Thesis: The Use of Intuition by Expert Clinical Nurs

Your questions look like they will work. On your questions about whether or not they have had an intuitive sense of the student's I would ask for a narrative account of a situation where they had a sense of the student's performance issues/capacities and how they followed up on this. One of the problems I see with your approach is that such global senses can become snap judgments and negative stereotyping. how will you sort out accurate intuitions and mistaken reading in of the student's capacities/issues? Good luck with your work. You might want to contact Nancy Diekelmann in University of Wisconsin, Madison who has done extensive research on teachers. Patricia Benner

To: nursing%patricia_benner@ccmail.ucsf.edu
Subject: Masters Thesis: The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students

February 12, 1998

Dear Dr. Benner,

Thank you for taking the time to look at my interview questions. I have thought about your comments, and made some changes based on them. I also took your advice and attempted to contact Dr. Nancy Diekelmann at the University of Wisconsin, Madison. She has not returned my e-mail yet, but I'm sure she will when she has a moment. Thank you again, and I will keep you posted on how this study goes!

Karen Wall
Graduate Student
Master of Nursing Program
University of Manitoba
Winnipeg, Manitoba, Canada

E-mail: kwall@rrcc.mb.ca

APPENDIX G

CORRESPONDENCE WITH DR. VIRGINIA MILLER

Return-Path: <sonvgm@ttuhsc.edu>
Date: Wed, 20 Aug 1997 12:13:49 -0500
To: kwall@rrcc.mb.ca
From: Jini Miller <sonvgm@ttuhsc.edu>
Subject: Re: Your PH D Dissertation

Dear Karen,

It is nice to hear from you -- thanks for contacting me.

Certainly, you may have a copy of the Miller Intuitiveness Instrument (MII) to review, and yes, it is copyrighted. My only request is that if you do decide that you want to use it, you will write to me and provide a brief description of your study and of how you expect to use the instrument.

Once I receive that, I would send a form for you to sign and return (we could probably do all of that by FAX). The form would give you permission to use the instrument in your study with two stipulations: One, that you retain the copyright information (instrument name, author name, and copyright date) on each instrument, and two, that you share with me the results of your study. Obviously, the latter issue is particularly important to me as ANY instrument is "in process" all the time! In other words, I am always interested in how the instrument performs, and in revising it, should that become necessary.

You CAN get my dissertation from University Microfilms, Inc., but I wouldn't recommend you doing that. It is a very large document and would cost you plenty. (Still, if you want to do that, let me know and I'll give you the information you will need. You would have to have a permission letter from me in order to get a copy of it. The reason for that is that I want to communicate with people who want to use the instrument BEFORE they get my dissertation because I want to warn them that the instrument that is in the dissertation is NOT the same one that is currently available. Also, I want to know about others' research on the topic!)

What I would do if I were you in place of getting the dissertation is read my 1993 article in the Western Journal of Nursing Research (Volume 15, Issue 5, pp. 595-606), unless you already have, which is essentially a synopsis of my dissertation. All the psychometrics that you would need in order to evaluate the usefulness of the MII are included in that publication.

Please send me a letter of request along with a stamped, self-addressed envelope, and I will send you a Miller Intuitiveness Instrument for you to review. My mailing address is:

Virginia G. Miller, RN, PhD, CS, FNP
Associate Professor
School of Nursing
Texas Tech University Health Sciences Center
Lubbock, TX 79430
USA

Again, thanks for contacting me. I look forward to hearing from you again.

At 06:10 PM 8/19/97 -0600, you wrote:
>Dear Dr. Miller,
>
> I am a graduate student in the Master of Nursing Program at the
>University of Manitoba in Winnipeg, Manitoba, Canada. I am currently preparing
>my thesis proposal, and my research involves looking at the use of intuition by
>expert clinical nursing instructors in their assessment of nursing student
>performance in the clinical setting. I have reviewed, as you can imagine, close
>to 300 pieces of literature (including many theses and dissertations) in the
>area of intuition, and intuition and expertise.
>
> I examined your dissertation abstract from the University of Texas at
>Austin, and attempted to get a copy of the full dissertation to read via
>interlibrary loan. As you may know, such was not possible.

>
>What I am most interested in seeing is the actual Self-Perception of
>Intuitiveness Instrument itself, to determine if it has any direct
applicability
>or relevance to the work I am doing. I am aware that you most likely have
>copyright on the instrument, and that it was designed, in fact, for use with
>practicing nurses. I would not attempt to use it in any way without your
>express permission, and payment of any royalties or other fees necessary.
>
>Are you in a position to grant me permission to just examine the
>instrument at this time? I would be most appreciative of your contacting
me by
>e-mail and advising me if my request is an acceptable one, and, if so, how I
>would go about getting a copy of the instrument for examination purposes only?
>
>My name is Karen Wall and my e-mail address is:
>
>kwall@rrcc.mb.ca
>
>Thank you in advance for taking the time to look into this for me, and I would
>be more than pleased to share the results of my research with you when it is
>completed.
>
>
>Sincerely,
>
>
>Karen Wall
>Curriculum Coordinator
>Red River Community College/University of Manitoba
>Joint Baccalaureate Nursing Program,
>2055 Notre Dame Ave.
>Winnipeg, Manitoba, Canada
>R3H 0J9
>Phone: (204) 632-2297
>

Return-Path: <sonvgm@ttuhsc.edu>
Date: Tue, 9 Sep 1997 10:42:31 -0500
To: kwall@rrcc.mb.ca
From: Jini Miller <sonvgm@ttuhsc.edu>
Subject: Re: Your PH D Dissertation

Dear Karen,

I replied to your e-mail message below on 8/20. Did you get it? I haven't heard from you, so wondered if something may have interrupted the transmission out there in cyberspace.

Dr. Miller

At 06:10 PM 8/19/97 -0600, you wrote:
>Dear Dr. Miller,
>
> I am a graduate student in the Master of Nursing Program at the
>University of Manitoba in Winnipeg, Manitoba, Canada. I am currently preparing
>my thesis proposal, and my research involves looking at the use of intuition by
>expert clinical nursing instructors in their assessment of nursing student
>performance in the clinical setting. I have reviewed, as you can imagine, close
>to 300 pieces of literature (including many theses and dissertations) in the
>area of intuition, and intuition and expertise.
>
> I examined your dissertation abstract from the University of Texas at
>Austin, and attempted to get a copy of the full dissertation to read via
>interlibrary loan. As you may know, such was not possible.
>
> What I am most interested in seeing is the actual Self-Perception of
>Intuitiveness Instrument itself, to determine if it has any direct applicability
>or relevance to the work I am doing. I am aware that you most likely have
>copyright on the instrument, and that it was designed, in fact, for use with
>practicing nurses. I would not attempt to use it in any way without your
>express permission, and payment of any royalties or other fees necessary.
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> Are you in a position to grant me permission to just examine the
>instrument at this time? I would be most appreciative of your contacting me by
>e-mail and advising me if my request is an acceptable one, and, if so, how I
>would go about getting a copy of the instrument for examination purposes only?
>
>My name is Karen Wall and my e-mail address is:
>
>kwall@rrcc.mb.ca
>
>Thank you in advance for taking the time to look into this for me, and I would
>be more than pleased to share the results of my research with you when it is
>completed.
>
>
>Sincerely,
>
>
>Karen Wall
>Curriculum Coordinator
>Red River Community College/University of Manitoba
>Joint Baccalaureate Nursing Program,
>2055 Notre Dame Ave.
>Winnipeg, Manitoba, Canada
>R3H 0J9
>Phone: (204) 632-2297
>

To: sonvgm@ttuhsc.edu
Subject: Master's Thesis - Karen Wall

September 9, 1997

Dear Dr. Miller,

Yes I most certainly did receive your quick response to my original e-mail request. I have just yesterday, as a matter of fact, mailed you a letter of request for a copy of the Miller Intuitive Instrument (MII) to examine. I included a self-addressed envelope and a U.S.$5.00 bill, as I have no way of acquiring U.S. return postage from Canada. I hope $5.00 U.S. will be enough for you to acquire sufficient postage to mail the document to me.

I have been slow contacting you further as it is the beginning of the school year here. As I am the Program Coordinator, I have been swamped with the usual beginning of the year activities. It has just begun to quiet down these past two days. This business of trying to do a thesis and work full-time is for the birds. I think my family plan to declare a national holiday when I'm done!

I will certainly keep in contact with you as I go along with my thesis. I am currently at the proposal stage.

I do have a copy of the article from the 1993 Western Journal of Nursing Research which you referred to in your original e-mail. I have read it, along with a couple of other articles you have written, both alone and with Dr. Lynn Rew.

I will let you know via e-mail as soon as I receive the copy of the MII which I have requested. Thank you for your interest in my work.

Sincerely,

Karen Wall

Return-Path: <sonvgm@ttuhsc.edu>
Date: Tue, 9 Sep 1997 14:06:13 -0500
To: kwall@rrcc.mb.ca
From: Jini Miller <sonvgm@ttuhsc.edu>
Subject: Re: Master's Thesis - Karen Wall

Great minds think alike!!

I'll look for your letter.

I can fully appreciate first-of-the-semester craziness. We started classes a couple of weeks ago, and I had been away for a month. Put THOSE two things together at the same time and see what kind of a mess you have!! I had 120 e-mail messages when I got back!

Good luck.

At 02:19 PM 9/9/97 -0600, you wrote:
>September 9, 1997
>
>
>Dear Dr. Miller,
>
>
>Yes I most certainly did receive your quick response to my original
>e-mail request. I have just yesterday, as a matter of fact, mailed you a
letter
>of request for a copy of the Miller Intuitive Instrument (MII)
>to examine. I included a self-addressed envelope and a U.S.$5.00 bill, as I
>have no way of acquiring U.S. return postage from Canada. I hope $5.00 U.S.
>will be enough for you to acquire sufficient postage to mail the document
to me.
>
>
>I have been slow contacting you further as it is the beginning of the
>school year here. As I am the Program Coordinator, I have been swamped
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>usual beginning of the year activities. It has just begun to quiet down these
>past two days. This business of trying to do a thesis and work full-time
is for
>the birds. I think my family plan to declare a national holiday when I'm done!
>
>I will certainly keep in contact with you as I go along with my thesis.
> I am currently at the proposal stage.
>
>I do have a copy of the article from the 1993 Western Journal of Nursing
>Research which you referred to in your original e-mail. I have read it, along
>with a couple of other articles you have written, both alone and with Dr. Lynn
>Rew.
>
>I will let you know via e-mail as soon as I receive the copy of the MII
>which I have requested. Thank you for your interest in my work.
>
>
>Sincerely,
>
>
>Karen Wall
>
>
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>
>
>
>
>

September 8, 1997

Dear Dr. Virginia Miller,

Thank you so much for your quick response to my August e-mail request. Your interest in my work is appreciated.

As you suggested in your e-mail response, I am writing to ask if you would be kind enough to send me a copy of the most current edition of the Miller Intuitiveness Instrument (MII) for examination. In my Master of Nursing thesis I am examining whether or not expert nursing instructors use intuition in assessing the clinical performance of nursing students. I would like to see if the MII would be of value in my research. If I think it has a place, I will contact you to follow-up on the appropriate process for acquiring permission to use it.

I have included a self-addressed envelope and a $5.00 U.S. bill to accommodate the cost of return postage. I hope $5.00 U.S. will be sufficient. If it is not, please do not hesitate to let me know what more I owe you. Thank you again for assistance, and your interest in my research. I will keep in touch.

Sincerely,

Karen L. Wall

Karen L. Wall
Graduate Student in Nursing
University of Manitoba
Winnipeg, Manitoba, Canada

Home Address:

Karen L. Wall
247 Augusta Drive
Winnipeg, Manitoba
CANADA R3T 4H3

Karen L. Wall
247 Augusta Drive
Winnipeg, Manitoba
CANADA R3T 4H3

September 22, 1997

Dear Ms. Wall,

Enclosed is a copy of the Miller Intuitiveness Instrument (MII) which you requested. As I mentioned earlier, the article noted below will provide information relative to the development of the MII:

Miller, V.G. (1993). Measurement of self-perception of intuitiveness. Western Journal of Nursing Research, 15 (5), 595-606.

Please contact me if you have further questions, or if you decide that you want to use the instrument in your research.

Sincerely,

Virginia G. Miller, RN, PhD, CS, FNP
Associate Professor
School of Nursing
Texas Tech University Health Sciences Center
Lubbock, TX 79430
USA

To: sonvgm@ttuhsc.edu
Subject: Miller Intuitive Instrument (MII)

October 1, 1997

Dear Dr. Miller,

The MII and the $4.00 in change arrived safely in the mail yesterday. Thank you very much for your prompt response. I will examine the tool, talk to my thesis advisors, and let you know how I wish to procede. I can assure you that I will not use the MII in any manner without contacting you for advice and permission. It may be awhile before I'm able to make any decisions, so don't worry if you don't hear from me for a bit. I just wanted to let you know that the document arrived safely. Thanks again.

Karen Wall

MN Student
247 Augusta Drive
Winnipeg, Manitoba
Canada
R3T 4H3

Return-Path: <sonvgm@ttuhsc.edu>
Date: Wed, 1 Oct 1997 15:19:05 -0600
To: kwall@rrcc.mb.ca
From: Jini Miller <sonvgm@ttuhsc.edu>
Subject: Re: Miller Intuitive Instrument (MII)

Thanks for letting me know. Good to know the mail between the US and Canada doesn't travel by "Pony Express!"

Good luck.

Jini Miller

At 11:15 AM 10/1/97 -0600, you wrote:
>October 1, 1997
>
>
>Dear Dr. Miller,
>
>
>
>The MII and the $4.00 in change arrived safely in the mail yesterday. Thank you
>very much for your prompt response. I will examine the tool, talk to my thesis
>advisors, and let you know how I wish to procede. I can assure you that I will
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>It may be awhile before I'm able to make any decisions, so don't worry if you
>don't hear from me for a bit. I just wanted to let you know that the document
>arrived safely. Thanks again.
>
>
>
>Karen Wall
>
>MN Student
>247 Augusta Drive
>Winnipeg, Manitoba
>Canada
>R3T 4H3
>

To: sonvgm@ttuhsc.edu
Subject: Masters Thesis on Intuition

February 7, 1998

Dear Dr. Miller,

Early last fall I contacted you about the possibility of using the Miller Intuitive Instrument (MII) as a data collection tool for my Masters Thesis on the use of intuition by expert clinical nursing instructors in their assessment and evaluation of nursing students' clinical performance. You were kind enough to send me a copy of the instrument, and agreed that it would be acceptable for me to use it, provided I acquired your written approval in advance.

As my thesis proposal has progressed, it has become clear that my data collection methodology is going to be very qualitative and exploratory, and therefore, the MII will not be appropriate for me to use. I have developed a number of semi-structured questions to help guide the interview process, and six of them were based on ideas I gleaned from the MII. Therefore, I am writing to advise you of the six questions I have designed with guidance from the MII, and to ask you if you have any problems with my using them to help framework my interviews.

The six questions are:

1. Do you consider yourself intuitive in assessing and evaluating situations involving students, and student performance, in the clinical setting? (If YES) Can you describe why you think you are intuitive? (If NO) How would you describe yourself as an assessor and evaluator of student clinical performance?

2. Have you ever had an intuitive (gut) feeling about a student, or a clinical situation involving a student, for which you could not readily articulate the reason? (If YES) Describe this situation for me.

3. When you are uncertain about a student's clinical performance, but you have an intuitive (gut) feeling about it, do you act on those feelings? (If YES) What do you do? (If NO) Why not?

4. Does your intuitive (gut) feeling about a student's performance influence your clinical supervision of the student...the way in which you evaluate the student...? (If YES) Describe how.

5. Do you feel your intuitive (gut) feelings about a student's performance are at least as important as objective data your may gather about that performance? (If YES) Why? (If No) Why not?

6. In your opinion and experience, are the intuitive (gut) feelings you have about students and their clinical performance, usually correct? On what do you base your (yes or no) answer.

Please let me know if you have concerns about my using any of these questions, and what you would prefer I do if there are difficulties.

I will send you a copy of all my questions when they are complete. Any advice you have on them would be appreciated. Thank you for your time, Dr. Miller. I look forward to hearing from you.

Sincerely,

Karen L. Wall
Graduate Student
Master of Nursing Program
University of Manitoba
Winnipeg, Manitoba, Canada

E-mail: kwall@rrcc.mb.ca

Return-Path: <sonvgm@ttuhsc.edu>
Date: Mon, 9 Feb 1998 10:05:30 -0600
To: kwall@rrcc.mb.ca
From: Jini Miller <sonvgm@ttuhsc.edu>
Subject: Re: Masters Thesis on Intuition

Dear Karen,

First, let me thank you for your consideration of my input. Certainly your questions are not directly lifted from the Miller Intuitiveness Instrument (MII) and as such would not require my input whatsoever. I do appreciate you asking, though.

I think the questions are fine the way they are. It will be very interesting to know what your subjects have to say. I'm glad that you are looking at both the SENSE of having an intuition about something, and the WILLINGNESS TO ACT on that sense. I think there is probably a big difference among practicing nurses in that regard, and I wonder if "acting" comes after having experiences with "accurate" intuitions upon which no actions were taken!

Because it is very helpful for me to have "exposure" of my instrument in the literature, I would appreciate you mentioning in any publication you may make that some of the ideas that generated the questions came from the content of the MII. Certainly, that is not a "requirement" because we aren't talking about copyright issues here; just a gesture on your part that would be of some help to me as I get the instrument "out there."

Good luck, and I hope to hear from you again!

Sincerely,

Virginia G. Miller, RN, PhD, CS, FNP
Associate Professor
School of Nursing
Texas Tech University Health Sciences Center
Lubbock, TX 79430

At 01:28 PM 2/7/98 -0600, you wrote:
>February 7. 1998
>
>Dear Dr. Miller,
>
>
>Early last fall I contacted you about the possibility of using the Miller
>Intuitive Instrument (MII) as a data collection tool for my Masters Thesis on
>the use of intuition by expert clinical nursing instructors in their
assessment
>and evaluation of nursing students' clinical performance. You were kind
enough
>to send me a copy of the instrument, and agreed that it would be acceptable
for
>me to use it, provided I acquired your written approval in advance.
>
>As my thesis proposal has progressed, it has become clear that my data
>collection methodology is going to be very qualitative and exploratory, and
>therefore, the MII will not be appropriate for me to use. I have developed a
>number of semi-structured questions to help guide the interview process,
and six
>of them were based on ideas I gleaned from the MII. Therefore, I am
writing to
>advise you of the six questions I have designed with guidance from the MII,
and
>to ask you if you have any problems with my using them to help framework my
>interviews.
>
>The six questions are:
>
>1. Do you consider yourself intuitive in assessing and evaluating situations
>involving students, and student performance, in the clinical setting? (If
YES)
>Can you describe why you think you are intuitive? (If NO) How would you
describe
>yourself as an assessor and evaluator of student clinical performance?
>
>2. Have you ever had an intuitive (gut) feeling about a student, or a clinical
>situation involving a student, for which you could not readily articulate the

>reason? (If YES) Describe this situation for me.
>
>3. When you are uncertain about a student's clinical performance, but you have
>an intuitive (gut) feeling about it, do you act on those feelings?
>(If YES) What do you do? (If NO) Why not?
>
>4. Does your intuitive (gut) feeling about a student's performance influence
>your clinical supervision of the student...the way in which you evaluate the
>student...? (If YES) Describe how.
>
>5. Do you feel your intuitive (gut) feelings about a student's performance are
>at least as important as objective data your may gather about that performance?
>(If YES) Why? (If No) Why not?
>
>6. In your opinion and experience, are the intuitive (gut) feelings you have
>about students and their clinical performance, usually correct? On what do you
>base your (yes or no) answer.
>
>
>Please let me know if you have concerns about my using any of these questions,
>and what you would prefer I do if there are difficulties.
>
>I will send you a copy of all my questions when they are complete. Any advice
>you have on them would be appreciated. Thank you for your time, Dr. Miller. I
>look forward to hearing from you.
>
>
>Sincerely,
>
>
>Karen L. Wall
>Graduate Student
>Master of Nursing Program
>University of Manitoba
>Winnipeg, Manitoba, Canada
>
>E-mail: kwall@rrcc.mb.ca
>

To: sonvgm@ttuhsc,edu
Subject: Masters Thesis: The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students

February 12, 1998

Dear Dr. Miller,

Thank you so much for your prompt reply to my e-mail request, and for taking the time to look at my interview questions. I appreciate your support. I will be mentioning the help you and the MII gave me in developing interview questions in the methodology chapter of my thesis, if that is all right with you. I would also like to include the MII as an Appendix for readers to see from where some of my thoughts have come, but if you think that would be infringement of copyright, or even inappropriate, I will not. Tell me your wishes. I will keep you up to date on my work, and will send you a copy of my results when completed. Thanks again for your help.

Karen Wall
Graduate Student
Master of Nursing Program
University of Manitoba
Winnipeg, Manitoba, Canada

E-mail: kwall@rrcc.mb.ca

Return-Path: <sonvgm@ttuhsc.edu>
Date: Thu, 12 Feb 1998 16:14:39 -0600
To: kwall@rrcc.mb.ca
From: Jini Miller <sonvgm@ttuhsc.edu>
Subject: Re: Masters Thesis: The Use of Intuition by Expert Clinical NursingTeachers in the Assessment of the Clinical Performance of NursingStudents

Dear Karen,

Your plans to include in your methodology chapter, mention of the influence both the MII and I had on the development of your interview questions will be appropriate, and certainly adequate. Thank you.

In terms of your desire to include a copy of the Miller Intuitiveness Instrument (MII) as an appendix, that is acceptable, too, provided you indicate, "Included with permission of author."

I am assuming, of course, that you will be using the copy of the MII that I sent you which shows the copyright designation at the top of the front page. If that is the case, that will be fine with me, and a hard copy of this e-mail should suffice as "written permission" for you to do so.

If your committee desires something more formal, I will be happy to send a letter to that effect. Just let me know.

Again, good luck! I will look forward to receiving a report of your results.

Virginia G. Miller, RN, PhD, CS, FNP

(P.S. Good luck to the Canadian women's hockey team. The Canadian team will face off against the U.S. women's team for the gold in the Olympics in the very near future!)

At 02:38 PM 2/12/98 -0600, you wrote:
>February 12, 1998
>
>
>Dear Dr. Miller,
>
>
>Thank you so much for your prompt reply to my e-mail request, and for taking the
>time to look at my interview questions. I appreciate your support. I will be
>mentioning the help you and the MII gave me in developing interview questions in
>the methodology chapter of my thesis, if that is all right with you. I would
>also like to include the MII as an Appendix for readers to see from where some
>of my thoughts have come, but if you think that would be infringement of
>copyright, or even inappropriate, I will not. Tell me your wishes. I will keep
>you up to date on my work, and will send you a copy of my results when
>completed. Thanks again for your help.
>
>
>Karen Wall
>Graduate Student
>Master of Nursing Program
>University of Manitoba
>Winnipeg, Manitoba, Canada
>
>E-mail: kwall@rrcc.mb.ca
>
>
>

To: sonvgm@ttuhsc.edu
Subject: Masters Thesis; Intuition

February 22. 1998

Dear Dr. Miller,

I am past the 150 page mark in my thesis proposal and still going. I am currently describing tools noted in the literature for measuring intuitiveness. I have two articles written by you alone, one written by you and Dr. Rew, and the abstract of your dissertation. As near as I can determine, the MII has not been used in a study by anyone since your original disseration. Am I correct? If not, could you tell me in what other circumstances and by whom has it been used? Thank you.

Karen Wall

E-mail: kwall@rrcc.mb.ca

Subject: Re: Masters Thesis; Intuition

Return-Path: <sonvgm@ttuhsc.edu>
Date: Mon, 23 Feb 1998 11:27:00 -0600
To: kwall@rrcc.mb.ca
From: Jini Miller <sonvgm@ttuhsc.edu>
Subject: Re: Masters Thesis; Intuition

Dear Karen,

To my knowledge, no publications have emanated from studies that have used the MII. However, since 1993, many students have requested permission to use it in their master's theses or doctoral dissertations. I went through my records this a.m. and came up with the following:

Regina Cole -- Wyckoff, NJ (dissertation): "Information-Processing: An investigation of intuition & critical thinking ability among critical care nurses." She is using the MII and the CCTDI (California Critical Thinking Disposition Inventory).

Melissa Woo-Whetstone -- Statesboro, Georgia (Georgia Southern University) (thesis): She is essentially replicating my dissertation study, but using nurse practitioners as her population instead of "practicing RNs" which is the population I used.

Lisa Slaymaker -- Hattiesburg, Mississippi (University of Southern Mississippi) (thesis): "What is the nurse practitioner's perception of intuitiveness utilized in clinical practice?" Lisa has completed her research, but as I said, to my knowledge, hasn't published about it as of yet.

Glen Blair -- Boston, MA (Northeastern University) (thesis): Glen is trying to find quantitative support for Dr. Benner's work in skill acquisition of nurses from novice to expert. His plan was to correlate scores from the MII with scores from instrument(s) designed to measure how critical care nurses decide to sedate patients undergoing therapeutic paralysis with neuromuscular blocking agents. His hypothesis: "Experienced nurses use intuition to guide their decision making in this situation."

Erin Myers -- Mississippi University for Women (thesis): "The relationship of nursing experience & intuitiveness."

Becky Kuchynka -- Miles City, MT (thesis): "The relationship between expert nursing practice & nurses' self-perception of intuitiveness."

Paula Breitschuh -- Rochester, MI (Oakland University) (thesis): Is there a relationship between perceived intuitiveness & ..."(she lists numerous demographic characteristics).

I cannot tell you where each is in his or her study. As a condition of using the MII in their studies, I do ask each to agree to share the results of his or her studies with me when their studies are completed. So far, I've received results only from Lisa Slaymaker. My conclusion about that is that some are finished and have forgotten their agreement, some have had to discontinue their studies, some have changed plans, and on and on. (I do plan to get in touch with each to verify where each is in the process, however.)

If you are interested in making contact with them, I will give you contact information, and you can take it from there.

Let me know. Good luck with your proposal development.

Jini Miller

APPENDIX H

THE MILLER INTUITIVE INSTRUMENT (MII)

MILLER INTUITIVENESS INSTRUMENT

SELF-PERCEPTION OF INTUITIVENESS

Code No. ____

DIRECTIONS: On the scale that follows each item, circle the number that best describes your perception of yourself in your professional role. Please circle a number. Do not mark between numbers.

FOR EXAMPLE:
In the clinical area, I use standard nursing diagnoses.

1	2	3	4	5	6
NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS

		1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
1.	I believe my intuitions about patients are true.	1	2	3	4	5	6
2.	I consider myself very skillful in my clinical practice.	1	2	3	4	5	6
3.	I recognize that I have "gut feelings" about clinical situations.	1	2	3	4	5	6
4.	My "gut feelings" about a clinical situation may determine my actions.	1	2	3	4	5	6
5.	I am likely to develop innovative approaches to nursing care problems.	1	2	3	4	5	6
6.	I am likely to use my innovative approaches to nursing care problems when traditional approaches are unsatisfactory.	1	2	3	4	5	6
7.	I will implement my innovative approaches in a clinical environment in which decision making about patient care is a democratic process, shared between the doctor and the nurse.	1	2	3	4	5	6

(Please turn page over)

8.	I will implement my innovative approaches even in clinical environments in which the physician tends to be authoritative in decision making about patient care.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
9.	My gut feeling about a clinical situation is at least as important as objective information in my decision making.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
10.	I am in tune with my gut feelings about a clinical situation or patient at the same time I am performing technical procedures.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
11.	Because of a "gut feeling", I may take certain nursing action -- those that directly affect the patient (such as initiating standing orders for medications or certain treatments) -- that are contrary to objective data.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
12.	I enjoy trying new ways of providing nursing care.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
13.	I enjoy discussions of philosophical issues (such as moral/ethical issues, theories, abstract ideas).	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
14.	I have had the sense of suddenly knowing something about a clinical situation or patient but of not knowing how I knew it.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
15.	Discussions about ethical issues interest me.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
16.	I am willing to act on my intuition in my nursing practice.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
17.	I am in tune with what I sense about a clinical situation or patient at the same time I am performing technical procedures.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS

18. My first point of reference when I need help in decision making about a clinical situation is to reflect upon my gut feelings about it.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
19. Discussions of esthetics (of the qualitative nature of things) stimulate my interest.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
20. I know things about a patient or a clinical situation that I do not immediately know how I acquired.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
21. What I sense about a clinical situation is at least as important as objective information in my decision making.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
22. I trust my intuition when assessing a patient.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
23. I trust my intuition when planning care for a patient.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
24. I trust my intuition when providing care for a patient.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
25. I tend to be non-traditional in my approach to problems which arise in providing nursing care.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
26. When my gut feeling is that a patient's condition is deteriorating, despite objective data to the contrary, I believe the physician should be informed of my feelings.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
27. When my gut feeling is that a patient's condition is deteriorating, despite objective data to the contrary, I will inform the physician of my feelings.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS

28.	When my gut feeling is that a patient's condition is deteriorating despite ambiguous clinical evidence, I will inform the physician of my feelings.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
29.	I am aware of a special exchange of energy in the relationship between myself and some of my patients.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
30.	There are times when my gut feelings about a patient or clinical situation are more important that objective information in my decision making.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
31.	My first point of reference when I need help in decision making about a clinical situation is to reflect on what I sense about it.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
32.	In clinical situations, I have confidence in my intuition.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
33.	I believe that non-traditional forms of treatment (e.g. therapeutic touch, creative imagery, positive thinking) can be effective forms of health care.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
34.	I feel a "connection" between myself and some of my patients that is spiritual in nature.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
35.	I use my self to tune into my patient's feelings.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
36.	There are times when what I sense about a clinical situation is more important than objective information.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
37.	I consider myself to be very intuitive in my professional role.	1	2	3	4	5	6
		NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS

38. When uncertain about what action to take in a clinical situation, I rely on my "gut feeling" to help me determine the right thing to do.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
39. Despite having limited objective information, I may have a sense of certainty about a clinical situation.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
40. What I sense about a clinical situation may determine my actions.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
41. I have had the experience in which everything "comes together" for me and I know exactly what to do.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
42. There are some things I can do clinically better than many other nurses.	1	2	3	4	5	6
	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS
43. On this scale please circle the number that corresponds to how intuitive you consider yourself to be:	1	2	3	4	5	6
(1 = not intuitive at all; 6 = very intuitive)	NEVER	VERY INFRE-QUENTLY	INFRE-QUENTLY	SOMETIMES	OFTEN	NEARLY ALWAYS

(Please be sure you have marked items on BOTH the front AND back of each page. Thank you.)

APPENDIX I

CORRESPONDENCE WITH DR. LYNN REW

To: ellerew@mail.utexas.edu
Subject: Masters Thesis on the Use of Intuition by Expert Clinical Nursing Instructors in the Assessment and Evaluation of the Clinical Performance of Nursing Students

Date: Wed, 11 Feb 98
From: kwall@rrcc.mb.ca
Subject: Masters Thesis on the Use of Intuition by Expert Clinical Nursing Instructors in the Assessment and Evaluation of the Clinical Performance of Nursing Students
To: ellerew@mail.utexas.edu

February 11, 1998

Dear Dr. Rew,

I am a Masters student in Nursing at the University of Manitoba in Winnipeg, Manitoba, Canada. I am currently at the proposal stage of my thesis. The topic of my exploratory study is the use of intuition by expert clinical nursing instructors in the assessment and evaluation of the clinical performance of nursing students. I have developed seven semi-structured questions to guide my subject interviews. I have sent them to Dr. Patricia Benner via e-mail, and asked for her advice about their content, structure, etc. She was kind enough to do this for me, and had some suggestions which I have already encorporated. I have also sent them to Dr. Virginia Miller, who I believe was a former graduate student of yours, and she has given me some helpful comments. As you are someone who I consider an expert in the field of nursing and intuition, I have included my seven questions, already revised according to Dr. Benner's suggestions, for your perusal as well, if you have a few moments to look at them. Any suggestions you have would be greatly appreciated. The questions are:

1. Tell me about your experiences with assessing and evaluating the clinical performance of nursing students.

2. Do you consider yourself intuitive in assessing and evaluating situations involving students, and student performance, in the clinical setting? (If YES) Describe why you think you are intuitive? (If NO) How would you describe yourself as an assessor and evaluator of student clinical performance?

3. Have you ever had an intuitive (gut) feeling about a student, or a clinical siuation involving a student, for which you could not readily articulate the reason? (If YES) Tell me this story/about this situation. Tell me about the thoughts or feelings that accompanied this intuitive (gut) feeling. Tell me how you followed up on this intuitive (gut) feeling.

4. If you are uncertain about a student's clinical performance, but have an intuitive (gut) feeling about it, do you act on those feelings? (If YES) What do you do? (If NO) What do you do about those feelings? What do you do rather than act on those feelings?

5. Does your intuitive (gut) feeling about a student's clinical performance influence your clinical supervision of that student...the way in which you evaluate that student...? (If YES) Describe how.

6. Do you feel that your intuitive (gut) feelings about a student's clinical performance are at least as important as objective data you may gather about that performance? (If YES) Why? (If NO) Why not?

7. In your opinion and experience, are the intuitive (gut) feelings you have about students and their clinical performance, usually correct? On what do you base your (YES or NO) answer?

Thank you so much for your time, Dr. Rew. I look forward to hearing from you, and will keep you apprised of my project as I progress.

Sincerely,

Karen L. Wall
Graduate Student
Master of Nursing Program
University of Manitoba
Winnipeg, Manitoba, Canada

E-mail: kwall@rrcc.mb.ca

Return-Path: <ellerew@mail.utexas.edu>
Date: Thu, 12 Feb 1998 10:06:37 -0600
To: kwall@rrcc.mb.ca
From: ellerew@mail.utexas.edu (Lynn Rew)
Subject: Re: Masters Thesis on the Use of Intuition by Expert Clinical Nursing Instructors in the Assessment and Evaluation of the Clinical Performance of Nursing Students

Ms. Wall: What an exciting study. I'll be interested in your results. My suggestions are as follows:

1. Tell me about your experiences with assessing and evaluating the clinical performance of nursing students. [be clear with your participants how you differentiate "assess" from "evaluate". I probably would use one or the other of these terms, but not both, in a single question. By having both terms in the same question, you could have varied responses because the two terms mean different things to different people. If you are interested in both processes, ask about them separately. This goes for question # 2 as well.]

2. Do you consider yourself intuitive in assessing and evaluating situations involving students, and student performance, in the clinical setting? (If YES) Describe why you think you are intuitive? (If NO) How would you describe yourself as an assessor and evaluator of student clinical performance? [What does the interviewee mean by "intuitive"? Can a person use intuition in clinical decision-making without considering herself to be "intuitive"?]

3. Have you ever had an intuitive (gut) feeling about a student, or a clinical siuation involving a student, for which you could not readily articulate the reason? (If YES) Tell me this story/about this situation. Tell me about the thoughts or feelings that accompanied this intuitive (gut) feeling. Tell me how
you followed up on this intuitive (gut) feeling. [The first question here is lengthy and somewhat confusing. How does one articulate a reason about a feeling? People don't usually do this anyway. The intuitive feeling prompts them to take some action for which they may not be able to articulate a reason--I think that may be what you are after here.]

4. If you are uncertain about a student's clinical performance, but have an intuitive (gut) feeling about it, do you act on those feelings? (If YES) What do you do? (If NO) What do you do about those feelings? What do you do rather than act on those feelings? [Rather than asking a yes-no question, you could ask, "If you are uncertain about a student's clinical performance, but have an intuitive (gut) feeling about it, HOW do you act on those feelings?" Because to take no action based on the feelings is still a behavioral response and I think this forces the question a bit better.]

5. Does your intuitive (gut) feeling about a student's clinical performance influence your clinical supervision of that student...the way in which you evaluate that student...? (If YES) Describe how. [Again, I would ask, "HOW does your intuitive feeling . . . influence your clinical supervision..."]

6. Do you feel that your intuitive (gut) feelings about a student's clinical performance are at least as important as objective data you may gather about that performance? (If YES) Why? (If NO) Why not?

7. In your opinion and experience, are the intuitive (gut) feelings you have about students and their clinical performance, usually correct? On what do you base your (YES or NO) answer? [You might ask them if they have ever kept a log of those experiences--or maybe have them do this as part of your project--that would certainly be new and interesting information!]

Best wishes to you--I hope these comments are helpful. I'm so glad to see somebody doing some more additional work on this. Lynn Rew

>Date: Wed, 11 Feb 98
>From: kwall@rrcc.mb.ca
>Subject: Masters Thesis on the Use of Intuition by Expert Clinical Nursing
>Instructors in the Assessment and Evaluation of the Clinical Performance of
>Nursing Students
>To: ellerew@mail.utexas.edu
>
>February 11, 1998
>

>Dear Dr. Rew,
>
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>Manitoba, Canada. I am currently at the proposal stage of my thesis. The
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>of my exploratory study is the use of intuition by expert clinical nursing
>instructors in the assessment and evaluation of the clinical performance of
>nursing students. I have developed seven semi-structured questions to
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>subject interviews. I have sent them to Dr. Patricia Benner via e-mail, and
>asked for her advice about their content, structure, etc. She was kind
>enough to do this for me, and had some suggestions which I have already
>encorporated. I have also sent them to Dr. Virginia Miller, who I believe
>was a
>former graduate student of yours, and she has given me some helpful comments.
>As you are someone who I consider an expert in the field of nursing and
>intuition, I have included my seven questions, already revised according
>to Dr.
>Benner's suggestions, for your perusal as well, if you have a few moments to
>look at them. Any suggestions you have would be greatly appreciated. The
>questions are:
>
>1. Tell me about your experiences with assessing and evaluating the clinical
>performance of nursing students.
>
>2. Do you consider yourself intuitive in assessing and evaluating situations
>involving students, and student performance, in the clinical setting?
>(If YES) Describe why you think you are intuitive? (If NO) How would you
>describe yourself as an assessor and evaluator of student clinical performance?
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>3. Have you ever had an intuitive (gut) feeling about a student, or a clinical
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>reason? (If YES) Tell me this story/about this situation. Tell me about the
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>you followed up on this intuitive (gut) feeling.
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>intuitive (gut) feeling about it, do you act on those feelings?
>(If YES) What do you do? (If NO) What do you do about those feelings?
>What do
>you do rather than act on those feelings?
>
>5. Does your intuitive (gut) feeling about a student's clinical performance
>influence your clinical supervision of that student...the way in which you
>evaluate that student...? (If YES) Describe how.
>
>6. Do you feel that your intuitive (gut) feelings about a student's clinical
>performance are at least as important as objective data you may gather about
>that performance? (If YES) Why? (If NO) Why not?
>
>7. In your opinion and experience, are the intuitive (gut) feelings you have
>about students and their clinical performance, usually correct? On what
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>Thank you so much for your time, Dr. Rew. I look forward to hearing from
>you, and will keep you apprised of my project as I progress.
>
>
>Sincerely,
>
>Karen L. Wall
>Graduate Student
>Master of Nursing Program
>University of Manitoba
>Winnipeg, Manitoba, Canada
>
>E-mail: kwall@rrcc.mb.ca
>

To: ellerew@mail.utexas.edu
Subject: Masters Thesis: The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students

Date: Thu, 12 Feb 98 13:52:57 -0600
From: kwall@rrcc.mb.ca
Subject: Masters Thesis: The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students

February 12, 1998

Dear Dr. Rew,

Thank you so much for your prompt reply to my e-mail request, and for taking the time to do such a thorough critique. I smiled when I read some of your comments, because, in the back of my mind I had a 'sense' (excuse the choice of noun!) that the cumbersomeness of some of these questions could be smoothed out. Thank you. You will note I have already encorporated the idea of using only the term assessment, rather than assessment and evaluation, in the focus of the study. I will see what my thesis advisor has to say. I will keep you up to date with the study, and will send you the results when I have finished. Thank you again for your help.

Karen Wall
Graduate Student
Master of Nursing Program
University of Manitoba
Winnipeg, Manitoba, Canada

E-mail: kwall@rrcc.mb.ca

APPENDIX J

REQUESTS TO THREE PEERS: PERUSAL OF INTERVIEW QUESTIONS FOR CLARITY

MEMORANDUM

DATE: March 6, 1998

TO: Dr. Evelyn Labun **FROM:** Karen Wall

SUBJECT: ***QUESTIONS TO GUIDE SUBJECT INTERVIEWS FOR MY THESIS***

As you know, my thesis topic is '***The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students***'. Attached is a draft of the questions that will guide my subject interviews. They have already been examined by three experts in the field: Dr. Patricia Benner, Dr. Virginia Miller, and Dr. Lynn Rew. As a peer, would you be kind enough to critique them for clarity. As well, feel free to comment on any aspect of their content or structure about which you have concerns. Thank you.

MEMORANDUM

DATE: March 6, 1998

TO: Sandy Romano **FROM:** Karen Wall

SUBJECT: ***QUESTIONS TO GUIDE SUBJECT INTERVIEWS FOR MY THESIS***

As you know, my thesis topic is '***The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students***'. Attached is a draft of the questions that will guide my subject interviews. They have already been examined by three experts in the field: Dr. Patricia Benner, Dr. Virginia Miller, and Dr. Lynn Rew. As a peer, would you be kind enough to critique them for clarity. As well, feel free to comment on any aspect of their content or structure about which you have concerns. Thank you.

Red River Community College

MEMORANDUM

DATE: March 6, 1998

TO: Leslie Walsh **FROM:** Karen Wall

SUBJECT: ***QUESTIONS TO GUIDE SUBJECT INTERVIEWS FOR MY THESIS***

As you know, my thesis topic is '***The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students***'. Attached is a draft of the questions that will guide my subject interviews. They have already been examined by three experts in the field: Dr. Patricia Benner, Dr. Virginia Miller, and Dr. Lynn Rew. As a peer, would you be kind enough to critique them for clarity. As well, feel free to comment on any aspect of their content or structure about which you have concerns. Thank you.

APPENDIX K

SEMI-STRUCTURED QUESTIONS TO GUIDE THE INTERVIEWS

SEMI-STRUCTURED QUESTIONS TO GUIDE THE INTERVIEWS

1. Tell me about some of your experiences with assessing the clinical performance of nursing students.

2. How would you describe yourself as an assessor of student clinical performance?

3. Have you ever had an intuitive (gut) feeling about a student, or a clinical situation involving a student?

(If YES) Tell me this story/about this situation. Tell me about the thoughts and feelings that accompanied the intuitive (gut) feeling. Tell me how you followed up on this intuitive (gut) feeling.

4. If you are uncertain about a student's clinical performance, but have an intuitive (gut) feeling about it, how do you act on those feelings?

5. How does an intuitive (gut) feeling about a student's clinical performance influence your clinical supervision of that student? ... the way in which you evaluate that student?

6. Do you feel that your intuitive (gut) feelings about a student's clinical performance are as important as objective data you may gather about that performance?
(If YES) Why? (If NO) Why not?

7. In your opinion and experience, are the intuitive (gut) feelings you have about students and their clinical performance, usually accurate? On what do you base your (YES or NO) answer? Have you ever kept a log or journal about such experiences?

ADDITIONAL QUESTIONS ADDED AFTER THE FIRST INTERVIEW, IF THE INFORMATION BEING SOUGHT BY THE QUESTION DID NOT COME FORTH UNSOLICITED

8. How are you different now in the way you assess students in the clinical setting as compared to when you were a new teacher?

9. Are there characteristics or behaviors in students that you think you primarily assess through intuition? If yes, what are they?

10. Have you ever had a positive intuitive 'gut' feeling about a student, or a clinical situation involving a student?

QUESTION ADDED TO EVERY INTERVIEW AFTER THE FIRST INTERVIEW

11. Do you have any final thoughts about this topic or this particular research that you would like me to know?

APPENDIX L

THE RELATIONSHIP BETWEEN THE SEMI-STRUCTURED INTERVIEW QUESTIONS AND THE CONCEPTUAL FRAMEWORK

RELATIONSHIP BETWEEN THE SEMI-STRUCTURED INTERVIEW QUESTIONS AND THE CONCEPTUAL FRAMEWORK

Each question was designed with some aspect of the conceptual framwork in mind. Questions # 1 and # 3 are broad, and were designed to bring out data that could conceivably fit into any one of the six categories of the conceptual framework. They were considered the *keystone* questions of the interview process.

Interview question # 2 was designed to bring out data reflecting on the participant's use of the components 'Commonsense Understanding' and 'Deliberative Rationality'. A response that emphasized a detached, out-of-context approach to student assessment would suggest that the participant was less likely to use either 'Commonsense Understanding' or 'Deliberative Rationality' when examining student performance.

Interview Questions # 4 and # 5 were designed to bring out aspects of student assessment that reflected the use of the framework components 'Sense of Salience' and 'Deliberative Rationality'. These questions ask the participant to describe weighing and acting on gathered data about a student. As such, they go further than the first three questions in interpreting the degree to which intuitive assessment of students was part of the repertoire of the participant.

Interview questions # 6 and # 7 relate to the framework only indirectly. They were designed to determine the value the participant placed on the intuitive assessment of students, and the tenacity of that held belief. As such, they reinforced or negated the interpretation of data gathered via questions # 1 to # 5.

It was determined that it would be unlikely that data would be forthcoming reflecting the use of the component 'Skilled Know-How'. This component refers to technical performance in clinical nursing practice, and has little relevance to the focus of this study.

APPENDIX M

ETHICAL APPROVAL CORRESPONDENCE AND INFORMATION

ETHICAL REVIEW COMMITTEE
UNIVERSITY OF MANITOBA, FACULTY OF NURSING

Red River Community College
2055 Notre Dame Avenue
Winnipeg, Manitoba R3H 0J9

Karen Wall
Office: C607
Phone: (204) 632-2297
Fax: (204) 632-9661
E-mail: kwall@rrcc.mb.ca

May 5, 1998

Chair
Ethics Review Committee
Faculty of Nursing
University of Manitoba

Dear Chairperson,

Please find attached:

1. The original version of the ***Faculty of Nursing Checklist***, containing the signatures of my three thesis committee members.

2. Twelve copies of my thesis submission for ethical review.

Please feel free to contact me at any time, should you require further information. I look forward to hearing from the committee as soon as possible. Thank you.

Sincerely,

Karen L. Wall

Karen L. Wall
Graduate Student, Nursing
Student Number # 5001545

May 15, 1998

Karen Chalmers
Chair, Ethics Review Committee
Faculty of Nursing
University of Manitoba

Dear Dr. Chalmers,

I have submitted my Thesis Proposal for ethical review by the Faculty of Nursing Thesis Review Committee at your June 1st meeting. Because of the potential study population, I was also required to submit the proposal to the External Research Committee of Red River Community College (RRCC) for ethics review.

The RRCC committee has already met and approved the project, with the encorporation of some minor alterations (see the attached letter from the Chair of the RRCC External Research Committee). I encorporated the suggested alterations into a revised ***"Consent to Participate Form" Appendix F***, that is also attached. I thought it appropriate for your committee members to critique this revised version of the consent form, in case they have concerns about the alterations. I have included 12 copies, and highlighted in yellow the changes from the original Appendix F that was included in your committee members' packages.

I hope this is sufficient information, Dr. Chalmers. Please call me at **632-2297** or e-mail me at **kwall@rrcc.mb.ca**, if you have concerns, or wish further information. Thank you.

Sincerely,

Karen L. Wall

Karen L. Wall
Graduate Student, Nursing
Student # 5001545

cc. Dr. Pat Farrell, Thesis Committee Chair

THE UNIVERSITY OF MANITOBA

FACULTY OF NURSING

Room 246 Bison Building
Winnipeg, Manitoba
Canada R3T 2N2

Tel: (204) 474-7452
Fax: (204) 275-5464

June 4, 1998

Ms. Karen Wall
247 Agusta Drive
Winnipeg, Manitoba
R3T 4H3

Dear Ms. Wall:

Re proposal #98/29: The use of intuition by expert clinical nursing teachers in the assessment of the clinical performance of nursing students

Thank you for forwarding changes to the consent form as outlined in your May 15th letter. The above proposal and additional material were reviewed at the Ethical Review Committee of the Faculty of Nursing on June 1st. There were no major ethical concerns. The following points need clarification or revision prior to final approval:

1. Sample size What is the size of this target population? Will it be possible to ensure anonymity? You state that you wish to have a minimum of five participants in your sample. How will final selection be made if more people volunteer that you require?

2. Consent: The Committee notes your careful attention to issues of confidentiality and anonymity. Regarding the first change on page 2 (of the May 15th addendum), it is very difficult to guarantee anonymity. If you have any concerns that participants may be identified, you can request that your thesis not be housed in the open shelves in Dafoe library. This matter could be discussed with your Chair after the completion of your project.

3. In the communication to prospective participants, we suggest you use the term "selected" rather than "nominated".

Once these questions/points have been addressed, the proposal can be approved. Please contact me at 474-7318 if you wish to discuss any of these points with me directly.

Sincerely,

Karen Chalmers

Karen Chalmers RN, PhD
Chair, Ethical Review Committee

(*EDITED FOR PURPOSES OF ANONYMITY AND CONFIDENTIALITY)

June 18, 1998

Dear Dr. Chalmers,

I am writing in response to your letter of June 4th, regarding additional information required by the Ethical Review Committee prior to giving final ethical approval to my thesis project. I hope the content of this letter adequately answers the committee's concerns.

THE COMMITTEE'S FIRST CONCERN WAS RELATED TO PARTICIPANT SELECTION:

Since I have received approval from the ***[Head of Site # 1]*** and the ***[Head of Sites # 2 and # 3]*** to access the nursing faculties of ***[Site # 1]*** and ***[Sites # 2 and # 3]*** respectively, (pending Ethical Review Approval), I believe I can clarify the issue of participant selection more clearly to the committee.

The parameters of the population from which my participants will be selected are as follows:

Site # 1:

Total number of active clinical teachers = 21

The number of those who qualify as 'expert clinical nursing teachers', according to the criteria for my study, has been determined as fourteen individuals by ***[Head of Site # 1]***. It is my intent to select **a minimum of three** participants from ***[Site #1]***.

Site # 2:

Total Number of active clinical teachers = 30

The number of those who qualify as 'expert clinical nursing teachers', according to the criteria for my study, is currently being determined by ***[The Site # 2 Designate]***. ***[The Site # 2 Designate]*** was asked to assist me with this selection process by ***[The Head of Site # 2]***, who felt ***[The Site # 2 Designate]*** was the most qualified faculty member to do so. I am meeting with ***[The Site # 2 Designate]*** at 0815 hours this Friday, June 19th, to acquire the needed information about potential participants. As I already know that many of the clinical facilitators at ***[Site # 2]*** are new, or relatively new to clinical teaching, I do not expect to acquire more participants from ***[Site # 2]***, than from ***[Site # 1]***. It is my intent to select **a minimum of two** participants from ***[Site # 2]***.

Site # 3:

Total number of active clinical teachers = 5

None of the currently active clinical teachers at ***[Site # 3]*** qualify as potential participants for my study. However, some of the current course instructors from ***[Site # 3]*** have not been out of active clinical teaching for more than one year, and would qualify. ***[The Site # 3 Designate]*** is in the process of determining who, from among that faculty, would qualify. It is my intention, as a matter of balance, to select **only one participant** from ***[Site # 3]***, as it has by far the smallest number of potential participants.

Should I require more than the minimum of five participants, I will choose additional participants from ***[Sites # 1 and #2]*** to a maximum of ten participants), until I have sufficient data for my study.

I will use a random selection process to acquire the appropriate number of participants from each site in circumstances where more than the minimum number of potential participants needed from that site are identified by the site selector. Should there be no potential or willing participants from [Site # 3], I will select an additional participant from [Site # 2].

THE COMMITTEE'S SECOND CONCERN WAS RELATED TO THE MEANS BY WHICH I INTENDED TO PROTECT ANONYMITY:

It is my intention to do the following things to protect anonymity as much as is reasonably possible:

1. Participants will for the most part not be referred to individually in the study other than as... *one participant, another participant*... and so on.

2. I will designate the participants as Participant A, B, C, etc. Should it be necessary to refer to a participant specifically, he/she will be referred only by their participant letter.

3. There will be no connection made in the write-up of the study that a particular participant letter came from a particular site.

4. Demographic data will be grouped as a means of protecting anonymity.

5. As I indicated in my original proposal, I will use data masking techniques to prevent identification of participants in risk situations.

Should there be any risk of identification after these techniques are used, I will follow your committee's advice and ask Dr. Pat Farrell, my Thesis Chair, to assist me with obtaining permission to **not** have my thesis placed on the open shelves in Dafoe Library.

THE COMMITTEE THIRD CONCERN WAS RELATED TO THE USE OF THE WORD 'NOMINATED', AS OPPOSED TO THE WORD 'SELECTED', IN MY LETTER TO POTENTIAL PARTICIPANTS:

I have changed the word in my letter according to the committee's advice.

I believe this letter has answered all the questions asked of me by the Ethical Review Committee. If my answers are satisfactory, I would appreciate hearing from you as soon as possible. I wish to begin my data collection as soon as I can. If my answers are not sufficient for the Committee, please advise me as to what further information you need, and I will do my best to provide it.

As I am going to the University Campus tomorrow, I will place this letter in your mailbox while I am there. I would appreciate your immediately letting me know on my Voice Mail, at 632-2297, what your advice is regarding this matter. If you are satisfied with my revisions, I believe I will need a paper copy of the ethics approval for my thesis document. If you advise me by phone that I have complied with all the ethical concerns, and my proposal is now ethically acceptable, am I allowed to begin data collection, or must I wait for a paper copy of the ethical approval? Please let me know. My E-mail address is:

kwall@rrcc.mb.ca

... should you wish to contact me by that means. Thank you very much for your time.

Sincerely,

Karen Wall (Graduate Student # 5001545)
247 Augusta Drive,
Winnipeg, MB
R3T 4H3

THE UNIVERSITY OF MANITOBA

FACULTY OF NURSING

Room 246 Bison Building
Winnipeg, Manitoba
Canada R3T 2N2

Tel: (204) 474-7452
Fax: (204) 275-5464

June 19, 1998

Ms. Karen Wall
247 Agusta Drive
Winnipeg, Manitoba
R3T 4H3

Dear Ms. Wall:

Re proposal #98/29: The use of intuition by expert clinical nursing teachers in the assessment of the clinical performance of nursing students

Thank you for the changes to the above proposal. With the changes as outlined in your June 17th fax and the revision to the recruitment outlined in your June 18th letter, the proposal is approved.

I would like to wish you every success with your project.

Sincerely,

Karen Chalmers

Karen Chalmers RN, PhD
Chair, Ethical Review Committee

The University of Manitoba

FACULTY OF NURSING
ETHICAL REVIEW COMMITTEE

APPROVAL FORM

Proposal Number N98/29

Proposal Title: "The Use of Intuition by Expert Clinical Nursing Teachers in the Assessment of the Clinical Performance of Nursing Students"

Name and Title of Researcher(s): Karen Wall
Graduate Student, Faculty of Nursing

Date of Review: June 1, 1998

APPROVED BY THE COMMITTEE: June 19, 1998

Comments: With changes dated June 17 & 18, 1998.

Date: June 19, 1998

Karen I. Chalmers

Karen I. Chalmers, PhD, RN — Chairperson
Associate Professor
University of Manitoba Faculty of Nursing

NOTE:
Any significant changes in the proposal should be reported to the Chairperson for the Ethical Review Committee's consideration, in advance of implementation of such changes.

Revised: 92/05/08/se

APPENDIX N

ETHICAL APPROVAL CORRESPONDENCE

EXTERNAL RESEARCH COMMITTEE
RED RIVER COMMUNITY COLLEGE

2055 Notre Dame Avenue
Winnipeg, Manitoba, Canada R3H 0J9
204-632-2311 Fax: 204-632-9661

Red River Community College

May 12, 1998

Ms Karen Wall
Instructor
Nursing Department
Red River College
Bldg. C

Dear Ms Wall:

The Red River College External Research Committee has approved your request to recruit and interview expert clinical nursing teachers in support of your research for your thesis project, subject to the changes identified below.

The committee would like to have a statement included in the Consent Form which identifies the disposition of the research data more specifically. You have indicated in Section F, page 2 of the Consent Form that " the researcher will keep all materials in a locked file cabinet, when she is not physically with such material." The Committee would like you to also indicate where the file cabinet will be kept and the duration of the storage period.

In addition to the assurance of anonymity and confidentiality provided to the participants, the committee requests that similar protection be provided regarding students who could be identified in situations described by the interviewee. The committee would like you to include a statement in the Consent Form which states that no information will be recorded that would reveal the identity of any student.

Please provide me with a copy of the revised Consent Form that includes the added phrases or statements.

If you have any questions or concerns, please contact me at 632-2232.

Sincerely,

Pat

Patricia Bozyk
Chair
External Research Committee

May 13, 1998

Pat Bozyk
Chair, External Research Committee
Red River Community College

Dear Pat,

Please find attached a revised version of **Appendix F** the **'CONSENT TO PARTICIPATE FORM'** for participants in my research study. The committee has noted legitimate issues which did not occur to me. I hope the revisions I have made in points #9, #10, #11 and #15 address the issue to the committee's satisfaction. Please advise me in writing if the committee is satisfied with the changes I have made. If not, please indicate what further changes they would like.

Thank you. I look forward to your response.

Sincerely,

Karen L. Wall
Graduate Student
Master of Nursing Program
University of Manitoba, Faculty of Nursing

2055 Notre Dame Avenue
Winnipeg, Manitoba, Canada R3H 0J9
204-632-2311 Fax: 204-632-9661

Red River Community College

May 21, 1998

Karen Wall
Graduate Student
Master of Nursing Program
University of Manitoba, Faculty of Nursing

Dear Karen:

Thank you for forwarding the revised version of **Appendix F**, the **'CONSENT TO PARTICIPATE FORM'**, for participants in your research study. The revisions made to the form address the concerns identified by the External Research Committee and satisfy the Committee's request for changes.

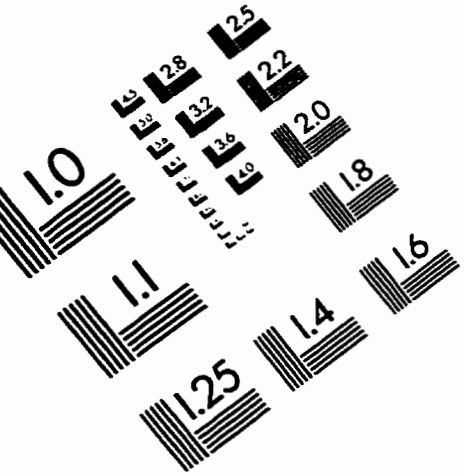
We wish you success in your research!

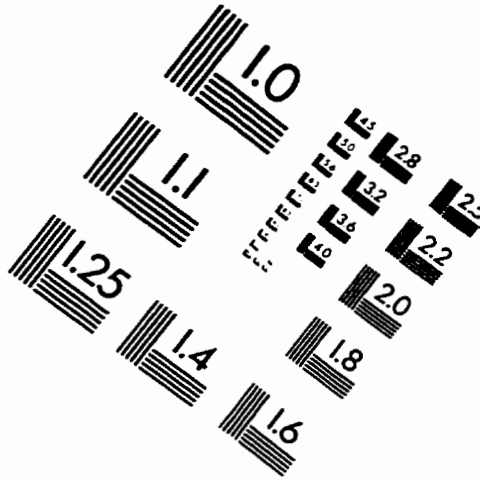
Sincerely,

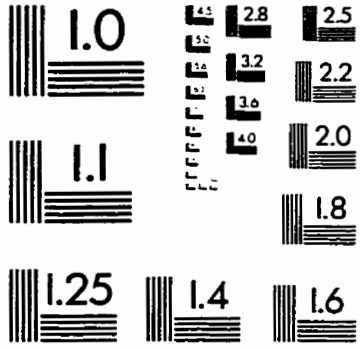
Pat

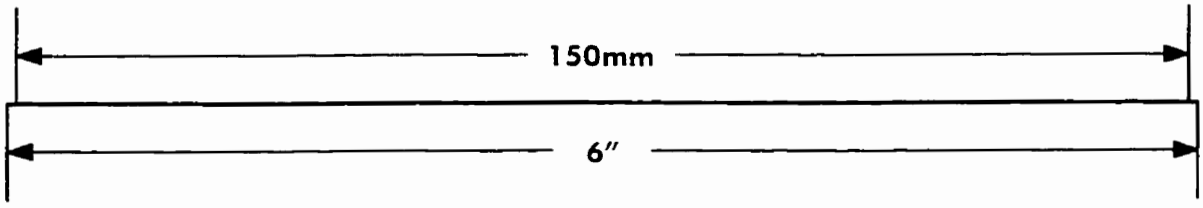
Patricia Bozyk
Chair
External Research Committee

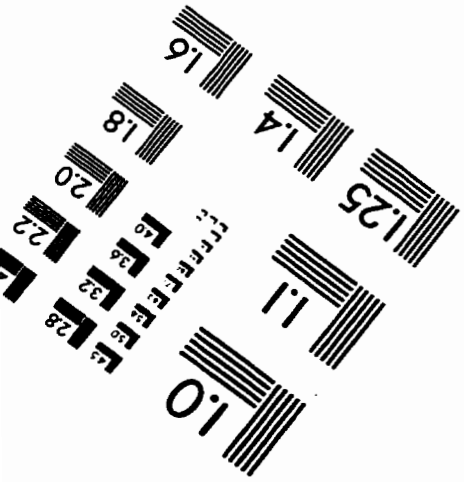
IMAGE EVALUATION TEST TARGET (QA-3)











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